DC/DC CONVERTERS FOR HIGH RELIABILITY AND INDUSTRIAL APPLICATIONS
2 GRADES OF PRODUCTS

Hi-Rel grade converters are designed for demanding applications in extreme environments such as aerospace, military and high-end industrial applications. The modules are potted with a military qualified thermal conductive compound and packaged in a five sided metallic case.

- **Tcase**: -40°C to +105°C
- **Tstorage**: -55°C to +125°C
- **Encapsulation**: Hi-Rel grade qualified potting
- **Burn-in**
- **Control function**
- **Low output ripple voltage**
- **Option** for -55°C start-up and MIL-STD-883C screening

<table>
<thead>
<tr>
<th>Wide Input</th>
<th>Ultra Wide Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>The wide input series is designed for use in distributed power architecture where variable input voltage and transient are prevalent making them ideal particularly for avionics, defense, marine applications.</td>
<td>Designed for multi batteries and transients compliance.</td>
</tr>
<tr>
<td>9 to 45 Vdc</td>
<td>4.5 to 33 Vdc</td>
</tr>
<tr>
<td>16 to 40 Vdc</td>
<td>9 to 60 Vdc</td>
</tr>
<tr>
<td>16 to 80 Vdc</td>
<td>10 to 100 Vdc</td>
</tr>
<tr>
<td>120 to 480 Vdc</td>
<td></td>
</tr>
</tbody>
</table>

Where optimum trade-off between cost and performances is of the essence, industrial grade DC/DC converters is the solution of choice. GAIA Converter proposes two classes of modules, one with standard 2:1 input range and one with wide 4:1 input range.

- **Tcase**: -40°C to +95°C
- **Tstorage**: -45°C to +105°C
- **Encapsulation**: Industrial grade potting
- **Qualified** for industrial grade applications
- **Option** for high isolation up to 3KVdc

### Technical Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Hi-Rel (M) Grade</th>
<th>Industrial (I) Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>83-92%</td>
<td>80-87%</td>
</tr>
<tr>
<td><strong>Output characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set point accuracy (at 75% load)</td>
<td>(+/-) 2%</td>
<td>(+/-) 2%</td>
</tr>
<tr>
<td>Line regulation (Ui min to max)</td>
<td>(+/-) 0.5% max</td>
<td>(+/-) 1% max</td>
</tr>
<tr>
<td>Load regulation (25% to full load)</td>
<td>(+/-) 2% max</td>
<td>(+/-) 2% max</td>
</tr>
<tr>
<td>Ripple output voltage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>for 3.3 and 5 Vdc output voltage</td>
<td>40 mVpp max</td>
<td>50 mVpp max</td>
</tr>
<tr>
<td>for 12 Vdc output voltage</td>
<td>60 mVpp max</td>
<td>100 mVpp max</td>
</tr>
<tr>
<td>for 15 and 24 Vdc output voltage</td>
<td>60 mVpp max</td>
<td>150 mVpp max</td>
</tr>
<tr>
<td><strong>General characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start up</td>
<td>soft start</td>
<td></td>
</tr>
<tr>
<td>Protections</td>
<td>permanent short circuit, temperature, current auto recovery</td>
<td></td>
</tr>
<tr>
<td>Circuit restart</td>
<td>1500 Vdc</td>
<td></td>
</tr>
<tr>
<td>Isolation voltage</td>
<td>100 Mohm</td>
<td></td>
</tr>
<tr>
<td>Isolation resistance</td>
<td>Fixed</td>
<td></td>
</tr>
<tr>
<td>Switching frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-55°C/125°C</td>
<td>-40°C/105°C</td>
</tr>
<tr>
<td>Operating temperature (case)</td>
<td>-40°C/105°C</td>
<td>-40°C/95°C</td>
</tr>
</tbody>
</table>

Please consult product datasheet on our website for complete specifications.
### ISOLATED DC/DC CONVERTER MODULES

<table>
<thead>
<tr>
<th>Family</th>
<th>Grade</th>
<th>Package</th>
<th>Power</th>
<th>Permanent Input Range</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGDxx-04</td>
<td>Hi-Rel</td>
<td>Dil 24</td>
<td>4 W</td>
<td>4.5-5.5V, 18-36V, 9-36V, 16-40V, 36-140V</td>
<td>Single, Bi, Triple</td>
</tr>
<tr>
<td>MGDDx-06/08</td>
<td>Hi-Rel</td>
<td>1&quot; x 0.75&quot;</td>
<td>6/8 W</td>
<td>12-160V, 4.5-33V, 9-60V</td>
<td>Dual</td>
</tr>
<tr>
<td>MGDxx-10</td>
<td>Hi-Rel</td>
<td>1.6&quot; x 1&quot;</td>
<td>10 W</td>
<td>4.5-5.5V, 18-36V, 4.7-16V, 9-36V, 16-40V, 36-140V</td>
<td>Single, Bi, Triple</td>
</tr>
<tr>
<td>MGDSx-18</td>
<td>Hi-Rel</td>
<td>1.6&quot; x 1&quot;</td>
<td>18 W</td>
<td>4.5-5.5V, 4.7-16V, 9-36V, 16-40V, 36-140V</td>
<td>Single</td>
</tr>
<tr>
<td>MGDxx-20</td>
<td>Hi-Rel</td>
<td>2&quot; x 2&quot;</td>
<td>20 W</td>
<td>4.5-5.5V, 18-36V, 4.7-16V, 9-36V, 16-40V, 36-140V</td>
<td>Single, Bi, Triple</td>
</tr>
<tr>
<td>MGDDx-20</td>
<td>Hi-Rel</td>
<td>1.5&quot; x 1&quot;</td>
<td>20 W</td>
<td>12-160V, 4.5-33V, 9-60V</td>
<td>Dual</td>
</tr>
<tr>
<td>MGDDx-21</td>
<td>Hi-Rel</td>
<td>1.25&quot; x 1&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGDxx-25</td>
<td>Hi-Rel</td>
<td>2&quot; x 2&quot;</td>
<td>25 W</td>
<td>9-36V, 16-40V, 18-75V</td>
<td>Single, Bi, Triple</td>
</tr>
<tr>
<td>MGDSx-26</td>
<td>Hi-Rel</td>
<td>2&quot; x 2&quot;</td>
<td>25 W</td>
<td>9-36V, 16-40V</td>
<td>Single</td>
</tr>
<tr>
<td>CGDx-30</td>
<td>Hi-Rel</td>
<td>3&quot; x 2&quot;</td>
<td>30 W</td>
<td>18-36V, 4.7-16V, 9-36V, 16-40V</td>
<td>Up to Six</td>
</tr>
<tr>
<td>MGDxx-35</td>
<td>Hi-Rel</td>
<td>3&quot; x 2&quot;</td>
<td>35 W</td>
<td>9-36V, 16-75V, 36-140V</td>
<td>Single, Bi, Triple</td>
</tr>
<tr>
<td>MGDDx-40</td>
<td>Hi-Rel</td>
<td>1.5&quot; x 1.3&quot;</td>
<td>40 W</td>
<td>4.5-33V, 9-60V</td>
<td>Dual</td>
</tr>
<tr>
<td>MGDxx-60</td>
<td>Hi-Rel</td>
<td>3.25&quot; x 2&quot;</td>
<td>60 W</td>
<td>14-55V, 36-140V, 12-160V</td>
<td>Single Dual</td>
</tr>
<tr>
<td>MGDSx-75</td>
<td>Hi-Rel</td>
<td>1/4 Brick</td>
<td>75 W</td>
<td>9-45V, 16-80V, 155-480V</td>
<td>Single</td>
</tr>
<tr>
<td>MGDD-80</td>
<td>Hi-Rel</td>
<td>2&quot; x 1.6&quot;</td>
<td>80 W</td>
<td>9-60V</td>
<td>Dual</td>
</tr>
<tr>
<td>MGDSx-100</td>
<td>Hi-Rel</td>
<td>3.25&quot; x 2&quot;</td>
<td>100 W</td>
<td>14-55V, 36-140V, 10.7-100V</td>
<td>Single</td>
</tr>
<tr>
<td>MGDSx-150</td>
<td>Hi-Rel</td>
<td>1/2 Brick</td>
<td>150 W</td>
<td>9-45V, 16-80V, 120-480V</td>
<td>Single</td>
</tr>
<tr>
<td>MGDSx-155/ 124/164/204</td>
<td>Hi-Rel</td>
<td>1/4 Brick</td>
<td>150 W/120/160/200 W</td>
<td>9-45V, 16-80V, 155-480V, 9-36V, 18-75V</td>
<td>Single</td>
</tr>
<tr>
<td>MGDS-200</td>
<td>Hi-Rel</td>
<td>2/3 Brick</td>
<td>200 W</td>
<td>9-45V, 16-80V</td>
<td>Single</td>
</tr>
<tr>
<td>MGDS-254</td>
<td>Hi-Rel</td>
<td>1/4 Brick</td>
<td>250 W</td>
<td>9-36V</td>
<td>Single</td>
</tr>
</tbody>
</table>

### NON ISOLATED DC/DC POINT OF LOAD MODULES

<table>
<thead>
<tr>
<th>Family</th>
<th>Grade</th>
<th>Package</th>
<th>Power</th>
<th>Permanent Input Range</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPGS-14A</td>
<td>Hi-Rel</td>
<td>1&quot; x 0.75&quot;</td>
<td>260 W</td>
<td>14.4 A</td>
<td>Single</td>
</tr>
<tr>
<td>Family</td>
<td>Grade</td>
<td>Standards</td>
<td>Package</td>
<td>Power/Current</td>
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<tr>
<td>--------</td>
<td>-------</td>
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<td>---------------</td>
<td></td>
</tr>
<tr>
<td><strong>EMI FILTERS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F6DS - 2 A - 50 V</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-461, DO-160</td>
<td>DIL 24</td>
<td>50 W / 2 A</td>
<td></td>
</tr>
<tr>
<td>F6DS - 6 A - 100 V</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-461, DO-160</td>
<td>1&quot; x 0.75&quot;</td>
<td>150 W / 6 A</td>
<td></td>
</tr>
<tr>
<td>F6DS - 10 A - 50 V</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-461, DO-160</td>
<td>1.6” x 1”</td>
<td>150 W / 10 A</td>
<td></td>
</tr>
<tr>
<td>F6DS - 12 A - 100 V</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-461, DO-160</td>
<td>1.25” x 1”</td>
<td>175 W / 12 A</td>
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</tr>
<tr>
<td>F6DS - 20 A - 50 V</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-461, DO-160</td>
<td>1.6” x 1”</td>
<td>300 W / 20 A</td>
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<tr>
<td><strong>HOLD UP MODULES</strong></td>
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<td></td>
<td></td>
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<tr>
<td>HUGD - 50</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-704, DO-160</td>
<td>1.6” x 1”</td>
<td>50 W</td>
<td></td>
</tr>
<tr>
<td>HUGD - 300</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-704, DO-160</td>
<td>1.6” x 1”</td>
<td>300 W</td>
<td></td>
</tr>
<tr>
<td><strong>AC / DC POWER FACTOR MODULES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HGMB - 35</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-704, DO-160</td>
<td>3.25” x 2”</td>
<td>35 W</td>
<td></td>
</tr>
<tr>
<td>HGMB-50</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-704, DO-160</td>
<td>3.25” x 2”</td>
<td>50 W</td>
<td></td>
</tr>
<tr>
<td>HGMS - 150</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-704, DO-160</td>
<td>1/2 brick</td>
<td>150 W</td>
<td></td>
</tr>
<tr>
<td>HGMS - 350</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-704, DO-160</td>
<td>1/2 brick</td>
<td>350 W</td>
<td></td>
</tr>
<tr>
<td><strong>TRANSIENT PROTECTION MODULES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGDS - 50</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-704, MIL-STD-1275</td>
<td>1.6” x 1”</td>
<td>50 W</td>
<td></td>
</tr>
<tr>
<td>LGDSI - 50</td>
<td>Industrial, Grade</td>
<td>EN50155, RIA12</td>
<td>1.6” x 1”</td>
<td>50 W</td>
<td></td>
</tr>
<tr>
<td>LGDSI - 75</td>
<td>Industrial, Grade</td>
<td>EN50155</td>
<td>1.6” x 1”</td>
<td>75 W</td>
<td></td>
</tr>
<tr>
<td>LGDS - 100</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-1275, DEF-STAN-61.5.6</td>
<td>1.6” x 1”</td>
<td>100 W</td>
<td></td>
</tr>
<tr>
<td>LGDS - 300</td>
<td>Hi-Rel, Grade</td>
<td>MIL-STD-704, MIL-STD-1275</td>
<td>1.6” x 1”</td>
<td>300 W</td>
<td></td>
</tr>
</tbody>
</table>
GAÏA Converter Modular Power Architecture feeds your exact need with one of the most comprehensive range of DC/DC, AC/DC converters and bus adaptation modules. Whether you need basic power or advanced power management, you will find everything you need with GAÏA Converter to meet your sophisticated power supply requirements. This “building block” approach using off-the-shelf products provides unprecedented advantages to ease design, simplify qualification and reduce time to market.

Modular Power Architecture

**DC Modular Power Architecture**

- **DC Front-End Modules**
  - EMI filter module
  - Transient or spike protection module
- **DC Input Bus**
  - FGDS Series
- **PGDS/LGDS Series**
- **HUGD Series**
- **Hold-Up module**

**DC/isolated Converters**

- Single, dual and triple outputs from 3.3V to 48V

**AC Modular Power Architecture**

- **AC PFC module**
- **AC Input Bus**
  - from 85 to 265 Vac/47-440 Hz 320-800 Hz
- **MGDM/I Series**
- **HGMM Series**
• The Experience of a Leader in Hi-Rel Environments
• The Most Comprehensive Range of Products with more than 3500 References from 4W to 350W Power
• Local Support Worldwide
• ISO9001 v 2008 Quality certified

GAIA Converter was founded in 1993. Since that time the company has provided one of the most comprehensive range of modular power components in the market place. GAIA Converter has also brought to the market its well known concept of Modular Power Architecture to allow simple design of complex power supplies. With more than 5000 standard power component references serving the Hi-Rel industrial, transportation, aerospace and military markets, GAIA Converter is recognized as one of the world’s leaders for “power module” solutions. Strongly focused on power modules, GAIA Converter can concentrate all its efforts to propose innovative solutions and a complete comprehensive suite in this field. More than 300 new products are completed every year by our engineering team to cope with new technologies and market trends.

GAIA Converter dedicates significant R&D investment on a continuous basis in order to maintain a state of the art product range. The GAIA engineering team not only designs products with a competitive advantage but is also devoted to solving the customers’ power problems. The company’s advanced design and development capabilities include:

• Circuit behavior simulation
• Thermal management
• Advanced packaging techniques
• Proprietary magnetic and ASIC design
• Environmental test
• Reliability evaluation

The skill and innovative spirit of our design team is supported by a full suite of computer aided engineering tools. These tools include electrical simulation, mechanical design, thermal analysis and optimization, reliability prediction, circuit board layout and manufacturing instructions. This CAE system is used extensively to ensure design performance, traceability and integrity from prototyping to mass production.

With a presence in 25 countries around the world through subsidiaries and local distributors, GAIA Converter is a global company. In three major markets (The Americas, Europe and Asia), Gaia Converter maintains a strong presence with Sales and Technical Support Offices for its distributor network and customers.

