



Size: 2in x 1in x 0.47in (50.8mm x 25.4mm x 12mm)

FEATURES

- Bidirectional DC/DC Converter
- High Efficiency
- Constant Voltage and Constant Current Mode
- Continuous Short Circuit Protection
- 3KVDC Isolation
- RoHS Compliant
- EN62368-1 Safety Approval

APPLICATIONS

- Process Control
- Electric Power Instrumentation
- Super Cap. Application
- Energy Storage Systems
- Electric Vehicles
- Battery Management Systems

DESCRIPTION

The DCCE24S2428-1000 model of bidirectional DC/DC converters offers 28 watts of output power in a very compact through hole package. This is a single output model with constant voltage and constant current mode and an input voltage of 15-36VDC. It features high efficiency, 3KVDC isolation, and short circuit protection. The DCCE24S2428-1000 model is also RoHS compliant. Please note that this is a preliminary publication. Contact factory for ordering information.

MODEL SELECTION TABLE

| Model Number | Direction | Input Voltage Range | CV Output Voltage | CC Output Current | Ripple & Noise | Efficiency | Output Power |
|------------------|-----------|---------------------|-------------------|-------------------|----------------|------------|--------------|
| DCCE24S2428-1000 | Forward | 28VDC (15-36VDC) | 24VDC | 1000mA | 200mVp-p | 86% | 28W |
| | Reverse | 24VDC (15-36VDC) | 28VDC | 1000mA | | | |

SPECIFICATIONS

All specifications are based on 25°C after warm-up time, Nominal Input Voltage, and Full Load unless otherwise noted.
 We reserve the right to change specifications based on technological advances.

| SPECIFICATION | TEST CONDITIONS | Min | Typ | Max | Unit |
|--|--|---------|-----|------|-------|
| INPUT SPECIFICATIONS | | | | | |
| Input Voltage Range | Forward Nominal VIN=28VDC Reverse Nominal VIN=24VDC | 15 | | 36 | VDC |
| Start-Up Voltage | Forward/Reverse | 9 | | | VDC |
| No Load Input Voltage | Forward | | 50 | | mA |
| | Reverse | | 70 | | |
| Input Surge Voltage | 0.1s Max. | | | 50 | VDC |
| Disable Static Current | EN pin to open | 2 | | 5 | mA |
| Input Filter | | Pi Type | | | |
| Under Voltage Lockout | Forward/Reverse | | 8 | | VDC |
| OUTPUT SPECIFICATIONS | | | | | |
| Output Voltage Range | Forward | 3 | | 22.8 | VDC |
| | Reverse | 3 | | 26.6 | |
| Voltage Accuracy (at CV mode) | Forward Io=900mA | | | ±5 | % |
| | Reverse Io=900mA | | | | |
| Current Accuracy (at CC mode) | Forward Vo=22.8VDC | | | ±10 | % |
| | Reverse Vo=26.6VDC | | | | |
| Voltage Load Regulation (at CV mode) | Forward Io=0-900mA | | | ±3 | % |
| | Reverse Io=0-900mA | | | | |
| Current Load Regulation (at CC mode) | Forward Vo=3-22.8VDC | | | ±5 | % |
| | Reverse Vo=3-26.6VDC | | | | |
| Voltage Line Regulation (LL-HL at CV mode) | Forward Io=900mA | | | ±2 | % |
| | Reverse Io=900mA | | | | |
| Current Line Regulation (LL-HL at CC mode) | Forward Vo=22.8VDC | | | ±2 | % |
| | Reverse Vo=226.6VDC | | | | |
| Output Current Range (at CV mode) | Forward | 0 | | 900 | mA |
| | Reverse | 0 | | 900 | |
| Minimum Load | | | | 0 | % |
| Operating Frequency | 100% Load at all input range | | 400 | | KHz |
| Ripple & Noise ⁽¹⁾ | | | | 200 | mVp-p |
| Transient Response Recovery Time | | | | | |
| Start-Up Time | Nominal Vin | | 100 | 150 | mS |
| Temperature Coefficient | | | | 0.05 | %/°C |