GAIA Converter’s manufacturing philosophy is based on fully automated lines with no manual operation. These automated lines include the latest fast SMD pick and place machines, automatic pin insertion tools and automatic potting machines. The extensive use of statistical methods guarantees high quality products.
GAIA Converter products have a long and successful record of projects around the world from Aerospace, Military, Transportation and Hi-End Industrial applications and among them:

AEROSPACE/MILITARY APPLICATIONS INCLUDE:

- **Commercial aircrafts:**
  - Airbus: A320/A330/A340/A380/A350
  - Boeing: B737NG/B777/B787
  - Bombardier: CRJ 100/200/700/900
  - Embraer: ERJ135/140/145/170/190/195
  - Dassault: F50/F900/F2000/F7X/F8X
  - Various: Learjet 60/85, Gulfstream G550/650

- **Military aircrafts:**
  - Fighters: M2000, Rafale, Typhoon, JAS39, Tornado, F-16 Falcon, F/A-18 Hornet, F-35 JSF
  - Cargos: C130 Hercules, C160, C27J, A400M
  - Missions: Awacs, Nimrod MR4A, P3C Orion

- **Commercial & military helicopters:**
  - Eurocopter: HAPEC120/135/155/175, NH-90
  - AgustaWestland: A109/129, AW139, EH101
  - Bell: B206/212, V22, B407/427/430, AH-64
  - Sikorsky: S76, S92, UH-60, RAH-66

- **Military Ground Borne:**
  - Tanks: Leclerc, Leopard, Puma, Bradley
  - Vehicles: LandWarrior, Humvee, VBCI
  - Groundborne: COMM, MMR, MLS...

- **Naval:**
  - PAN, SNLE, FREMM Fregate, Aegis Destroyer

- **Missiles, Torpedoes & UAV’s:**
  - Milan, Eryx, Stinger, Crotale, MLRS, Aster, Exocet, Marte, Sea Wolf, Meteor, Taurus KEPD, Stingray, MU90

TRANSPORTATION APPLICATIONS INCLUDE:

- **Intercity trains and locomotives:**
  - Alstom: TGV, TGV2N, KTX, ET423, AGV
  - Siemens: ICE2, ICE3, ES64, S252
  - Ansaldo: ETR400/500, E402, TAF
  - Bombardier: AGC, Talent, ICN
  - GE Transport: AC6000, Dash
  - Various: locomotives T13, ES65, Euro4000

- **Urban subways & tramways:**
  - Subways: Meteor, MF77, MF2000, M7, Lisboa, NY
  - Tramways: Citadis, Combino, Sirio, Flexity C/E, Icentro, Eurotram

- **Local Rolling stock:**
  - LRV: Arlanda, Gatwick, Frankfurt, OrlyVal, CdGVal
  - Buses/trolleys: Civis, Cristalis, Cito, Agora

- **Signaling equipments:**
  - Positioning systems, TPWS, ETCS
  - ERTMS, Video, Data transmission, GPS-R

INDUSTRIAL APPLICATIONS INCLUDE:

- **Power station & energy controls:**
  - Power generation: VHV, MHV, LV
  - Propulsion node, Heat exchangers

- **Security systems:**
  - Pumps and valves controls, gas and stream controls, petrochemical regulators

- **Environmental control systems:**
  - Seismic acquisition, hydro controls
  - Oil drilling, down hole instrumentation
  - Deep sea exploration
GAIA Converter has always operated a quality system in accordance to ISO 9001 standards and has been certified to the latest ISO 9001 v2015 standard. This standard is now used as a platform for developing a greater appreciation of the quality required by our customers. Our success in this area is recognized by independent approval Authorities such as Underwriters Laboratories (UL) and has resulted in approved and preferred supplier status at major electronics companies. However quality is not a static objective and GAIA Converter is continuously improving in this field and is particularly active with:

**Design for Product Reliability:**
In order to provide reliable products, GAIA Converter has always maintained stringent specifications with the aid of the most advanced theoretical and experienced feedback tools including:

- **Stress analysis:** GAIA Converter products undergo stress analysis and charged factors for each single component used in our products.
- **MTBF:** GAIA Converter calculations are done according to the MIL-HDBK-217F, RDF 2000, IEC-6280-TR methods with conservative quality and environmental factors.
- **Accelerated stress analysis:** all GAIA Converter’s new designs are submitted to accelerate stress (thermal and shocks, thermal cycling and humidity) to analyze reliability.

- **Failure Analysis:** every product returned for failure during operation is carefully analyzed and failure root causes are monitored.

**Manufacturing with Statistical Method for Prevention:**
To manufacture high-quality products, the monitoring at the end of the production process is not enough. Quality has also to be “designed-in” during process and production process. This is achieved by means of appropriate measurements and tools; among them GAIA Converter has implemented:

- **Statistical Process Control (SPC):** for key process parameters all along the manufacturing flow GAIA Converter can establish very quickly deviations from process goal. This allows control over parameters and ensures process durability.
- **Average Outgoing Quality (AOQ):** All products manufactured are 100% tested for acceptance or rejection. The results of this inspection are recorded and monitored carefully.
- **Statistical Product Monitoring (SPM):** All product parameters are recorded to statistically monitor the average deviation.

**Customer Audit Quality:**
GAIA Converter welcomes customer quality audits or independent quality audits on behalf of customers. We have already been audited by independent organization such as Qualifas acting for European Aerospace companies, LCIE acting for UL approval, and major electronics companies from around the world.
HI-REL GRADE
POWER MODULES

www.gaia-converter.com
**KEY FEATURES**

- EMI filter for Avionics/Defense
- MIL-STD-461C/D/E/F compliant
- DO-160C/D/E/F/G compliant
- Input immunity to MIL-STD-1275A/B/C/D
- Input immunity to MIL-STD-704A/D/F

**GENERAL CHARACTERISTICS**

- Nominal power up to : 50 W
- Wide input range 9-50 Vdc
- Input current up to 2A
- Galvanic isolation input/output : non isolated

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**PART NUMBERING**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>FGDS-2A - 50V /</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option A : Screening -55°C start-up temperature</td>
<td></td>
</tr>
<tr>
<td>Option S : Screening and serialization</td>
<td></td>
</tr>
</tbody>
</table>

**INPUT SPECIFICATIONS**

**INPUT RANGE**

| 9-50 Vdc transient : 80 Vdc / 100 ms |
| : 100 Vdc / 50 ms |

**INPUT SPECIFICATIONS**

**INPUT CURRENT**

2A

**PACKAGE AND PIN-OUT**

- Dimensions in inches
- Pin dimensions : Ø 0.03”
- Plastic case black solder plated pin

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+Input (V)</td>
</tr>
<tr>
<td>2</td>
<td>+Output (Vo)</td>
</tr>
<tr>
<td>3</td>
<td>Ground (Gnd)</td>
</tr>
<tr>
<td>4</td>
<td>-Output (Go)</td>
</tr>
<tr>
<td>5</td>
<td>-Input (Gi)</td>
</tr>
</tbody>
</table>
**FRONT-END MODULES**

**DC EMI FILTER 6A**

---

**KEY FEATURES**

- EMI filter for Avionics/Defense
- MIL-STD-461D/E/F compliant
- DO-160C/D/E/F/G compliant
- Input immunity to MIL-STD-1275A/B/C/D
- Input immunity to MIL-STD-704A/D/F

**GENERAL CHARACTERISTICS**

- Nominal power up to : 150 W
- Wide input range 9-100 Vdc
- Input current up to 6A
- Galvanic isolation input/output : non isolated

---

**PART NUMBERING**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>FGDS-6A - 100V /</th>
</tr>
</thead>
</table>

Option /A : Screening -55°C start-up temperature  
Option /S : Screening and serialization

---

**INPUT SPECIFICATIONS**

**INPUT RANGE**

4.5-100 Vdc

---

**INPUT SPECIFICATIONS**

**INPUT CURRENT**

6A

---

**PACKAGE AND PIN-OUT**

Dimensions in inches

---

**Pin dimensions : square pin**  
0.025”

---

**Metallic case black anodized coating gold plated pin**

---

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 6</td>
<td>Ground in (Gndin)</td>
</tr>
<tr>
<td>2, 3</td>
<td>- Input (Gi)</td>
</tr>
<tr>
<td>4, 5</td>
<td>+ Input (Vi)</td>
</tr>
<tr>
<td>7, 12</td>
<td>Ground out (Gndout)</td>
</tr>
<tr>
<td>8, 9</td>
<td>+ Output (Vo)</td>
</tr>
<tr>
<td>10, 11</td>
<td>- Output (Go)</td>
</tr>
</tbody>
</table>

---

www.gaia-converter.com
FRONT-END MODULES
DC EMI FILTER 10A

KEY FEATURES
• EMI filter for Avionics/Defense
• MIL-STD-461D/E/F compliant
• DO-160C/D/E/F/G compliant
• Input immunity to MIL-STD-1275A/B/C/D
• Input immunity to MIL-STD-704A/D/F

GENERAL CHARACTERISTICS
• Nominal power up to : 150 W
• Wide input range 9-50 Vdc
• Input current up to 10A
• Galvanic isolation input/output : non isolated

PART NUMBERING

SINGLE OUTPUT FGDS-10A - 50V /■
Option /A : Screening -55°C start-up temperature
Option /S : Screening and serialization

INPUT SPECIFICATIONS

INPUT RANGE
9-50 Vdc transient : 80 Vdc / 100 ms
: 100 Vdc / 50 ms

INPUT SPECIFICATIONS

INPUT CURRENT
10A

PACKAGE AND PIN-OUT

Dimensions in inches
Pin dimensions : 1, 2, 3, 4 : 0.05"
Pin dimensions : 5, 6 : 0.03"

Metallic case black anodized coating solder plated pin

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+Input (Vi)</td>
</tr>
<tr>
<td>2</td>
<td>- input (Gi)</td>
</tr>
<tr>
<td>3</td>
<td>- Output (Go)</td>
</tr>
<tr>
<td>4</td>
<td>+ Output (Vo)</td>
</tr>
<tr>
<td>5</td>
<td>Ground (Gnd)</td>
</tr>
<tr>
<td>6</td>
<td>Ground (Gnd)</td>
</tr>
</tbody>
</table>

www.gaia-converter.com
**KEY FEATURES**

- EMI filter for Avionics/Defense
- MIL-STD-461D/E/F compliant
- DO-160C/D/E/F/G compliant
- Input immunity to MIL-STD-1275A/B/C/D
- Input immunity to MIL-STD-704A/D/F

**GENERAL CHARACTERISTICS**

- Nominal power up to : 175 W
- Wide input range 9-100 Vdc
- Input current up to 12A
- Galvanic isolation input/output : non isolated

---

**PART NUMBERING**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>FGDS-12A - 100V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option A : Screening -55°C start-up temperature</td>
<td>Option B : Screening and serialization</td>
</tr>
</tbody>
</table>

**INPUT SPECIFICATIONS**

- **INPUT RANGE**
  - 4.5-100 Vdc

**INPUT SPECIFICATIONS**

- **INPUT CURRENT**
  - 12A

**PACKAGE AND PIN-OUT**

Dimensions in inches

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3</td>
<td>- Input (G)</td>
</tr>
<tr>
<td>4, 5</td>
<td>Ground (Gnd)</td>
</tr>
<tr>
<td>6, 7, 8</td>
<td>- Output (Go)</td>
</tr>
<tr>
<td>9, 10, 11</td>
<td>+ Output (Vo)</td>
</tr>
<tr>
<td>12, 13</td>
<td>Ground (Gnd)</td>
</tr>
<tr>
<td>14, 15, 16</td>
<td>+Input (Vi)</td>
</tr>
</tbody>
</table>
KEY FEATURES

- EMI filter for Avionics/Defense
- MIL-STD-461D/E/F compliant
- DO-160C/D/E/F/G compliant
- Input immunity to MIL-STD-1275A/B/C/D
- Input immunity to MIL-STD-704A/D/F

GENERAL CHARACTERISTICS

- Nominal power up to : 300 W
- Wide input range 9-50 Vdc
- Input current up to 20A
- Galvanic isolation input/output : non isolated

PART NUMBERING

SINGLE OUTPUT FGDS-20A - 50V / ■
Option A : Screening -55°C start-up temperature
Option B : Screening and serialization

INPUT SPECIFICATIONS

INPUT RANGE
9-50 Vdc transient : 80 Vdc / 100 ms
100 Vdc / 50 ms

INPUT SPECIFICATIONS

INPUT CURRENT
20A

PACKAGE AND PIN-OUT

Dimensions in inches

1.6”

Pin dimensions : 1, 2, 3, 4 : Ø 0.09”
Pin dimensions : 5, 6 : Ø 0.03”

0.6”

Metallic case black anodized coating solder plated pin

Bottom view

Pin | Single Output
---|----------------
1  | +Input (V)
2  | - Input (G)
3  | - Output (G)
4  | + Output (V)
5  | Ground (Gnd)
6  | Ground (Gnd)
Hi-Rel Grade - Front-End Modules

DC Transient/Drop-Out Protection 50W

Output Specifications

Output Voltage

K : 28 Vdc

Part Numbering

Single Output

PGDS-50 - ■ - ■ / ■

Option A : Screening -55°C start-up temperature
Option B : Screening and serialization
For leaded process add - L after reference - Contact factory for availability

Input Specifications

Input Range

| N | 17-37 Vdc   | Brown out : 10 Vdc / 15 s | Transient : 80 Vdc / 100 ms |
| O | 12-37 Vdc   | Brown out : 6 Vdc / 1 s   | Transient : 100 Vdc / 50 ms |

Key Features

• Transient suppressor & brown out for Avionics/Defense
  - DO160C/D/E/F cat A, B and Z
  - MIL-STD-1275A/B/C/D
• Dedicated for Avionics/Military Applications

General Characteristics

• Transient suppressor 60 Vdc, 80 Vdc, 100 Vdc
• Power range : from 4 W to 50 W
• Galvanic isolation input/output : non isolated
• Protections : input undervoltage lockout

Package and Pin-Out

Dimensions in inches

Pin dimensions : Ø 0.03”

Metallic case black anodized coating solder plated pin

www.gaia-converter.com
FGRT-9 END MODULES
DC transient protection 100W

KEY FEATURES

- Transient suppressor for Avionics/Defense
  - DEF-STAN-61.5 issue 6
  - DO160C/D/E/F cat A, B and Z
  - MIL-STD-1275A/B/C/D

GENERAL CHARACTERISTICS

- Transient suppressor 60, 80, 100, 202 Vdc
- Power range: from 4 W to 100 W
- Galvanic isolation input/output: non-isolated
- Protections: output over current, over temperature
- Additional functions: adjustable inrush current drive

PART NUMBERING

SINGLE OUTPUT LGDS-100 - [-] - / [-]

Option [A]: Screening -55°C start-up temperature
Option [S]: Screening and serialization

INPUT SPECIFICATIONS

INPUT RANGE

P: 9-42 Vdc transient: 202 Vdc / 350 ms

OUTPUT SPECIFICATIONS

OUTPUT VOLTAGE

K: 28 Vdc

PACKAGE AND PIN-OUT

Dimensions in inches

Pin dimensions: square pin 0.025”

Metallic case black anodized coating solder plated pin

Bottom view

---

www.gaia-converter.com
**KEY FEATURES**

- Transient suppressor for Avionics/Defense
  - DO160C/D/E/F cat A, B and Z
  - MIL-STD-1275A/B/C/D

**GENERAL CHARACTERISTICS**

- Transient suppressor 60 Vdc, 80 Vdc, 100 Vdc
- Power range: from 4 W to 300 W
- Galvanic isolation input/output: non isolated
- Protections: output over current, over temperature
- Additional functions: adjustable inrush current drive

---

**INPUT SPECIFICATIONS**

**INPUT RANGE**

- **R**: 9-42 Vdc  transient: 100 Vdc / 50 ms

**OUTPUT SPECIFICATIONS**

**OUTPUT VOLTAGE**

- **K**: 28 Vdc

---

**PACKAGE AND PIN-OUT**

Dimensions in inches

- **1.6”**
- **1”**
- **0.5”**

- Pin dimensions: square pin **0.025”**
- Metallic case black anodized coating solder plated pin

*Bottom view*

**PART NUMBERING**

**SINGLE OUTPUT**

LGDS-300 - [ ]  [ ] / [ ]

Option **[ ]** : Screening -55°C start-up temperature
Option **[ ]** : Screening and serialization