SPECIFICATIONS

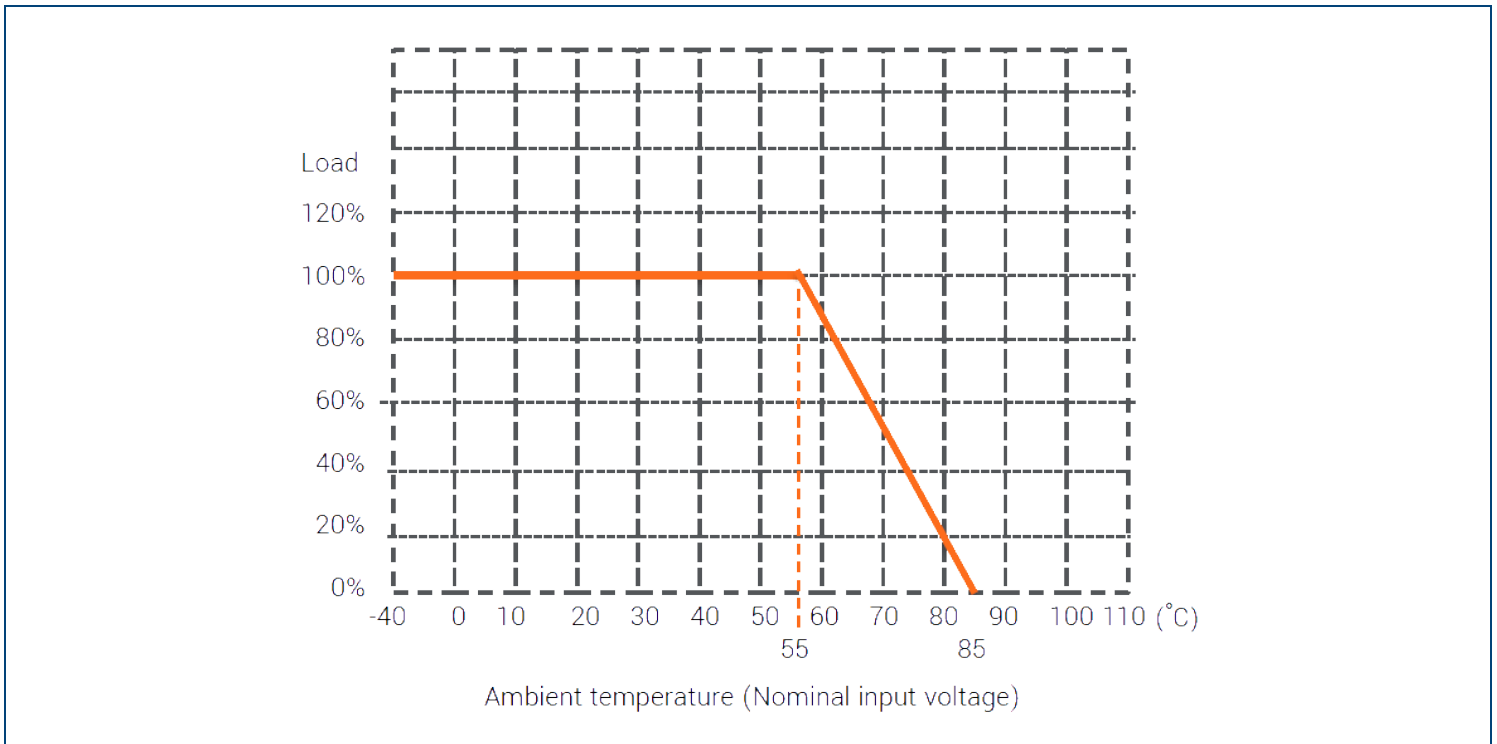
All specifications are based on 25°C after warm-up time, Nominal Input Voltage, and Full Load unless otherwise noted.
We reserve the right to change specifications based on technological advances.