---

www.gaia-converter.com
**Front-End Modules**

**DC Hold Up 50W**

### Key Features

- Unique product for hold-up solutions
- Compliant with DO-160, MIL-704
- Reduce capacitance size by 80%
- Compatible with 9-36 or 16-40 Vdc converters

### General Characteristics

- Power range: from 4 W to 50 W
- Galvanic isolation input/output: non isolated
- Charger switching frequency: 200 KHz
- Protections: reverse polarity
- Additional functions: monitoring signals, programmable charging current limitation, programmable power fail threshold

### Part Numbering

| SINGLE OUTPUT | HUGD-50 / |

Option A: Screening -55°C start-up temperature
Option B: Screening and serialization
For leaded process add - L after reference - Contact factory for availability

### Input Specifications

**Input Range**

- 9-45 Vdc transient: 50 Vdc / 100 ms

### Package and Pin-Out

Dimensions in inches

- **Pin dimensions**: Ø 0.03”

- **Metallic case black anodized coating solder plated pin**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Input (Vi)</td>
</tr>
<tr>
<td>2</td>
<td>Power Fail Set (Vth)</td>
</tr>
<tr>
<td>3</td>
<td>Voltage Current Level (Vcl)</td>
</tr>
<tr>
<td>4</td>
<td>Input (Gi)</td>
</tr>
<tr>
<td>5</td>
<td>Common (Go)</td>
</tr>
<tr>
<td>6</td>
<td>Output (Vo)</td>
</tr>
<tr>
<td>7</td>
<td>Voltage Capacitor</td>
</tr>
<tr>
<td>8</td>
<td>Power Fail Signal (PF)</td>
</tr>
<tr>
<td>9</td>
<td>Capacitor charged signal (CC)</td>
</tr>
<tr>
<td>10</td>
<td>Capacitor discharged signal (CD)</td>
</tr>
</tbody>
</table>
FRONT-END MODULES
DC HOLD UP 300W

PART NUMBERING

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>HUGD-300 /</th>
</tr>
</thead>
</table>

Option A: Screening -55°C start-up temperature
Option B: Screening and serialization

INPUT SPECIFICATIONS

INPUT RANGE
8-100 Vdc

PACKAGE AND PIN-OUT

Dimensions in inches

Metallic case black anodized coating solder plated pin

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Input (V)</td>
</tr>
<tr>
<td>2</td>
<td>Power Fail Set (Vth)</td>
</tr>
<tr>
<td>3</td>
<td>Capacitor Charge Voltage Set (Vcset)</td>
</tr>
<tr>
<td>4</td>
<td>Common (Go)</td>
</tr>
<tr>
<td>5</td>
<td>Common (Go)</td>
</tr>
<tr>
<td>6</td>
<td>Power Fail Signal (PF)</td>
</tr>
<tr>
<td>7</td>
<td>Capacitor discharged signal (CD)</td>
</tr>
<tr>
<td>8</td>
<td>Capacitor charged signal (CC)</td>
</tr>
<tr>
<td>9</td>
<td>Output (Vo)</td>
</tr>
<tr>
<td>10</td>
<td>Voltage Capacitor (Vc)</td>
</tr>
</tbody>
</table>

www.gaia-converter.com

KEY FEATURES

- Unique product for hold-up solutions
- Compliant with DO-160, MIL-704
- Reduce capacitance size by 80%

GENERAL CHARACTERISTICS

- Power range: from 4 W to 300 W
- Galvanic isolation input/output: non isolated
- Charger switching frequency: 700 KHz
- Protections: reverse polarity
- Additional functions: monitoring signals, programmable capacitor charge voltage from 31 to 80 Vdc, programmable power fail threshold
KEY FEATURES

• Dedicated for 115 Vac airborne applications
• Standard 3" x 2" package
• Active PFC: MIL-STD-704, DO-160, ABD100 compliant
• Low input current harmonic distortion < 10%

GENERAL CHARACTERISTICS

• Nominal power up to: 35 W
• Galvanic isolation input/output: 1 500 Vrms
• Switching frequency: 160 KHz
• Protections: output short circuit, output over voltage
• Trim adjustment: no trim
• External synchronization range: no synchro
• Additional functions: on/off

PART NUMBERING

DUAL OUTPUT HGMM-35 - ■ - ■ / ■

Option PA: Screening -55°C start-up temperature
Option PB: Screening and serialization
For leaded process add - L after reference - Contact factory for availability

OUTPUT SPECIFICATIONS

DUAL OUTPUT

17: 2 x 17 Vdc / 2 x 1.05 A

PACKAGE AND PIN-OUT

Dimensions in inches

Pin dimensions: Ø 0.035" Metallic case sunk anodized creating under plated pin

<table>
<thead>
<tr>
<th>Pin</th>
<th>Bi-output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Phase</td>
</tr>
<tr>
<td>2</td>
<td>Neutral</td>
</tr>
<tr>
<td>3</td>
<td>On/Off</td>
</tr>
<tr>
<td>4</td>
<td>On/Off REF</td>
</tr>
<tr>
<td>5</td>
<td>Common 1 (Go1)</td>
</tr>
<tr>
<td>6</td>
<td>Output 1 (Vo1)</td>
</tr>
<tr>
<td>7</td>
<td>Common 2 (Go2)</td>
</tr>
<tr>
<td>8</td>
<td>Output 2 (Vo2)</td>
</tr>
</tbody>
</table>
FRONT-END MODULES
AC ISOLATED PFC 50W

KEY FEATURES
- Dedicated for 115 Vac airborne applications
- Standard 3" x 2" package
- Active PFC : MIL-STD-704, DO-160, ABD100 compliant
- Low input current harmonic distortion < 10%

GENERAL CHARACTERISTICS
- Nominal power up to : 50 W
- Galvanic isolation input/output : 1 500 Vrms
- Switching frequency : 225 KHz
- Protections : output short circuit, output over voltage
- Trim adjustment : no trim
- External synchronization range : no synchro
- Additional functions : on/off

PART NUMBERING

DUAL OUTPUT HGMB-50 - ■ - ■ / ■
Option 77 : Screening -55°C start-up temperature
Option 93 : Screening and serialization
For leaded process add - L after reference - Contact factory for availability

INPUT SPECIFICATIONS

PERMANENT INPUT RANGE

W : 95-140 Vac transient 71-180 Vac / 100 ms frequency 320-800 Hz

OUTPUT SPECIFICATIONS

DUAL OUTPUT

17 : 2 x 17 Vdc / 2 x 1.45 A

PACKAGE AND PIN-OUT

Dimensions in inches

Pin Bi-output
1 Phase
2 Neutral
3 On/Off
4 On/Off Ref
5 Common 1 (Go1)
6 Output 1 (Vo1)
7 Common 2 (Go2)
8 Output 2 (Vo2)

www.gaia-converter.com
FRONT-END MODULES
AC NON ISOLATED PFC 150W

KEY FEATURES
- Dedicated for 115 Vac applications
- Standard half brick package
- Active PFC : MIL-STD-704, DO-160, ABD100 MIL-STD-1399 compliant
- Low input current harmonic distortion < 10%

GENERAL CHARACTERISTICS
- Nominal power up to : 150 W
- Galvanic isolation input/output : non isolated
- Switching frequency : 250 KHz
- Protections : output short circuit, over power, over temperature
- Trim adjustment : no trim
- External synchronization range : no synchro
- Additional functions : on/off, reference voltage, companion module drive control

PART NUMBERING

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>HGMS-150 - ■ - ■ / ■</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option ▲ : Screening -55°C start-up temperature</td>
<td></td>
</tr>
<tr>
<td>Option ▼ : Screening and serialization</td>
<td></td>
</tr>
<tr>
<td>Leaded process add - L after reference</td>
<td></td>
</tr>
</tbody>
</table>

INPUT SPECIFICATIONS

INPUT RANGE

W : 95-140 Vac transient 71-180 Vac / 100 ms frequency 320-800 Hz

OUTPUT SPECIFICATIONS

SINGLE OUTPUT

T : 375 Vdc / 0.4 A

PACKAGE AND PIN-OUT

Dimensions in inches

<table>
<thead>
<tr>
<th>Pin</th>
<th>Bi-output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Phase</td>
</tr>
<tr>
<td>2</td>
<td>Neutral</td>
</tr>
<tr>
<td>3</td>
<td>Output(Vo)</td>
</tr>
<tr>
<td>4</td>
<td>On/Off</td>
</tr>
<tr>
<td>5</td>
<td>Test</td>
</tr>
<tr>
<td>6</td>
<td>Do not connect</td>
</tr>
<tr>
<td>7</td>
<td>Drive</td>
</tr>
<tr>
<td>8</td>
<td>Common (Go)</td>
</tr>
</tbody>
</table>

Metallic case alodined coating solder plated pin

Pin dimensions : Ø 0.04"
FRONT-END MODULES
AC NON ISOLATED PFC 350W

KEY FEATURES
- Dedicated for 115 Vac applications
- Standard half brick package
- Active PFC: MIL-STD-704, DO-160, ABD100 MIL-STD-1399 compliant

GENERAL CHARACTERISTICS
- Nominal power up to: 350 W
- Galvanic isolation input/output: non isolated
- Switching frequency: 250 KHz
- Protections: output short circuit, over power, over temperature
- Trim adjustment: consult factory
- External synchronization range: no synchro
- Additional functions: on/off, reference voltage, companion module drive control

PART NUMBERING

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>HGMS-350 - ■ - ■ / ■</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 11: Screening -55°C start-up temperature</td>
<td></td>
</tr>
<tr>
<td>Option 13: Screening and serialization</td>
<td></td>
</tr>
<tr>
<td>Leaded process add - L after reference</td>
<td></td>
</tr>
</tbody>
</table>

INPUT SPECIFICATIONS

INPUT RANGE

<table>
<thead>
<tr>
<th>INPUT RANGE</th>
<th>frequency 320-800 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>W: 95-140 Vac transient 71-180 Vac/100 ms</td>
<td></td>
</tr>
<tr>
<td>X: 95-140 Vac transient 71-180 Vac/100 ms</td>
<td></td>
</tr>
<tr>
<td>Y: 85-265 Vac -</td>
<td></td>
</tr>
</tbody>
</table>

frequency 47-440 Hz
frequency 50/60 Hz

OUTPUT SPECIFICATIONS

SINGLE OUTPUT

| T: 375 Vdc / 0.9 A (420 Vdc for Y input) |

PACKAGE AND PIN-OUT

Dimensions in inches

<table>
<thead>
<tr>
<th>Pin</th>
<th>Bi-output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Phase</td>
</tr>
<tr>
<td>2</td>
<td>Neutral</td>
</tr>
<tr>
<td>3</td>
<td>Output(Vo)</td>
</tr>
<tr>
<td>4</td>
<td>On/Off</td>
</tr>
<tr>
<td>5</td>
<td>Ref</td>
</tr>
<tr>
<td>6</td>
<td>PFCsh</td>
</tr>
<tr>
<td>7</td>
<td>Drive</td>
</tr>
<tr>
<td>8</td>
<td>Common (Go)</td>
</tr>
</tbody>
</table>

www.gaia-converter.com
**DC/DC CONVERTERS**

**DC NON ISOLATED CONVERTER 260W**

**KEY FEATURES**
- Point of load buck converter
- Single output
- Adjustable soft start
- No load to full load operation

**GENERAL CHARACTERISTICS**
- Nominal power up to: 260 W or current 14A
- Galvanic isolation input/output: non isolated
- Switching frequency: 330 KHz
- Protections: input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment: 1.2V to 24V
- External synchronization range: 200 to 460 KHz
- Additional functions: on/off, sense, parallelization

**PART NUMBERING**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>MPGS-14 - E - B / □</th>
</tr>
</thead>
</table>

Option A: Screening -55°C start-up temperature
Option S: Screening and serialization

**INPUT SPECIFICATIONS**

**INPUT RANGE**

| E | 4.5-36 Vdc | transient 42 Vdc/100 ms |

**OUTPUT SPECIFICATIONS**

**SINGLE OUTPUT**

| B | 3.3 Vdc / adjustable 1.2 to 24 Vdc |

**PACKAGE AND PIN-OUT**

Dimensions in inches

Pin dimensions: square pin 0.025”

Metallic case black anodized coating gold plated pin

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tracking</td>
</tr>
<tr>
<td>2</td>
<td>CM / Share</td>
</tr>
<tr>
<td>3</td>
<td>lim</td>
</tr>
<tr>
<td>4</td>
<td>Sync</td>
</tr>
<tr>
<td>5</td>
<td>SD / UVLO</td>
</tr>
<tr>
<td>6</td>
<td>Vtrim</td>
</tr>
<tr>
<td>7</td>
<td>Sense +</td>
</tr>
<tr>
<td>8, 9</td>
<td>Ground (Gnd)</td>
</tr>
<tr>
<td>10,11</td>
<td>Output (Vo)</td>
</tr>
<tr>
<td>12,13</td>
<td>Input (Vi)</td>
</tr>
</tbody>
</table>
DC/DC CONVERTERS
DC ISOLATED CONVERTERS 4W

PART NUMBERING

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>MGDS-04 - □ - □ / □</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI OUTPUT</td>
<td>MGDB-04 - □ - □ / □</td>
</tr>
<tr>
<td>TRIPLE OUTPUT</td>
<td>MGDT-04 - □ - □ / □</td>
</tr>
</tbody>
</table>

Option 77: Screening -55°C start-up temperature
Option 78: Screening and serialization
For leaded process add - L after reference. Contact factory for availability

INPUT SPECIFICATIONS

<table>
<thead>
<tr>
<th>INPUT RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
</tr>
<tr>
<td>H</td>
</tr>
<tr>
<td>J</td>
</tr>
</tbody>
</table>

OUTPUT SPECIFICATIONS

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BI OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRIPLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF</td>
</tr>
</tbody>
</table>

PACKAGING AND PIN-OUT

Dimensions in inches

Input pin: Ø 0.02”
Metallic case black anodized coating solder plated pin

PIN ASSIGNMENT

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
<th>Bi Output</th>
<th>Triple Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+Input (V)</td>
<td>+Input (V)</td>
<td>+Input (V)</td>
</tr>
<tr>
<td>2</td>
<td>+Input (V)</td>
<td>+Input (V)</td>
<td>+Input (V)</td>
</tr>
<tr>
<td>10</td>
<td>No pin</td>
<td>Common (Go)</td>
<td>No pin</td>
</tr>
<tr>
<td>11</td>
<td>Common (Go)</td>
<td>Common (Go)</td>
<td>Common (Go)</td>
</tr>
<tr>
<td>12</td>
<td>Common (Go)</td>
<td>No pin</td>
<td>Common (Go)</td>
</tr>
<tr>
<td>13</td>
<td>Output (Vo)</td>
<td>Output + (+Vo)</td>
<td>Output + (+Vo)</td>
</tr>
<tr>
<td>14</td>
<td>Output (Vo)</td>
<td>No pin</td>
<td>Output + (+Vo)</td>
</tr>
<tr>
<td>15</td>
<td>No pin</td>
<td>Output + (+Vo)</td>
<td>Output + (+Vo)</td>
</tr>
<tr>
<td>20</td>
<td>On/Off (option)</td>
<td>On/Off (option)</td>
<td>On/Off (option)</td>
</tr>
<tr>
<td>23</td>
<td>-Input (Gi)</td>
<td>-Input (Gi)</td>
<td>-Input (Gi)</td>
</tr>
<tr>
<td>24</td>
<td>-Input (Gi)</td>
<td>-Input (Gi)</td>
<td>-Input (Gi)</td>
</tr>
</tbody>
</table>

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KEY FEATURES

- Low profile 0.3” package
- Single, bi or triple outputs
- Soft start
- No optocoupler for high reliability

GENERAL CHARACTERISTICS

- Nominal power up to : 4 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 480 KHz
- Protections : output short circuit
- Trim adjustment : no trim
- External synchronization range : no synchro
- Additional functions : on/off
DC/DC CONVERTERS
DC ISOLATED CONVERTERS 8W

PART NUMBERING

DUAL OUTPUT  
MGDD-08 - ■ - ■ / ■

Option 7: Screening -55°C start-up temperature
Option 8: Screening and serialization

INPUT SPECIFICATIONS

ULTRA WIDE INPUT

N: 9-60 Vdc  transient : 80 Vdc / 1 s
E: 4.5-33 Vdc  transient : 45 Vdc / 0.1 s

OUTPUT SPECIFICATIONS

DUAL ISOLATED OUTPUT*

C: 2 x 5 Vdc / 2 x 0.8 A
E: 2 x 12 Vdc / 2 x 0.33 A
F: 2 x 15 Vdc / 2 x 0.26 A
I: 2 x 24 Vdc / 2 x 0.16 A

* Possible unbalanced power up to 10% / 90%

PACKAGE AND PIN-OUT

Dimensions in inches

Pin dimensions: square pin 0.025"  
Metallic case black anodized coating gold plated pin

Pin  Dual Output
1  Synchro / On Off
2  UVLO
3  Input (G3)
4  VIF
5  + Input (V+)
6  + Output 2 (Vo2)
7  - Output 2 (Go2)
8  + Output 1 (Vo1)
9  - Output 1 (Go1)
10  Vtrim
Hi-Rel
Grade

HI-REL GRADE - DC/DC CONVERTERS

PART NUMBERING

| SINGLE OUTPUT | MGDS-10 - ■ - ■ / ■ |
| BI OUTPUT    | MGDB-10 - ■ - ■ / ■ |
| TRIPLE OUTPUT| MGDT-10 - ■ - ■ / ■ |

Option /T : Screening -55°C start-up temperature
Option /S : Screening and serialization - Option M : On/Off function
For leaded process add - L after reference. Contact factory for availability

KEY FEATURES

• Low profile 0.33" package
• Single, bi or triple outputs
• Soft start
• No optocoupler for high reliability

GENERAL CHARACTERISTICS

• Nominal power up to : 10 W
• Galvanic isolation input/output : 1 500 Vdc
• Switching frequency : 480 KHz
• Protections : output short circuit
• Trim adjustment : no trim
• External synchronization range : no synchro
• Additional functions : on/off on option

INPUT SPECIFICATIONS

INPUT RANGE

| C | 4.5-5.5 Vdc |
| H | 9-36 Vdc transient 40 Vdc/100 ms |
| J | 16-40 Vdc transient 50 Vdc/100 ms |

OUTPUT SPECIFICATIONS

SINGLE OUTPUT

| B | 3.3 Vdc / 2 A |
| C | 5 Vdc / 2 A |
| E | 12 Vdc / 0.8 A |
| F | 15 Vdc / 0.65 A |

BI OUTPUT

| C | ± 5 Vdc / ± 1 A |
| E | ± 12 Vdc / ± 0.4 A |
| F | ± 15 Vdc / ± 0.325 A |

TRIPLE OUTPUT

| CE | 5 Vdc & ± 12 Vdc / 1 A & ± 0.2 A |
| CF | 5 Vdc & ± 15 Vdc / 1 A & ± 0.15 A |

PACKAGE AND PIN-OUT

Dimensions in inches

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
<th>BI Output</th>
<th>Triple Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+Input (Vi)</td>
<td>+Input (Vi)</td>
<td>+Input (Vi)</td>
</tr>
<tr>
<td>2</td>
<td>Gate*</td>
<td>No pin</td>
<td>No pin</td>
</tr>
<tr>
<td>3</td>
<td>-Input (Gi)</td>
<td>-Input (Gi)</td>
<td>-Input (Gi)</td>
</tr>
<tr>
<td>4</td>
<td>Output (Vo)</td>
<td>Output+ (Vo)</td>
<td>Output 1 (V1)</td>
</tr>
<tr>
<td>5</td>
<td>No Pin</td>
<td>Common (Go)</td>
<td>No pin</td>
</tr>
<tr>
<td>6</td>
<td>Common (Go)</td>
<td>Output- (-Vo)</td>
<td>Common (Go)</td>
</tr>
<tr>
<td>7</td>
<td>No pin</td>
<td>No pin</td>
<td>Output 2+ (+V2)</td>
</tr>
<tr>
<td>8</td>
<td>No pin</td>
<td>No pin</td>
<td>Output 2- (-V2)</td>
</tr>
<tr>
<td>A</td>
<td>On/Off (option)</td>
<td>On/Off (option)</td>
<td>On/Off (option)</td>
</tr>
</tbody>
</table>

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DC/DC CONVERTERS
DC ISOLATED CONVERTERS 20W

KEY FEATURES

• Ultra wide input 9-60 Vdc, 4.5-33 Vdc
• Flexible isolated dual outputs
• Soft start
• No load to full load operation
• No optocoupler for high reliability

GENERAL CHARACTERISTICS

• Nominal power up to : 20 W
• Galvanic isolation input/output : 1500 Vdc
• Switching frequency : 330 KHz
• Protections : input undervoltage lockout, output current limitation
• Trim adjustment : 80% to 110%
• External synchronization range : 270 to 360 KHz
• Additional functions : on/off, input current ripple reduction, adjustable undervoltage lockout

PART NUMBERING

<table>
<thead>
<tr>
<th>Dual Output</th>
<th>MGDD-21 - [IS] / [IS]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option [I]</td>
<td>Screening -55°C start-up temperature</td>
</tr>
<tr>
<td>Option [S]</td>
<td>Screening and serialization</td>
</tr>
</tbody>
</table>

INPUT SPECIFICATIONS

ULTRA WIDE INPUT

| N | 9-60 Vdc transient : 80 Vdc / 1 s |
| E | 4.5-33 Vdc transient : 45 Vdc / 0.1 s |

OUTPUT SPECIFICATIONS

DUAL ISOLATED OUTPUT

| B | 2 x 3.3 Vdc / 2 x 2 A |
| C | 2 x 5 Vdc / 2 x 2 A |
| E | 2 x 12 Vdc / 2 x 0.825 A |

| F | 2 x 15 Vdc / 2 x 0.65 A |
| I | 2 x 24 Vdc / 2 x 0.42 A |

* Possible unbalanced power up to 10% / 90%

PACKAGE AND PIN-OUT

Dimensions in inches

Pin dimensions : square pin 0.025"
DC/DC CONVERTERS
DC ISOLATED CONVERTERS 40W

**PART NUMBERING**

<table>
<thead>
<tr>
<th>DUAL OUTPUT</th>
<th>MGDD-40 - ■ - ■ / ■</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 71: Screening -55°C start-up temperature</td>
<td></td>
</tr>
<tr>
<td>Option 72: Screening and serialization</td>
<td></td>
</tr>
</tbody>
</table>

**KEY FEATURES**

- Ultra wide input 9-60 Vdc, 4.5-33 Vdc
- Flexible isolated dual outputs
- Soft start
- No load to full load operation
- No optocoupler for high reliability

**GENERAL CHARACTERISTICS**

- Nominal power up to: 40 W
- Galvanic isolation input/output: 1500 Vdc
- Switching frequency: 330 KHz
- Protections: input undervoltage lockout, output current limitation
- Trim adjustment: 80% to 110%
- External synchronization range: 270 to 360 KHz
- Additional functions: on/off, input current ripple reduction, adjustable undervoltage lockout

**INPUT SPECIFICATIONS**

**ULTRA WIDE INPUT**

- N: 9-60 Vdc transient: 80 Vdc / 1 s
- E: 4.5-33 Vdc transient: 45 Vdc / 0.1 s

**OUTPUT SPECIFICATIONS**

**DUAL ISOLATED OUTPUT***

- B: 2 x 3.3 Vdc / 2 x 4 A
- C: 2 x 5 Vdc / 2 x 4 A
- E: 2 x 12 Vdc / 2 x 1.65 A

**DUAL ISOLATED OUTPUT***

- F: 2 x 15 Vdc / 2 x 1.30 A
- I: 2 x 24 Vdc / 2 x 0.85 A

* Possible unbalanced power up to 10% / 90%

**PACKAGE AND PIN-OUT**

Dimensions in inches

![Pin dimensions: square pin 0.025"](image)

Metallic case black anodized coating gold plated pin

<table>
<thead>
<tr>
<th>Pin</th>
<th>Dual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Synchro-SD</td>
</tr>
<tr>
<td>2</td>
<td>UVLO</td>
</tr>
<tr>
<td>3</td>
<td>- Input (Gi)</td>
</tr>
<tr>
<td>4</td>
<td>- Input (Gi)</td>
</tr>
<tr>
<td>5</td>
<td>Vf</td>
</tr>
<tr>
<td>6</td>
<td>- Input (Vi)</td>
</tr>
<tr>
<td>7</td>
<td>- Input (Vi)</td>
</tr>
<tr>
<td>8</td>
<td>- Output 2 (Vo2)</td>
</tr>
<tr>
<td>9</td>
<td>- Output 2 (Go2)</td>
</tr>
<tr>
<td>10</td>
<td>- Output 1 (Vb1)</td>
</tr>
<tr>
<td>11</td>
<td>- Output 1 (Go1)</td>
</tr>
<tr>
<td>12</td>
<td>Vtrim</td>
</tr>
</tbody>
</table>

www.gaia-converter.com
DC/DC CONVERTERS

DC ISOLATED CONVERTERS 75W

PART NUMBERING

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>MGDS-75 - ■ - ■ / ■</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option A7</td>
<td>Screening -55°C start-up temperature</td>
</tr>
<tr>
<td>Option A8</td>
<td>Screening and serialization</td>
</tr>
<tr>
<td>Leaded process for low input H and O series add - L after reference</td>
<td></td>
</tr>
</tbody>
</table>

INPUT SPECIFICATIONS

INPUT RANGE

H: 9-45 Vdc  
O: 16-80 Vdc  
S: 155-480 Vdc

OUTPUT SPECIFICATIONS

SINGLE OUTPUT

| B | 3.3 Vdc / 15 A  
| C | 5 Vdc / 15 A  
| E | 12 Vdc / 6.25 A |

SINGLE OUTPUT

| F | 15 Vdc / 5 A  
| I | 24 Vdc / 3.125 A* |

SINGLE OUTPUT

| J | 28 Vdc / 2.7 A* |

* MGDM-75-S Series exist in 26 Vdc output  
while MGDM-75-H Series and MGDM-75-O Series exist in 24 Vdc and 28 Vdc output.

PACKAGE AND PIN-OUT

Dimensions in inches

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Input (G)</td>
</tr>
<tr>
<td>2</td>
<td>Synchro (Sync)</td>
</tr>
<tr>
<td>3</td>
<td>On/Off</td>
</tr>
<tr>
<td>4</td>
<td>+Input (V)</td>
</tr>
<tr>
<td>5</td>
<td>+Output (Vos)</td>
</tr>
<tr>
<td>6</td>
<td>Sense + (G+)</td>
</tr>
<tr>
<td>7</td>
<td>Trim (Trim)</td>
</tr>
<tr>
<td>8</td>
<td>Sense - (G-)</td>
</tr>
<tr>
<td>9</td>
<td>-Output (GSC)</td>
</tr>
</tbody>
</table>

KEY FEATURES

- Standard quarter brick package  
- Single output  
- Soft start  
- No load to full load operation  
- No optocoupler for high reliability

GENERAL CHARACTERISTICS

- Nominal power up to: 75 W  
- Galvanic isolation input/output: 1 500 Vdc (2 200 Vdc for S input)  
- Switching frequency: 420 KHz  
- Protections: input undervoltage lockout, output current limitation, output overvoltage, over temperature  
- Trim adjustment: 80% to 110%  
- External synchronization range: 420 to 480 KHz  
- Additional functions: on/off, sense

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DC/DC CONVERTERS
Hi-Rel Grade

DC ISOLATED CONVERTERS 80W

KEY FEATURES
- Ultra wide input 9-60 Vdc
- Flexible isolated dual outputs
- Soft start
- No load to full load operation
- No optocoupler for high reliability

GENERAL CHARACTERISTICS
- Nominal power up to : 80 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 330 KHz
- Protections : input undervoltage lockout, output current limitation; over temperature
- Trim adjustment : 80% to 110%
- External synchronization range : 270 to 360 KHz
- Additional functions : on/off, input current ripple reduction, adjustable undervoltage lockout, over temperature shut down.

PART NUMBERING

<table>
<thead>
<tr>
<th>DUAL OUTPUT</th>
<th>MGDD-80 - S - T / S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option S : Screening and serialization</td>
<td></td>
</tr>
<tr>
<td>Option T : Screening -55°C start-up temperature</td>
<td></td>
</tr>
</tbody>
</table>

INPUT SPECIFICATIONS

ULTRA WIDE INPUT

| N | 9-60 Vdc transient : 80 Vdc / 1 s |

OUTPUT SPECIFICATIONS

DUAL ISOLATED OUTPUT

| B | 2 x 3.3 Vdc / 2 x 8 A |
| C | 2 x 5 Vdc / 2 x 8 A |
| E | 2 x 12 Vdc / 2 x 3.3 A |

| F | 2 x 15 Vdc / 2 x 2.6 A |
| I | 2 x 24 Vdc / 2 x 1.7 A |

* Possible unbalanced power up to 10% / 90%

PACKAGE AND PIN-OUT

Dimensions in inches

Pin dimensions : square pin 0.025"
DC/DC CONVERTERS
DC ISOLATED CONVERTERS 150W

KEY FEATURES
• Standard half brick package
• Single output
• Soft start
• No load to full load operation
• No optocoupler for high reliability

GENERAL CHARACTERISTICS
• Nominal power up to : 150 W
• Galvanic isolation input/output : 1500 Vdc (2200 Vdc for T input)
• Switching frequency : 420 KHz (210 KHz for T input)
• Protections : input undervoltage lockout, input overvoltage lockout, output current limitation, output overvoltage, over temperature
• Trim adjustment : 10% to 110%
• External synchronization range : 420 to 480 KHz (220 KHz to 235 KHz for T input)
• Additional functions : on/off, sense, parallelization

PART NUMBERING

SINGLE OUTPUT
MGDS-150 - ■ - ■ / ■

Option A : Screening -55°C start-up temperature
Option B : Screening and serialization
Leaded process add - L after reference

INPUT SPECIFICATIONS

INPUT RANGE

H : 9-45 Vdc
O : 16-80 Vdc
T : 120-480 Vdc

OUTPUT SPECIFICATIONS

SINGLE OUTPUT

B : 3.3 Vdc / 30 A
C : 5 Vdc / 30 A
E : 12 Vdc / 12.5 A

SINGLE OUTPUT

F : 15 Vdc / 10 A
I : 24 Vdc / 6.25 A
J : 28 Vdc / 5.3 A

PACKAGE AND PIN-OUT

Dimensions in mm and (inches)

Pin Single Output
1 -Input (Gi)
2 Synchro (Sync)
3 Share
4 On/Off
5 +Input (Vi)
6 Output (Vo)
7 Sense + (S+)
8 Trim (Trim)
9 Sense - (S-)
10 Common (Gg)

Metallic case aluminized coating solder plated pin

Pin dimensions :
Pin 1, 2, 3, 4, 5, 7, 8, 9 : Ø 1 mm (0.04")
Pin 6, 10 : Ø 2 mm (0.08")
DC/DC CONVERTERS
DC ISOLATED CONVERTERS 150W

PART NUMBERING

| SINGLE OUTPUT | MGDS-155 - | / |

Option | : Screening -55°C start-up temperature
Option : Screening and serialization
Labeled process for low input H and O series add - L after reference

INPUT SPECIFICATIONS

INPUT RANGE

- **H**: 9-45 Vdc
- **O**: 16-80 Vdc
- **S**: 155-480 Vdc

OUTPUT SPECIFICATIONS

| SINGLE OUTPUT | SINGLE OUTPUT | SINGLE OUTPUT |

- **C**: 5 Vdc / 30 A
- **E**: 12 Vdc / 12.5 A
- **F**: 15 Vdc / 10 A
- **I**: 24 Vdc / 6.25 A
- **J**: 26 Vdc / 5.8 A
- **26**: 26 Vdc / 5.8 A