| SPECIFICATION | TEST CONDITIONS | Min | Typ | Max | Unit |
|-------------------------------------|--|--|-----|-----|-------|
| PROTECTION | | | | | |
| Short Circuit Protection | | Continuous, Automatic Recovery | | | |
| ENVIRONMENTAL SPECIFICATIONS | | | | | |
| Operating Temperature | Natural Convection with Derating | -40 | | 85 | °C |
| Storage Temperature | | -45 | | 105 | °C |
| Max. Case Temperature | 100% Load at Nominal Vin | | | 105 | °C |
| Relative Humidity | | 5 | | 95 | %RH |
| Vibration | | MIL-STD-202G | | | |
| MTBF | | TBD | | | Hours |
| GENERAL SPECIFICATIONS | | | | | |
| Efficiency | Tested by nominal input and max. full load @25°C | See Table | | | |
| Isolation Voltage | 1 minute, input to output | 3 | | | KVDC |
| Isolation Resistance | 500VDC | 1000 | | | MΩ |
| Isolation Capacitance | | | 500 | | pF |
| PHYSICAL SPECIFICATIONS | | | | | |
| Weight | | 0.88oz (25g) | | | |
| Dimensions (L x W x H) | | 2in x 1in x 0.47in (50.8mm x 25.4mm x 12mm) | | | |
| Case Material | | Plastic Case | | | |
| Potting Material | | Epoxy | | | |
| Cooling Method | | Free Air Convection | | | |
| SAFETY CHARACTERISTICS | | | | | |
| Safety Approvals | | EN62368-1 | | | |