PACKAGE AND PIN-OUT

Dimensions in inches

- **W**
- **H**

Pin dimensions:

- Pins 1, 2, 3, 4, 5, 7, 8, 9: <= 0.04" (0.10 mm)
- Pins 6, 10: <= 0.06" (0.15 mm)

Metallic case assembled coating gold plated pin

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KEY FEATURES

- Standard quarter brick package
- Single output
- Soft start
- No load to full load operation
- No optocoupler for high reliability

GENERAL CHARACTERISTICS

- Nominal power up to : 150 W
- Galvanic isolation input/output : 1 500 Vdc
  (2 200 Vdc for S input)
- Switching frequency : 330 KHz
- Protections : input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment : 90% to 110%
- External synchronization range : 330 to 370 KHz
- Additional functions : on/off, sense
DC/DC CONVERTERS
DC ISOLATED CONVERTERS 200W

KEY FEATURES

- Unique product with heat dissipation on side
- Single output
- Soft start
- No load to full load operation
- No optocoupler for high reliability

GENERAL CHARACTERISTICS

- Nominal power up to: 200 W
- Galvanic isolation input/output: 1 500 Vdc
- Switching frequency: 270 KHz
- Protections: Input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment: 10% to 110%
- External synchronization range: 285 to 310 KHz
- Additional functions: on/off, sense, parallelization, reference voltage, input current ripple reduction

PART NUMBERING

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>MGDS-200- ■ - ■ / ■</th>
</tr>
</thead>
</table>
| Option Ç : Screening -55°C start-up temperature
| Option Ç : Screening and serialization |

INPUT SPECIFICATIONS

<table>
<thead>
<tr>
<th>INPUT RANGE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H : 9-45 Vdc</td>
<td></td>
</tr>
<tr>
<td>O : 16-80 Vdc</td>
<td></td>
</tr>
</tbody>
</table>

OUTPUT SPECIFICATIONS

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>SINGLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>B : 3.3 Vdc / 35 A</td>
<td></td>
</tr>
<tr>
<td>C : 5 Vdc / 35 A</td>
<td></td>
</tr>
<tr>
<td>E : 12 Vdc / 16.5 A</td>
<td></td>
</tr>
<tr>
<td>F : 15 Vdc / 13.3 A</td>
<td></td>
</tr>
<tr>
<td>I : 24 Vdc / 8.4 A</td>
<td></td>
</tr>
</tbody>
</table>

PACKAGE AND PIN-OUT

Dimensions in inches

```
<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Synchro (Sync)</td>
</tr>
<tr>
<td>2</td>
<td>On/Off</td>
</tr>
<tr>
<td>3</td>
<td>Vt</td>
</tr>
<tr>
<td>5</td>
<td>Gia</td>
</tr>
<tr>
<td>6</td>
<td>-Input (Gi)</td>
</tr>
<tr>
<td>7</td>
<td>-Input (Gi)</td>
</tr>
<tr>
<td>8</td>
<td>+Input (Vi)</td>
</tr>
<tr>
<td>9</td>
<td>+Input (Vi)</td>
</tr>
<tr>
<td>10</td>
<td>+Output (Vo)</td>
</tr>
<tr>
<td>11</td>
<td>+Output (Vo)</td>
</tr>
<tr>
<td>12</td>
<td>-Output (Go)</td>
</tr>
<tr>
<td>13</td>
<td>-Output (Go)</td>
</tr>
<tr>
<td>14</td>
<td>Trim</td>
</tr>
<tr>
<td>15</td>
<td>Share</td>
</tr>
<tr>
<td>16</td>
<td>Sense + (S+)</td>
</tr>
<tr>
<td>17</td>
<td>Trim</td>
</tr>
<tr>
<td>18</td>
<td>Sense - (S-)</td>
</tr>
</tbody>
</table>
```

Pin Extensions: N 0.015"
DC/DC CONVERTERS
DC ISOLATED CONVERTERS 200W

PART NUMBERING

SINGLE OUTPUT
MGDS-205 - [ ] / [ ]
Option [ ]: Synchronization function
Option [ ]: Screening and serialization
Option [ ]: Screening -55°C start-up temperature

INPUT SPECIFICATIONS

INPUT RANGE

H : 9-45 Vdc

OUTPUT SPECIFICATIONS

SINGLE OUTPUT

E : 12 Vdc / 16.65 A

PACKAGE AND PIN-OUT

Dimensions in inches

KEY FEATURES

- Standard quarter brick package
- Single output
- Soft start
- No load to full load operation

GENERAL CHARACTERISTICS

- Nominal power up to : 200 W
- Galvanic isolation input/output : 1500 Vdc
- Switching frequency : 330 KHz
- Protections : input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment : 90% to 110%
- External synchronization range : synchro on option
- Additional functions : on/off, sense

www.gaia-converter.com
**DC/DC CONVERTERS**

**DC ISOLATED CONVERTERS 18W**

**KEY FEATURES**
- Small surface 1” x 1.5” package
- Single output
- Soft start
- No optocoupler for high reliability

**GENERAL CHARACTERISTICS**
- Nominal power up to : 18 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 480 KHz
- Protections : output short circuit
- Trim adjustment : no trim
- External synchronization range : no synchro
- Additional functions : on/off on option

**INPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>INPUT RANGE</th>
<th>SINGLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>C : 4.5-5.5 Vdc</td>
<td>E : ± 5 Vdc / ± 2 A</td>
</tr>
<tr>
<td>H : 9-36 Vdc transient 40 Vdc / 110 ms</td>
<td>F : ± 15 Vdc / ± 1.2 A</td>
</tr>
<tr>
<td>J : 16-40 Vdc transient 50 Vdc / 110 ms</td>
<td></td>
</tr>
</tbody>
</table>

**PART NUMBERING**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>MGDS-18 - ■ - ■ / ■</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI OUTPUT</td>
<td>MGDB-18 - ■ - ■ / ■</td>
</tr>
<tr>
<td>TRIPLE OUTPUT</td>
<td>MGDT-18 - ■ - ■ / ■</td>
</tr>
</tbody>
</table>

**OUTPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>BI OUTPUT</th>
<th>TRIPLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>E : ± 5 Vdc / ± 2 A</td>
<td>F : ± 15 Vdc / ± 1.2 A</td>
<td></td>
</tr>
<tr>
<td>E : ± 12 Vdc / ± 0.8 A</td>
<td>F : ± 15 Vdc / ± 0.65 A</td>
<td></td>
</tr>
<tr>
<td>F : ± 15 Vdc / ± 1.2 A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MGDM-25 Series**

**DC/DC CONVERTERS**

**DC ISOLATED CONVERTERS 25W**

**KEY FEATURES**
- Standard 2” x 2” package
- Single, bi or triple outputs
- Soft start
- No optocoupler for high reliability

**GENERAL CHARACTERISTICS**
- Nominal power up to : 25 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 250 KHz
- Protections : output short circuit
- Trim adjustment : no trim
- External synchronization range : no synchro
- Additional functions : on/off on option

**INPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>INPUT RANGE</th>
<th>SINGLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>C : 4.5-5.5 Vdc</td>
<td>E : ± 5 Vdc / ± 2.5 A</td>
</tr>
<tr>
<td>H : 9-36 Vdc transient 40 Vdc / 110 ms</td>
<td>F : ± 15 Vdc / ± 0.825 A</td>
</tr>
<tr>
<td>J : 16-40 Vdc transient 50 Vdc / 110 ms</td>
<td></td>
</tr>
</tbody>
</table>

**PART NUMBERING**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>MGDS-25 - ■ - ■ / ■</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI OUTPUT</td>
<td>MGDB-25 - ■ - ■ / ■</td>
</tr>
<tr>
<td>TRIPLE OUTPUT</td>
<td>MGDT-25 - ■ - ■ / ■</td>
</tr>
</tbody>
</table>

**OUTPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>BI OUTPUT</th>
<th>TRIPLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>E : ± 5 Vdc / ± 2.5 A</td>
<td>F : ± 15 Vdc / ± 0.825 A</td>
<td></td>
</tr>
<tr>
<td>E : ± 12 Vdc / ± 1 A</td>
<td>F : ± 15 Vdc / ± 0.65 A</td>
<td></td>
</tr>
<tr>
<td>F : ± 15 Vdc / ± 1.65 A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MGDM-20 Series**

**DC/DC CONVERTERS**

**DC ISOLATED CONVERTERS 20W**

**KEY FEATURES**
- Standard 2” x 2” package
- Single, bi or triple outputs
- Soft start
- No optocoupler for high reliability

**GENERAL CHARACTERISTICS**
- Nominal power up to : 20 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 480 KHz
- Protections : output short circuit
- Trim adjustment : no trim
- External synchronization range : no synchro
- Additional functions : on/off

**INPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>INPUT RANGE</th>
<th>SINGLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>C : 4.5-5.5 Vdc</td>
<td>E : ± 5 Vdc / ± 2 A</td>
</tr>
<tr>
<td>H : 9-36 Vdc transient 40 Vdc / 110 ms</td>
<td>F : ± 15 Vdc / ± 1.2 A</td>
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<td>J : 16-40 Vdc transient 50 Vdc / 110 ms</td>
<td></td>
</tr>
</tbody>
</table>

**PART NUMBERING**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>MGDS-20 - ■ - ■ / ■</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI OUTPUT</td>
<td>MGDB-20 - ■ - ■ / ■</td>
</tr>
<tr>
<td>TRIPLE OUTPUT</td>
<td>MGDT-20 - ■ - ■ / ■</td>
</tr>
</tbody>
</table>

**OUTPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>BI OUTPUT</th>
<th>TRIPLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>E : ± 5 Vdc / ± 2 A</td>
<td>F : ± 15 Vdc / ± 1.2 A</td>
<td></td>
</tr>
<tr>
<td>E : ± 12 Vdc / ± 0.8 A</td>
<td>F : ± 15 Vdc / ± 0.65 A</td>
<td></td>
</tr>
<tr>
<td>F : ± 15 Vdc / ± 1.3 A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PART NUMBERING**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>MGDS-25 - ■ - ■ / ■</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI OUTPUT</td>
<td>MGDB-25 - ■ - ■ / ■</td>
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<tr>
<td>TRIPLE OUTPUT</td>
<td>MGDT-25 - ■ - ■ / ■</td>
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</tbody>
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**OUTPUT SPECIFICATIONS**

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<td>E : ± 12 Vdc / ± 0.8 A</td>
<td>F : ± 15 Vdc / ± 0.65 A</td>
<td></td>
</tr>
<tr>
<td>F : ± 15 Vdc / ± 1.3 A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DC/DC CONVERTERS

DC ISOLATED CONVERTERS 26W

PART NUMBERING

SINGLE OUTPUT

MGDS-26 - 5R+6 / 6QSE

Option T: Screening -50°C startup temperature
Option S: Screening and serialization
For leaded process add - L after reference. Contact factory for availability

INPUT SPECIFICATIONS

INPUT RANGE

\[
\begin{align*}
|H|: & \quad 9-36 \text{ Vdc transient} \quad 40 \text{ Vdc} / 100 \text{ ms} \\
|J|: & \quad 16-40 \text{ Vdc transient} \quad 50 \text{ Vdc} / 100 \text{ ms}
\end{align*}
\]

OUTPUT SPECIFICATIONS

OUTPUT

\[
\begin{align*}
|B|: & \quad 3.3 \text{ Vdc} / 6 \text{ A} \\
|C|: & \quad 5 \text{ Vdc} / 5 \text{ A} \\
|E|: & \quad 12 \text{ Vdc} / 2 \text{ A} \\
|F|: & \quad 15 \text{ Vdc} / 1.65 \text{ A}
\end{align*}
\]

KEY FEATURES

- Standard 2" x 2" package
- Single output
- Soft start
- No load to full load operation
- No optocoupler for high reliability

GENERAL CHARACTERISTICS

- Nominal power up to: 25 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 1 MHz
- Protections : input undervoltage lockout, output short circuit
- Trim adjustment : 80% to 110%
- External synchronization range : 1.05 to 1.15 MHz
- Additional functions : on/off, sense parallelization

DC/DC CONVERTERS

DC ISOLATED CONVERTERS 30W

PART NUMBERING

SINGLE LINE OUTPUT

CGDM-30 - 5R+6 / 6QSE

DUAL LINE OUTPUT

CGDM-30 - 5R+6 / 6QSE

TRIPLE LINE OUTPUT

CGDM-30 - 5R+6 / 6QSE

Option T: Screening -50°C startup temperature
Option S: Screening and serialization
For leaded process add - L after reference. Contact factory for availability

INPUT SPECIFICATIONS

INPUT RANGE

\[
\begin{align*}
|H|: & \quad 9-36 \text{ Vdc transient} \quad 40 \text{ Vdc} / 100 \text{ ms} \\
|J|: & \quad 16-40 \text{ Vdc transient} \quad 50 \text{ Vdc} / 100 \text{ ms}
\end{align*}
\]

OUTPUT SPECIFICATIONS

OUTPUT

\[
\begin{align*}
|B|: & \quad 3.3 \text{ Vdc} \\
|C|: & \quad 5 \text{ Vdc} \\
|E|: & \quad 12 \text{ Vdc} \\
|F|: & \quad 15 \text{ Vdc}
\end{align*}
\]

KEY FEATURES

- Low profile 0.33" package
- Highly configurable DC/DC converter
- Up to 6 outputs and 3 independent line regulations
- Soft start
- No optocoupler for high reliability

GENERAL CHARACTERISTICS

- Nominal power up to: 30 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 480 KHz
- Protections : output short circuit, output overvoltage, over temperature
- Trim adjustment : 95% to 105%
- External synchronization range : no synchro
- Additional functions : on/off, reference voltage, adjustable undervoltage lockout

DC/DC CONVERTERS

DC ISOLATED CONVERTERS 35W

PART NUMBERING

SINGLE OUTPUT

MGDS-35 - 5R+6 / 6QSE

BI OUTPUT

MGDB-35 - 5R+6 / 6QSE

TRIPLE OUTPUT

MGDT-35 - 5R+6 / 6QSE

Option T: Screening -50°C startup temperature
Option S: Screening and serialization
For leaded process add - L after reference. Contact factory for availability

INPUT SPECIFICATIONS

INPUT RANGE

\[
\begin{align*}
|H|: & \quad 9-36 \text{ Vdc transient} \quad 40 \text{ Vdc} / 100 \text{ ms} \\
|J|: & \quad 16-40 \text{ Vdc transient} \quad 50 \text{ Vdc} / 100 \text{ ms}
\end{align*}
\]

OUTPUT SPECIFICATIONS

OUTPUT

\[
\begin{align*}
|B|: & \quad 3.3 \text{ Vdc} \& \quad \pm 12 \text{ Vdc} / 4 \text{ A} \& \quad \pm 1.1 \text{ A} \\
|F|: & \quad 3.3 \text{ Vdc} \& \quad \pm 15 \text{ Vdc} / 4 \text{ A} \& \quad \pm 0.9 \text{ A}
\end{align*}
\]

KEY FEATURES

- Standard 3” x 2” package
- Single, bi or triple outputs
- Soft start
- No load to full load operation
- No optocoupler for high reliability

GENERAL CHARACTERISTICS

- Nominal power up to: 35 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 500 KHz
- Protections : input undervoltage lockout, output short circuit, output overvoltage
- Trim adjustment : 95% to 105%
- External synchronization range : 550 to 600 KHz
- Additional functions : on/off, reference voltage, adjustable undervoltage lockout

*Indicated values are maximum current on each output with total power not exceeding 35W
**Hi-Rel Grade - DC/DC Converters**

**MGDD-60 Series**

**Key Features**
- Ultra wide input 12-160 Vdc
- Flexible isolated dual outputs
- Soft start
- No load to full load operation
- No optocoupler for high reliability

**General Characteristics**
- Nominal power up to: 60 W
- Galvanic isolation input/output: 1 500 Vdc
- Protections: Input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment: 80% to 110%
- External synchronization range: 285 to 310 KHz
- Additional functions: on/off, input current ripple reduction, reference voltage, adjustable undervoltage lockout

**Part numbering**

<table>
<thead>
<tr>
<th>DUAL OUTPUT</th>
<th>MGDD-60 - ■ - ■ / ■</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option</td>
<td>Screening, -55°C start-up temperature</td>
</tr>
<tr>
<td>Option</td>
<td>Screening and serialization</td>
</tr>
</tbody>
</table>

**Input Specifications**
- Ultra wide input: 12-160 Vdc transient 10.5 Vdc/1 sec

**Output Specifications**

<table>
<thead>
<tr>
<th>DUAL ISOLATED OUTPUT*</th>
</tr>
</thead>
<tbody>
<tr>
<td>■: 2 x 5 Vdc / 2 x 5 A</td>
</tr>
<tr>
<td>■: 2 x 12 Vdc / 2 x 2.5 A</td>
</tr>
<tr>
<td>■: 2 x 15 Vdc / 2 x 2 A</td>
</tr>
<tr>
<td>■: 2 x 24 Vdc / 2 x 1.25 A</td>
</tr>
</tbody>
</table>

* Available unbalanced power up to 10% / 90%

**MGDM-100 Series**

**Key Features**
- Standard 3” x 2” package
- Single output
- Soft start
- No load to full load operation
- No optocoupler for high reliability

**General Characteristics**
- Nominal power up to: 100 W
- Galvanic isolation input/output: 1 500 Vdc
- Switching frequency: 260 KHz
- Protections: Input undervoltage lockout, input overvoltage lockout, output current limitation, over temperature
- Trim adjustment: 80% to 110%
- External synchronization range: 270 to 300 KHz
- Additional functions: on/off, sense, adjustable undervoltage lockout

**Part numbering**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>MGDM-100 - ■ - ■ / ■</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option</td>
<td>Screening, -55°C start-up temperature</td>
</tr>
<tr>
<td>Option</td>
<td>Screening and serialization</td>
</tr>
</tbody>
</table>

**Input Specifications**
- Input range: 10.7-100 Vdc

**Output Specifications**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>■: 3.3 Vdc / 20 A</td>
</tr>
<tr>
<td>■: 5 Vdc / 20 A</td>
</tr>
<tr>
<td>■: 12 Vdc / 8.5 A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>■: 15 Vdc / 6.5 A</td>
</tr>
<tr>
<td>■: 26 Vdc / 4 A</td>
</tr>
</tbody>
</table>
INDUSTRIAL GRADE
POWER MODULE
INDUSTRIAL GRADE - FRONT-END MODULES

DC SPIKE PROTECTION 50W

KEY FEATURES

• Spike suppressor for Railway/Industrial
  - EN61000-4-5 level 4
  - EN50155 level 1800V & 8400V
  - RIA 12

GENERAL CHARACTERISTICS

• Power range from 4 W to 50 W
• Galvanic isolation input/output: non isolated
• Protections: input reverse polarity
• Additional functions: on/off

PART NUMBERING

SINGLE OUTPUT  LGDSI-50 - -

INPUT SPECIFICATIONS

INPUT RANGE

<table>
<thead>
<tr>
<th>Range</th>
<th>Transient</th>
<th>Spike</th>
</tr>
</thead>
<tbody>
<tr>
<td>J: 10-36 Vdc</td>
<td>40 Vdc / 1 s &amp; 85 Vdc / 20 ms</td>
<td>1800 Vdc / 50 μs</td>
</tr>
<tr>
<td>Q: 36-154 Vdc</td>
<td>165 Vdc / 1 s &amp; 385 Vdc / 20 ms</td>
<td>1800 Vdc / 50 μs</td>
</tr>
</tbody>
</table>

INPUT SPECIFICATIONS

PACKAGE AND PIN-OUT

Dimensions in inches

Pin dimensions: Ø 0.03”

Metallic case black anodized coating solder plated pin

Pin | Single Output
---|-------------
1   | +Input (V)
2   | On/Off
3   | -Input (G)
4   | Common (Go)
5   | Output (Vo)
KEY FEATURES

- Spike suppressor for Railway/Industrial
  - EN61000-4-5 level 4
  - EN50155 level 1800V & 8400V
  - RIA 12

GENERAL CHARACTERISTICS

- Power range from: 4 W to 75 W
- Galvanic isolation input/output: non isolated
- Protections: input reverse polarity
- Additional functions: on/off

PART NUMBERING

SINGLE OUTPUT | LGDSI-75 - □ - □

INPUT SPECIFICATIONS

INPUT RANGE

Q: 43-154 Vdc  
transient: 165 Vdc / 1 s  
spike: 1800 Vdc / 50 μs

PACKAGE AND PIN-OUT

Dimensions in inches

Pin dimensions: Ø 0.03 "
Metallic case black anodized coating solder plated pin

+1  +2  +3  +4  +5

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+Input (V)</td>
</tr>
<tr>
<td>2</td>
<td>On/Off</td>
</tr>
<tr>
<td>3</td>
<td>-Input (Gn)</td>
</tr>
<tr>
<td>4</td>
<td>Common (Gn)</td>
</tr>
<tr>
<td>5</td>
<td>Output (Vo)</td>
</tr>
</tbody>
</table>
**DC/DC CONVERTERS**

**DC ISOLATED CONVERTERS 4W**

**PART NUMBERING**

| SINGLE OUTPUT | MGDSI-04 | ■ - ■ / ■ |
| BI OUTPUT | MGDBI-04 | ■ - ■ / ■ |
| TRIPLE OUTPUT | MGDTI-04 | ■ - ■ / ■ |

Option **M**: On/Off function
Option **Y**: High isolation 3 000 Vdc

**INPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>STANDARD INPUT</th>
<th>WIDE INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>C : 4.5-5.5 Vdc</td>
<td>H : 9-36 Vdc</td>
</tr>
<tr>
<td>I : 18-36 Vdc</td>
<td>J : 16-40 Vdc</td>
</tr>
<tr>
<td>B : 3.3 Vdc / 1 A</td>
<td>Q : 36-140 Vdc</td>
</tr>
<tr>
<td>C : 5 Vdc / 0.8 A</td>
<td>E : ± 12 Vdc / ± 0.165 A</td>
</tr>
<tr>
<td>E : 12 Vdc / 0.33 A</td>
<td>F : ± 15 Vdc / ± 0.13 A</td>
</tr>
<tr>
<td>F : 15 Vdc / 0.26 A</td>
<td>CF : ± 5 Vdc &amp; ± 15 Vdc / 0.5 A &amp; ± 0.05 A</td>
</tr>
</tbody>
</table>

**OUTPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
<th>BI OUTPUT</th>
<th>TRIPLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>B : 3.3 Vdc / 1 A</td>
<td>C : ± 5 Vdc / ± 0.4 A</td>
<td>CF : 5 Vdc &amp; ± 15 Vdc / 0.5 A &amp; ± 0.05 A</td>
</tr>
<tr>
<td>C : 5 Vdc / 0.8 A</td>
<td>E : ± 12 Vdc / ± 0.165 A</td>
<td></td>
</tr>
<tr>
<td>E : 12 Vdc / 0.33 A</td>
<td>F : ± 15 Vdc / ± 0.13 A</td>
<td></td>
</tr>
<tr>
<td>F : 15 Vdc / 0.26 A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PACKAGE AND PIN-OUT**

Dimensions in inches

1.25”

0.75”

0.3”

Pin dimensions : **0.02”**

Metallic case black anodized sealing solder plated pin

(For 36-140 Vdc and triple output versions : length is 1.4”, width is 0.8” and height is 0.4”)

**KEY FEATURES**

- Low profile 0.3” package
- Single, bi or triple outputs
- Soft start

**GENERAL CHARACTERISTICS**

- Nominal power up to : 4 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 480 KHz
- Protections : output short circuit
- Trim adjustment : no trim
- External synchronization range : no synchro
- Additional functions : on/off on option
KEY FEATURES
- Ultra wide input 12-160 Vdc
- Flexible isolated dual outputs
- Soft start
- No load to full load operation

GENERAL CHARACTERISTICS
- Nominal power up to: 6 W
- Galvanic isolation input/output: 2 250 Vdc
- Switching frequency: 330 KHz
- Protections: Input undervoltage lockout, output current limitation
- Trim adjustment: 80% to 110%
- External synchronization range: no synchro
- Additional functions: on/off, input current ripple reduction

PART NUMBERING
DUAL OUTPUT MGDDI-06 - [ ] - [ ] / [ ]

INPUT SPECIFICATIONS
ULTRA WIDE INPUT
R: 12-160 Vdc

OUTPUT SPECIFICATIONS
DUAL ISOLATED OUTPUT*
- C: 2 X 5 Vdc / 2 x 0.6 A
- E: 2 x 12 Vdc / 2 x 0.25 A
- F: 2 x 15 Vdc / 2 x 0.2 A
- I: 2 x 24 Vdc / 2 x 0.125 A
* Possible unbalanced power up to 10% / 90%

PACKAGE AND PIN-OUT
Dimensions in inches
Pin dimensions: square pin 0.025”
Bottom view
Metallic case black anodized coating gold plated pin
DC/DC CONVERTERS
DC ISOLATED CONVERTERS 10W

PART NUMBERING

| Single Output | MGDS-10 - / - / - |
| Bi Output     | MGDBI-10 - / - / - |
| Triple Output | MGDTI-10 - / - / - |

Option M: On/Off function - Option Y: High isolation 3 000 Vdc

INPUT SPECIFICATIONS

<table>
<thead>
<tr>
<th>Standard Input</th>
<th>Wide Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>C: 4.5-5.5 Vdc</td>
<td>D: 4.7-16 Vdc</td>
</tr>
<tr>
<td>I: 18-36 Vdc</td>
<td>H: 9-36 Vdc</td>
</tr>
</tbody>
</table>

OUTPUT SPECIFICATIONS

<table>
<thead>
<tr>
<th>Single Output</th>
<th>Bi Output</th>
<th>Triple Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>B: 3.3 Vdc / 2 A</td>
<td>C: ± 5 Vdc / ± 1 A</td>
<td>CE: 5 Vdc &amp; ± 12 Vdc / 1 A &amp; ± 0.2 A</td>
</tr>
<tr>
<td>C: 5 Vdc / 2 A</td>
<td>E: ± 12 Vdc / ± 0.4 A</td>
<td>CF: 5 Vdc &amp; ± 15 Vdc / 1 A &amp; ± 0.15 A</td>
</tr>
<tr>
<td>E: 12 Vdc / 0.8 A</td>
<td>F: ± 15 Vdc / ± 0.325 A</td>
<td></td>
</tr>
<tr>
<td>F: 15 Vdc / 0.65 A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PACKAGING AND PIN-OUT

- Single & Bi output models
- Tri output model
- Pin dimensions: Ø0.035"
KEY FEATURES

• Ultra wide input 12-160 Vdc
• Flexible isolated dual outputs
• Soft start
• No load to full load operation

GENERAL CHARACTERISTICS

• Nominal power up to: 20 W
• Galvanic isolation input/output: 2 250 Vdc
• Switching frequency: 270 KHz
• Protections: input undervoltage lockout, output current, output over voltage
• Trim adjustment: 80% to 110%
• External synchronization range: no synchro
• Additional functions: on/off, input current ripple reduction, adjustable undervoltage lockout

PART NUMBERING

DUAL OUTPUT MGDDI-20 - - -

INPUT SPECIFICATIONS

ULTRA WIDE INPUT

R: 12-160 Vdc

OUTPUT SPECIFICATIONS

DUAL ISOLATED OUTPUT*

C: 2 x 5 Vdc / 2 x 2 A
E: 2 x 12 Vdc / 2 x 0.825 A
F: 2 x 15 Vdc / 2 x 0.65 A
I: 2 x 24 Vdc / 2 x 0.42 A

* Possible unbalanced power up to 10% / 90%

PACKAGE AND PIN-OUT

Dimensions in inches

Pin dimensions: square pin 0.025”

Metallic case black anodized coating gold plated pin

<table>
<thead>
<tr>
<th>Pin</th>
<th>Dual Output</th>
<th>Pin</th>
<th>Dual Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>On/Off</td>
<td>9</td>
<td>+ Output 2 (Vo2)</td>
</tr>
<tr>
<td>2</td>
<td>Do not connect</td>
<td>10</td>
<td>+ Output 2 (Go2)</td>
</tr>
<tr>
<td>3</td>
<td>UVLO</td>
<td>11</td>
<td>Do not connect</td>
</tr>
<tr>
<td>4</td>
<td>Do not connect</td>
<td>12</td>
<td>+ Output 1 (Vo1)</td>
</tr>
<tr>
<td>5</td>
<td>Do not connect</td>
<td>13</td>
<td>- Output 1 (Go1)</td>
</tr>
<tr>
<td>6</td>
<td>Input (Gi)</td>
<td>14</td>
<td>Do not connect</td>
</tr>
<tr>
<td>7</td>
<td>VF</td>
<td>15</td>
<td>Vtrim</td>
</tr>
<tr>
<td>8</td>
<td>+ Input (Vi)</td>
<td>16</td>
<td>Do not connect</td>
</tr>
</tbody>
</table>

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DC/DC CONVERTERS

INDUSTRIAL GRADE - FRONT-END MODULES

PART NUMBERING

| SINGLE OUTPUT | MGDSI-35 -  |  |  |
| BI OUTPUT     | MGDBI-35 -  |  |  |
| TRIPLE OUTPUT | MGDTI-35 -  |  |  |

INPUT SPECIFICATIONS

### WIDE INPUT

- H: 9-36 Vdc
- O: 18-75 Vdc
- Q: 36-140 Vdc

OUTPUT SPECIFICATIONS

#### SINGLE OUTPUT

- B: 3.3 Vdc / 7 A
- C: 5 Vdc / 7 A
- E: 12 Vdc / 2.9 A
- F: 15 Vdc / 2.3 A

#### BI OUTPUT

- C: ± 5 Vdc / ± 4 A
- E: ± 12 Vdc / ± 1.7 A
- F: ± 15 Vdc / ± 1.3 A

#### TRIPLE OUTPUT

- BE: 3.3 Vdc & ± 12 Vdc / 4 A & ± 1.1 A *
- BF: 3.3 Vdc & ± 15 Vdc / 4 A & ± 0.9 A *
- CE: 5 Vdc & ± 12 Vdc / 4 A & ± 1.1 A *
- CF: 5 Vdc & ± 15 Vdc / 4 A & ± 0.9 A *

*Indicated values are maximum current on each output with total power not exceeding 35W

PACKAGE AND PIN-OUT

Dimensions in inches

```
<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
<th>BI Output</th>
<th>Triple Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-I/O</td>
<td>-I/O</td>
<td>-I/O</td>
</tr>
<tr>
<td>2</td>
<td>-Input (Gi)</td>
<td>-Input (Gi)</td>
<td>-Input (Gi)</td>
</tr>
<tr>
<td>3</td>
<td>Do not connect</td>
<td>Do not connect</td>
<td>Do not connect</td>
</tr>
<tr>
<td>4</td>
<td>+Input (Vi)</td>
<td>+Input (Vi)</td>
<td>+Input (Vi)</td>
</tr>
<tr>
<td>5</td>
<td>Trim (trim)</td>
<td>Trim (trim)</td>
<td>Trim (trim)</td>
</tr>
<tr>
<td>6</td>
<td>Synchro (Sync)</td>
<td>Synchro (Sync)</td>
<td>Synchro (Sync)</td>
</tr>
<tr>
<td>7</td>
<td>V Ref</td>
<td>V Ref</td>
<td>V Ref</td>
</tr>
<tr>
<td>8</td>
<td>On/Off</td>
<td>On/Off</td>
<td>On/Off</td>
</tr>
<tr>
<td>11</td>
<td>Do not connect</td>
<td>Output - (-Vo)</td>
<td>Output 2- (-Vo2)</td>
</tr>
<tr>
<td>13</td>
<td>Do not connect</td>
<td>Do not connect</td>
<td>Output 2x (-Vo2)</td>
</tr>
<tr>
<td>16</td>
<td>Common (Go)</td>
<td>Common (Go)</td>
<td>Common (Go)</td>
</tr>
<tr>
<td>17</td>
<td>Output (Vo)</td>
<td>Output + (-Vo)</td>
<td>Output 1x (+Vo1)</td>
</tr>
</tbody>
</table>
```

Metallic case black anodized coating solder plated pin

KEY FEATURES

- Standard 3” x 2” package
- Single, bi or triple outputs
- Soft start
- No load to full load operation

GENERAL CHARACTERISTICS

- Nominal power up to : 35 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 500 KHz
- Protections : input undervoltage lockout, output short circuit, output overvoltage
- Trim adjustment : 95% to 105%
- External synchronization range : 550 to 600 KHz
- Additional functions : on/off, reference voltage, adjustable undervoltage lockout
**DC/DC CONVERTERS**

**DC ISOLATED CONVERTERS 60W**

---

### KEY FEATURES

- Wide input 14-55 Vdc, 36-175 Vdc, 12-160 Vdc
- Flexible isolated dual outputs
- Soft start
- No load to full load operation

### GENERAL CHARACTERISTICS

- Nominal power up to: 60 W
- Galvanic isolation input/output: 1 500 Vdc (2 250 Vdc for MGDDI)
- Switching frequency: 270 KHz
- Protections: input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment: 80% to 110%
- External synchronization range: 285 to 310 KHz
- Additional functions: on/off, Input current ripple reduction, adjustable undervoltage lockout

---

### PART NUMBERING

| SINGLE OUTPUT | MGDSI-60 - | - |
| DUAL OUTPUT   | MGDDI-60 - | - |

---

### INPUT SPECIFICATIONS

<table>
<thead>
<tr>
<th>WIDE INPUT</th>
<th>ULTRA WIDE INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>G: 14-55 Vdc</td>
<td>R: 12-160 Vdc</td>
</tr>
</tbody>
</table>

---

### OUTPUT SPECIFICATIONS

#### SINGLE OUTPUT

- B: 3.3 Vdc / 15 A
- C: 5 Vdc / 12 A
- E: 12 Vdc / 5 A
- F: 15 Vdc / 4 A
- 26: 26 Vdc / 2.3 A

#### DUAL ISOLATED OUTPUT*

- C: 2 X 5 Vdc / 2 x 5 A
- E: 2 x 12 Vdc / 2 x 2.5 A
- F: 2 x 15 Vdc / 2 x 2 A
- I: 2 x 24 Vdc / 2 x 1.25 A

* Possible unbalanced power up to 10% / 90%

---

### PACKAGE AND PIN-OUT

#### Dimensions in inches

![Dimensions Diagram](image)

---

<table>
<thead>
<tr>
<th>Pin</th>
<th>Single Output</th>
<th>Pin</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>On/Off</td>
<td>10, 11, 12</td>
<td>Output (Vo)</td>
</tr>
<tr>
<td>2</td>
<td>Syncro (Sync)</td>
<td>13, 14, 15</td>
<td>Common (Go)</td>
</tr>
<tr>
<td>3</td>
<td>UVLO</td>
<td>16</td>
<td>Sense +</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Input (Gi)</td>
<td>17</td>
<td>Trim</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>Input (Vi)</td>
<td>18</td>
<td>Sense -</td>
</tr>
</tbody>
</table>

**Pin dimensions:** 3.00 x 0.035"

---

<table>
<thead>
<tr>
<th>Pin</th>
<th>Dual Output</th>
<th>Pin</th>
<th>Dual Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UVLO</td>
<td>10</td>
<td>Do not connect</td>
</tr>
<tr>
<td>2</td>
<td>-Input (Gi)</td>
<td>11</td>
<td>+ Output 1 (Vo1)</td>
</tr>
<tr>
<td>3</td>
<td>VIF</td>
<td>12</td>
<td>Do not connect</td>
</tr>
<tr>
<td>4</td>
<td>+Input (Vi)</td>
<td>13</td>
<td>+ Output 1 (Go1)</td>
</tr>
<tr>
<td>5</td>
<td>Do not connect</td>
<td>14</td>
<td>Do not connect</td>
</tr>
<tr>
<td>6</td>
<td>Do not connect</td>
<td>15</td>
<td>+ Output 2 (Vo2)</td>
</tr>
<tr>
<td>7</td>
<td>Do not connect</td>
<td>16</td>
<td>Do not connect</td>
</tr>
<tr>
<td>8</td>
<td>On/Off/OTP</td>
<td>17</td>
<td>- Output 2 (Go2)</td>
</tr>
<tr>
<td>9</td>
<td>Vtrim</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Metallic case black anodized coating gold plated pins**
**DC/DC CONVERTERS**

**DC ISOLATED CONVERTERS 75W**

**PART NUMBERING**

- **SINGLE OUTPUT**
  - MGDSI-75 - [ ] - [ ]

  Leaded process for H and O series add - L after reference

**INPUT SPECIFICATIONS**

- **WIDE INPUT**
  - **H**: 9-36 Vdc
  - **O**: 18-75 Vdc

**OUTPUT SPECIFICATIONS**

- **SINGLE OUTPUT**
  - **B**: 3.3 Vdc / 15 A
  - **C**: 5 Vdc / 15 A
  - **E**: 12 Vdc / 6.25 A

- **SINGLE OUTPUT**
  - **F**: 15 Vdc / 5 A
  - **I**: 24 Vdc / 3.125 A*
  - **J**: 28 Vdc / 2.7 A*

**PACKAGE AND PIN-OUT**

- **Dimensions in inches**
  - H1.4" x W4.5" x D2.3"
  - **Pin dimensions:**
    - Pins: 1, 2, 3, 4, 7, 8, 9: 0.04"
    - Pins: 5, 6: 0.05"

  **Metallic case aligned coating solder plated pin**

**KEY FEATURES**

- Standard quarter brick package
- Single output
- Soft start
- No load to full load operation

**GENERAL CHARACTERISTICS**

- Nominal power up to: 75 W
- Galvanic isolation input/output: 1 500 Vdc
- Switching frequency: 420 KHz
- Protections: input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment: 80% to 110%
- External synchronization range: 420 to 480 KHz
- Additional functions: on/off, sense

**DC/DC CONVERTERS**

**DC ISOLATED CONVERTERS 75W**

**MGDI-75 Series**

**PART NUMBERING**

- **SINGLE OUTPUT**
  - MGDSI-75 - [ ] - [ ]

  Leaded process for H and O series add - L after reference

**INPUT SPECIFICATIONS**

- **WIDE INPUT**
  - **H**: 9-36 Vdc
  - **O**: 18-75 Vdc

**OUTPUT SPECIFICATIONS**

- **SINGLE OUTPUT**
  - **B**: 3.3 Vdc / 15 A
  - **C**: 5 Vdc / 15 A
  - **E**: 12 Vdc / 6.25 A

- **SINGLE OUTPUT**
  - **F**: 15 Vdc / 5 A
  - **I**: 24 Vdc / 3.125 A*
  - **J**: 28 Vdc / 2.7 A*

**PACKAGE AND PIN-OUT**

- **Dimensions in inches**
  - H1.4" x W4.5" x D2.3"
  - **Pin dimensions:**
    - Pins: 1, 2, 3, 4, 7, 8, 9: 0.04"
    - Pins: 5, 6: 0.05"

  **Metallic case aligned coating solder plated pin**

**KEY FEATURES**

- Standard quarter brick package
- Single output
- Soft start
- No load to full load operation

**GENERAL CHARACTERISTICS**

- Nominal power up to: 75 W
- Galvanic isolation input/output: 1 500 Vdc
- Switching frequency: 420 KHz
- Protections: input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment: 80% to 110%
- External synchronization range: 420 to 480 KHz
- Additional functions: on/off, sense

**PART NUMBERING**

- **SINGLE OUTPUT**
  - MGDSI-75 - [ ] - [ ]

  Leaded process for H and O series add - L after reference

**INPUT SPECIFICATIONS**

- **WIDE INPUT**
  - **H**: 9-36 Vdc
  - **O**: 18-75 Vdc

**OUTPUT SPECIFICATIONS**

- **SINGLE OUTPUT**
  - **B**: 3.3 Vdc / 15 A
  - **C**: 5 Vdc / 15 A
  - **E**: 12 Vdc / 6.25 A

- **SINGLE OUTPUT**
  - **F**: 15 Vdc / 5 A
  - **I**: 24 Vdc / 3.125 A*
  - **J**: 28 Vdc / 2.7 A*

**PACKAGE AND PIN-OUT**

- **Dimensions in inches**
  - H1.4" x W4.5" x D2.3"
  - **Pin dimensions:**
    - Pins: 1, 2, 3, 4, 7, 8, 9: 0.04"
    - Pins: 5, 6: 0.05"

  **Metallic case aligned coating solder plated pin**

**KEY FEATURES**

- Standard quarter brick package
- Single output
- Soft start
- No load to full load operation

**GENERAL CHARACTERISTICS**

- Nominal power up to: 75 W
- Galvanic isolation input/output: 1 500 Vdc
- Switching frequency: 420 KHz
- Protections: input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment: 80% to 110%
- External synchronization range: 420 to 480 KHz
- Additional functions: on/off, sense
DC/DC CONVERTERS
DC ISOLATED CONVERTERS 100W

PART NUMBERING

| SINGLE OUTPUT | MGDSI-100 - [ ] - [ ] |

INPUT SPECIFICATIONS

<table>
<thead>
<tr>
<th align="left">WIDE INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td align="left">:---</td>
</tr>
<tr>
<td align="left">[ ]</td>
</tr>
<tr>
<td align="left">[ ]</td>
</tr>
</tbody>
</table>

OUTPUT SPECIFICATIONS

<table>
<thead>
<tr>
<th align="left">SINGLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td align="left">:---</td>
</tr>
<tr>
<td align="left">B</td>
</tr>
<tr>
<td align="left">C</td>
</tr>
<tr>
<td align="left">E</td>
</tr>
<tr>
<td align="left">F</td>
</tr>
<tr>
<td align="left">26</td>
</tr>
</tbody>
</table>

PACKAGING AND PIN-OUT

Dimensions in inches

<table>
<thead>
<tr>
<th align="left">Pin</th>
<th align="left">Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td align="left">1</td>
<td align="left">On/Off</td>
</tr>
<tr>
<td align="left">2</td>
<td align="left">Synchronous (Sync)</td>
</tr>
<tr>
<td align="left">3</td>
<td align="left">UVLO</td>
</tr>
<tr>
<td align="left">4, 5, 6</td>
<td align="left">Input (Gi)</td>
</tr>
<tr>
<td align="left">7, 8, 9</td>
<td align="left">+Input (Vi)</td>
</tr>
<tr>
<td align="left">10, 11, 12</td>
<td align="left">Output (Vo)</td>
</tr>
<tr>
<td align="left">13, 14, 15</td>
<td align="left">Common (Go)</td>
</tr>
<tr>
<td align="left">16</td>
<td align="left">Sense +</td>
</tr>
<tr>
<td align="left">17</td>
<td align="left">Trim</td>
</tr>
<tr>
<td align="left">18</td>
<td align="left">Sense -</td>
</tr>
</tbody>
</table>

Pin dimensions: square pin Ø 0.035"  
Metallic case black anodized coating solder-plated pin.
MGDI-124 Series

DC/DC CONVERTERS
DC ISOLATED CONVERTERS 120W

KEY FEATURES

• Standard quarter brick package
• Single output
• Soft start
• No load to full load operation

GENERAL CHARACTERISTICS

• Nominal power up to : 120 W
• Galvanic isolation input/output : 1 500 Vdc
• Switching frequency : 330 KHz
• Protections : input undervoltage lockout, output current limitation, output overvoltage, over temperature
• Trim adjustment : 90% to 110%
• External synchronization range : no synchro
• Additional functions : on/off, sense

PART NUMBERING

SINGLE OUTPUT
MGDSI-124 - □ - □

INPUT SPECIFICATIONS

WIDE INPUT
□ : 9-36 Vdc

OUTPUT SPECIFICATIONS

SINGLE OUTPUT
□ : 5 Vdc / 24 A
□ : 12 Vdc / 10 A

SINGLE OUTPUT
□ : 15 Vdc / 8 A
□ : 24 Vdc / 5 A

PACKAGE AND PIN-OUT

Dimensions in inches

Pin Single Output
1 -Input (Gi)
2 On/Off
3 +Input (Vi)
4 +Output (Vo)
5 Sense + (S+)
6 Trim (Trim)
7 Sense - (S-)
8 -Output (Go)
**DC/DC CONVERTERS**

**DC ISOLATED CONVERTERS 160W**

**PART NUMBERING**

| SINGLE OUTPUT | MGDSI-164 - ■ - ■ |

**INPUT SPECIFICATIONS**

**WIDE INPUT**

- **H**: 9-36 Vdc

**OUTPUT SPECIFICATIONS**

**SINGLE OUTPUT**

- **C**: 5 Vdc / 32 A
- **E**: 12 Vdc / 13.3 A
- **F**: 15 Vdc / 10.6 A
- **I**: 24 Vdc / 6.6 A

**PACKAGE AND PIN-OUT**

Dimensions in inches

- **Pin dimensions**: Pins 1, 2, 3, 5, 6, 7: 0.04"
- Pins 4, 8: 0.06"

- **Metallic case aluminized coating solder plated pin**

**KEY FEATURES**

- Standard quarter brick package
- Single output
- Soft start
- No load to full load operation

**GENERAL CHARACTERISTICS**

- Nominal power up to: 160 W
- Galvanic isolation input/output: 1500 Vdc
- Switching frequency: 330 KHz
- Protections: Input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment: 90% to 110%
- External synchronization range: no synchro
- Additional functions: on/off, sense

**PART NUMBERING**

**INPUT SPECIFICATIONS**

**WIDE INPUT**

- **H**: 9-36 Vdc

**OUTPUT SPECIFICATIONS**

**SINGLE OUTPUT**

- **C**: 5 Vdc / 32 A
- **E**: 12 Vdc / 13.3 A
- **F**: 15 Vdc / 10.6 A
- **I**: 24 Vdc / 6.6 A

**PACKAGE AND PIN-OUT**

Dimensions in inches

- **Pin dimensions**: Pins 1, 2, 3, 5, 6, 7: 0.04"
- Pins 4, 8: 0.06"

- **Metallic case aluminized coating solder plated pin**

**KEY FEATURES**

- Standard quarter brick package
- Single output
- Soft start
- No load to full load operation

**GENERAL CHARACTERISTICS**

- Nominal power up to: 160 W
- Galvanic isolation input/output: 1500 Vdc
- Switching frequency: 330 KHz
- Protections: Input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment: 90% to 110%
- External synchronization range: no synchro
- Additional functions: on/off, sense
MGDI-204 Series

DC/DC CONVERTERS
DC ISOLATED CONVERTERS 200W

PART NUMBERING

SINGLE OUTPUT MGDSI-204 - ■ - ■

KEY FEATURES

- Standard quarter brick package
- Single output
- Soft start
- No load to full load operation

GENERAL CHARACTERISTICS

- Nominal power up to: 200 W
- Galvanic isolation input/output: 1500 Vdc
- Switching frequency: 330 KHz
- Protections: input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment: 90% to 110%
- External synchronization range: no synchro
- Additional functions: on/off, sense

INPUT SPECIFICATIONS

WIDE INPUT

H: 9-36 Vdc

OUTPUT SPECIFICATIONS

SINGLE OUTPUT

C: 5 Vdc / 40 A
E: 12 Vdc / 16.6 A

PACKAGE AND PIN-OUT

Dimensions in inches

INPUT SPECIFICATIONS

WIDE INPUT

H: 9-36 Vdc

OUTPUT SPECIFICATIONS

SINGLE OUTPUT

C: 5 Vdc / 40 A
E: 12 Vdc / 16.6 A

PACKAGE AND PIN-OUT

Dimensions in inches

Pin dimensions:
Pins: 1, 2, 3, 5, 6, 7: Ø 0.04"
Pins: 4, 8: Ø 0.06"

Metallic case aluminized coating solder plated pin

Unsealed metal lead
Use this side for heat sinking

Pin numbering:

1. Input (Gi)
2. On/Off
3. Input (Vi)
4. Output (Vo)
5. Sense + (S+)
6. Trim (trim)
7. Sense - (S-)
8. Output (Go)
DC/DC CONVERTERS
DC ISOLATED CONVERTERS 250W

**Industri**

**Grade**

**MGDI-254 Series**

**INDUSTRIAL GRADE - DC/DC CONVERTERS**

**KEY FEATURES**

- Standard quarter brick package
- Single output
- Soft start
- No load to full load operation

**GENERAL CHARACTERISTICS**

- Nominal power up to : 250 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 330 KHz
- Protections : input undervoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment : 90% to 110%
- External synchronization range : no synchro
- Additional functions : on/off, sense

**PART NUMBERING**

| SINGLE OUTPUT | MGDSI-254 - | |

**INPUT SPECIFICATIONS**

**INPUT RANGE**

- H : 9-36 Vdc

**OUTPUT SPECIFICATIONS**

**SINGLE OUTPUT**

- E : 12 Vdc / 20.8 A
- F : 15 Vdc / 16.7 A

**PACKAGE AND PIN-OUT**

**Dimensions in inches**

- 1.45"
- 0.5"
- 2.3"

**Pin dimensions**

- PIns : 1, 2, 3, 5, 6, 7 : Ø 0.04"
- Pins : 4, 8 : Ø 0.06"

**Metallic case plated coating solder plated pin**

**Pin** | **Single Output**
--- | ---
1 | +Input (Gi)
2 | On/Off
3 | +Input (Vi)
4 | +Output (Vo)
5 | Sense + (S+)
6 | Trim (Trim)
7 | Sense - (S–)
8 | -Output (Go)
### DC/DC Converters

#### DC ISOolated Converters 18W

<table>
<thead>
<tr>
<th>Part Numbering</th>
<th>Single Output</th>
<th>MGDI-18</th>
<th>-</th>
<th>/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option</td>
<td>On/Off function</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Input Specifications

<table>
<thead>
<tr>
<th>Input</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide Input</td>
<td></td>
</tr>
<tr>
<td>4.7-16 Vdc</td>
<td></td>
</tr>
<tr>
<td>9-36 Vdc</td>
<td></td>
</tr>
<tr>
<td>16-40 Vdc</td>
<td></td>
</tr>
<tr>
<td>36-140 Vdc</td>
<td></td>
</tr>
</tbody>
</table>

#### Output Specifications

<table>
<thead>
<tr>
<th>Output</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide Input</td>
<td></td>
</tr>
<tr>
<td>±3.3 Vdc / 1 A</td>
<td></td>
</tr>
<tr>
<td>±5 Vdc / 1 A</td>
<td></td>
</tr>
<tr>
<td>±12 Vdc / 1.5 A</td>
<td></td>
</tr>
<tr>
<td>±15 Vdc / 1.2 A</td>
<td></td>
</tr>
</tbody>
</table>

#### Key Features

- Small surface 1" x 1.5" package
- Single output
- Soft start

#### General Characteristics

- Nominal power up to: 18 W
- Galvanic isolation input/output: 1500 Vdc
- Protocols: output short circuit
- Trim adjustment: no trim
- External synchronization range: no synchro
- Additional functions: on/off on option

---

#### DC ISOlated Converters 20W

<table>
<thead>
<tr>
<th>Part Numbering</th>
<th>Single Output</th>
<th>MGDI-20</th>
<th>-</th>
<th>/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option</td>
<td>On/Off function</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

#### Input Specifications

<table>
<thead>
<tr>
<th>Input</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Input</td>
<td></td>
</tr>
<tr>
<td>4.5-5.5 Vdc</td>
<td></td>
</tr>
<tr>
<td>18-36 Vdc</td>
<td></td>
</tr>
<tr>
<td>Wide Input</td>
<td></td>
</tr>
<tr>
<td>4.7-16 Vdc</td>
<td></td>
</tr>
<tr>
<td>9-36 Vdc</td>
<td></td>
</tr>
<tr>
<td>16-40 Vdc</td>
<td></td>
</tr>
<tr>
<td>36-140 Vdc</td>
<td></td>
</tr>
</tbody>
</table>

#### Output Specifications

<table>
<thead>
<tr>
<th>Output</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide Input</td>
<td></td>
</tr>
<tr>
<td>±3.3 Vdc / 1 A</td>
<td></td>
</tr>
<tr>
<td>±5 Vdc / 1 A</td>
<td></td>
</tr>
<tr>
<td>±12 Vdc / 1.5 A</td>
<td></td>
</tr>
<tr>
<td>±15 Vdc / 1.2 A</td>
<td></td>
</tr>
</tbody>
</table>

#### Key Features

- Standard 2" x 2" package
- Single, bi or triple outputs
- Soft start

#### General Characteristics

- Nominal power up to: 20 W
- Galvanic isolation input/output: 1500 Vdc
- Switching frequency: 480 KHz
- Protocols: output short circuit
- Trim adjustment: no trim
- External synchronization range: no synchro
- Additional functions: on/off on option

---

#### DC ISOlated Converters 25W

<table>
<thead>
<tr>
<th>Part Numbering</th>
<th>Single Output</th>
<th>MGDI-25</th>
<th>-</th>
<th>/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option</td>
<td>On/Off function</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

#### Input Specifications

<table>
<thead>
<tr>
<th>Input</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide Input</td>
<td></td>
</tr>
<tr>
<td>9-36 Vdc</td>
<td></td>
</tr>
<tr>
<td>18-75 Vdc</td>
<td></td>
</tr>
</tbody>
</table>

#### Output Specifications

<table>
<thead>
<tr>
<th>Output</th>
<th>Single Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide Input</td>
<td></td>
</tr>
<tr>
<td>±3.3 Vdc / 1 A</td>
<td></td>
</tr>
<tr>
<td>±5 Vdc / 1 A</td>
<td></td>
</tr>
<tr>
<td>±12 Vdc / 1.5 A</td>
<td></td>
</tr>
<tr>
<td>±15 Vdc / 1.2 A</td>
<td></td>
</tr>
</tbody>
</table>

#### Key Features

- Standard 2" x 2" package
- Single, bi or triple outputs
- Soft start

#### General Characteristics

- Nominal power up to: 25 W
- Galvanic isolation input/output: 1500 Vdc
- Switching frequency: 250 KHz
- Protocols: output short circuit
- Trim adjustment: no trim
- External synchronization range: no synchro
- Additional functions: on/off on option

---
**DC/DC CONVERTERS**

**MGDI-26 Series**

**DC ISOLATED CONVERTERS 26W**

**PART NUMBERING**

| SINGLE OUTPUT | MGDSI-26 |

**KEY FEATURES**

- Standard 2” x 2” package
- Single output
- Soft start
- No load to full load operation

**GENERAL CHARACTERISTICS**

- Nominal power up to : 25 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 1 MHz
- Protections : input undervoltage lockout, output short circuit
- Trim adjustment : 80% to 110%
- External synchronization range : 1.05 to 1.15 MHz
- Additional functions : on/off, sense parallelization

**INPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>WIDE INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 : 9-36 Vdc</td>
</tr>
<tr>
<td>2 : 16-40 Vdc</td>
</tr>
</tbody>
</table>

**OUTPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>B : 3.3 Vdc / 6 A</td>
</tr>
<tr>
<td>C : 5 Vdc / 5 A</td>
</tr>
<tr>
<td>E : 12 Vdc / 2 A</td>
</tr>
<tr>
<td>F : 15 Vdc / 1.65 A</td>
</tr>
</tbody>
</table>

---

**DC/DC CONVERTERS**

**CGDI-30 Series**

**DC ISOLATED CONVERTERS 30W**

**PART NUMBERING**

<table>
<thead>
<tr>
<th>SINGLE LINE OUTPUT</th>
<th>CGDI-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL LINE OUTPUT</td>
<td>CGDI-30</td>
</tr>
<tr>
<td>TRIPLE LINE OUTPUT</td>
<td>CGDI-30</td>
</tr>
</tbody>
</table>

**KEY FEATURES**

- Low profile 0.33” package
- Highly configurable DC/DC converter
- Up to 6 outputs and 3 independent line regulations
- Soft start

**GENERAL CHARACTERISTICS**

- Nominal power up to : 30 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 480 KHz
- Protections : output short circuit, output overvoltage, over temperature
- Trim adjustment : 95% to 105%
- External synchronization range : no synchro
- Additional functions : on/off, sense

**INPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>STANDARD INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>I : 18-36 Vdc</td>
</tr>
<tr>
<td>J : 16-40 Vdc</td>
</tr>
</tbody>
</table>

**OUTPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 : 3.3 Vdc</td>
</tr>
<tr>
<td>5 : 5 Vdc</td>
</tr>
<tr>
<td>12 : 12 Vdc</td>
</tr>
<tr>
<td>15 : 15 Vdc</td>
</tr>
</tbody>
</table>

---

**DC/DC CONVERTERS**

**MGDI-150 Series**

**DC ISOLATED CONVERTERS 150W**

**PART NUMBERING**

| SINGLE OUTPUT | MGDSI-150 |

**KEY FEATURES**

- Standard half brick package
- Single output
- Soft start
- No load to full load operation

**GENERAL CHARACTERISTICS**

- Nominal power up to : 150 W
- Galvanic isolation input/output : 1 500 Vdc
- Switching frequency : 420 KHz
- Protections : input undervoltage lockout, input overvoltage lockout, output current limitation, output overvoltage, over temperature
- Trim adjustment : 10% to 110%
- External synchronization range : 420 to 480 KHz (220 KHz to 235 KHz for T input)
- Additional functions : on/off, sense, parallelization

**INPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>WIDE INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 : 9-36 Vdc</td>
</tr>
<tr>
<td>2 : 18-75 Vdc</td>
</tr>
</tbody>
</table>

**OUTPUT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SINGLE OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>B : 3.3 Vdc / 30 A</td>
</tr>
<tr>
<td>C : 5 Vcc / 30 A</td>
</tr>
<tr>
<td>E : 12 Vdc / 12.5 A</td>
</tr>
<tr>
<td>F : 15 Vdc / 10 A</td>
</tr>
<tr>
<td>I : 24 Vdc / 6.25 A</td>
</tr>
<tr>
<td>J : 28 Vdc / 5.3 A</td>
</tr>
</tbody>
</table>
### DC/DC SOLUTIONS

#### DC/DC Converters Selection Chart

<table>
<thead>
<tr>
<th>Grades</th>
<th>Single Output</th>
<th>Bi Output</th>
<th>Dual Output</th>
<th>Triple Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hi-Rel (M)</td>
<td>MGDS - B - C / D - E</td>
<td>MGDB - B - C / D - E</td>
<td>MGDD - B - C / D - E</td>
<td>MGDT - B - C / D - E</td>
</tr>
<tr>
<td>Industrial (I)</td>
<td>MGDSI - B - C / D - E</td>
<td>MGDBI - B - C / D - E</td>
<td>MGDDI - B - C / D - E</td>
<td>MGDTI - B - C / D - E</td>
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#### Power references

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>F</th>
<th>I</th>
<th>26</th>
<th>J</th>
<th>BE</th>
<th>BF</th>
<th>CE</th>
<th>CF</th>
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<tbody>
<tr>
<td>04</td>
<td>4 W</td>
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<td></td>
<td>50</td>
<td>60 W</td>
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<tr>
<td>06</td>
<td>6 W</td>
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<td>21</td>
<td>21 W</td>
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<tr>
<td>30</td>
<td>30 W</td>
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<tr>
<td>40</td>
<td>40 W</td>
<td></td>
<td>250</td>
<td>250</td>
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</tr>
</tbody>
</table>

#### Input Voltage range reference

- Standard Input
  - C: 4.5-5.5 Vdc
  - D: 18-36 Vdc
- Wide Input
  - F: 4.7-16 Vdc
  - H: 9-36 / 9-45 Vdc
- Ultra Wide Input
  - E: 4.5-33 Vdc
  - I: 10-100 Vdc
  - L: 9-60 Vdc
  - R: 12-160 Vdc
- S: 155-480 Vdc

#### Output references

- A: 2.5 Vdc
- B: 3.3 Vdc
- C: 5 or +/- 5 Vdc
- E: 12 or +/- 12 Vdc
- F: 15 or +/- 15 Vdc
- I: 24 or +/- 24 Vdc
- J: 28 Vdc
- BE: 3.3 and +/- 12 Vdc
- BF: 3.3 and +/- 15 Vdc
- CE: 5 and +/- 15 Vdc
- CF: 5 and +/- 15 Vdc
- OF: 5 and +/- 15 Vdc

#### Options

- Option T: On/Off function
- Option H: High isolation 3000 Vdc
- Option E: -55°C start-up temperature
- Option S: screening and serialization

#### Process

- Leaded process
- RoHS process

### DC/DC Front-End Module Section Chart

#### Type of module

<table>
<thead>
<tr>
<th>Type of module</th>
<th>Single Output</th>
<th>Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMI input filter module</td>
<td>FGDS - A</td>
<td>2 A input current</td>
</tr>
<tr>
<td></td>
<td>or 50V</td>
<td>12 A input current</td>
</tr>
<tr>
<td></td>
<td>or 100V</td>
<td>20 A input current</td>
</tr>
<tr>
<td>Transient/drop-out protection module 50 W</td>
<td>PGDS - 50 - K</td>
<td>10-80 Vdc transient/drop-out input voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6-100 Vdc transient/drop-out input voltage</td>
</tr>
<tr>
<td>Transient protection module 50 W / 300 W</td>
<td>LGDS - 50 - K</td>
<td>10-60 Vdc transient input voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36-165 Vdc transient input voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9-100 Vdc transient input voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9-202 Vdc transient input voltage</td>
</tr>
<tr>
<td>Hold-up module 50 W / 300 W</td>
<td>HUGD -</td>
<td>50 W power</td>
</tr>
<tr>
<td></td>
<td></td>
<td>300 W power</td>
</tr>
</tbody>
</table>

### AC/DC SOLUTIONS

#### Type of module

<table>
<thead>
<tr>
<th>Type of module</th>
<th>Single Output</th>
<th>Bi Output</th>
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</thead>
<tbody>
<tr>
<td>Isolated PFC Modules series</td>
<td>HGMB - B - C / D - E / F - G</td>
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</tr>
<tr>
<td>Non Isolated PFC Modules series</td>
<td>HGMS - B - C / D - E / F - G</td>
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</table>

#### Power references

<table>
<thead>
<tr>
<th></th>
<th>35</th>
<th>50</th>
<th>150</th>
<th>350</th>
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</thead>
<tbody>
<tr>
<td>W</td>
<td>95-140 Vac / frequency 320-800 Hz</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>X</td>
<td>95-140 Vac / frequency 47 - 440 Hz</td>
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<td></td>
</tr>
<tr>
<td>Y</td>
<td>85-265 Vac / frequency 50 - 60 Hz</td>
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<td></td>
</tr>
<tr>
<td>Output references 17: 17 Vdc 375 Vdc</td>
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</tbody>
</table>

#### Options

- Option T: -55°C start-up temperature
- Option S: screening and serialization

#### Process

- Leaded process
- RoHS process
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REDEFINING THE SOURCES OF POWER
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