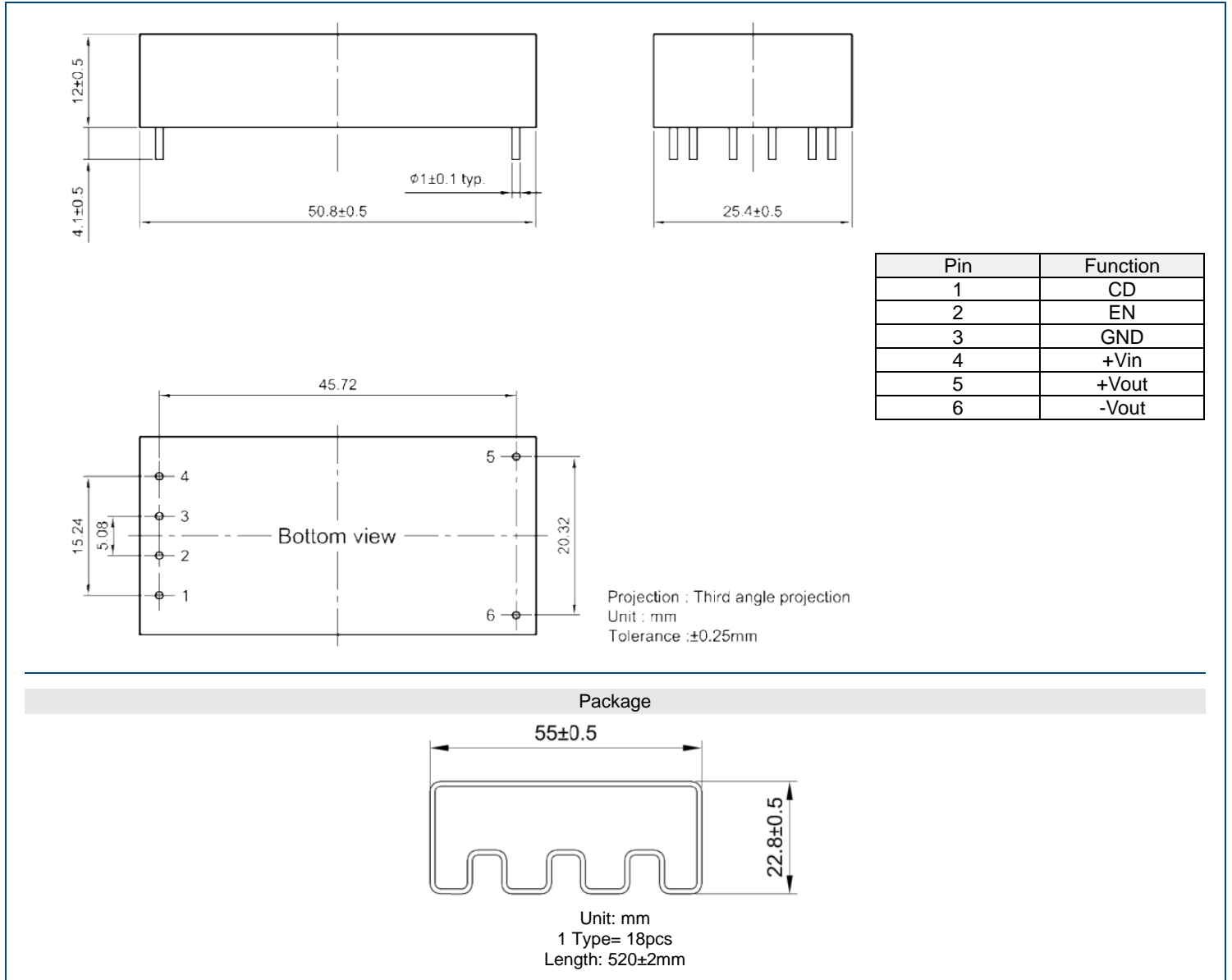
NOTES

- 20MHz BW at vin range CV-mode, 0-90% load 9 (contact MLCC 1µF).
- *Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES



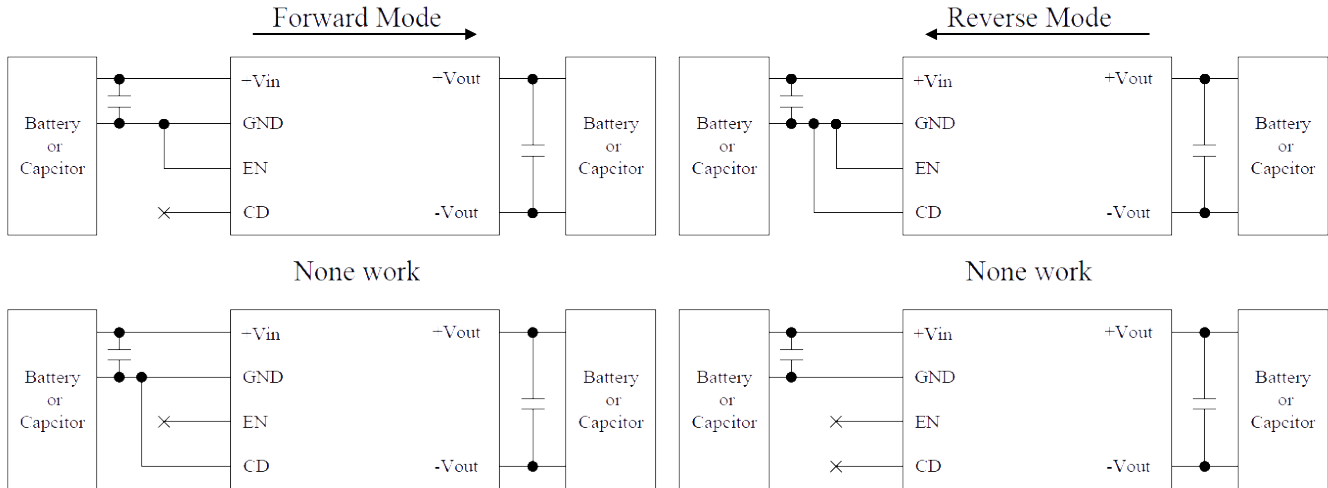
MECHANICAL DRAWINGS



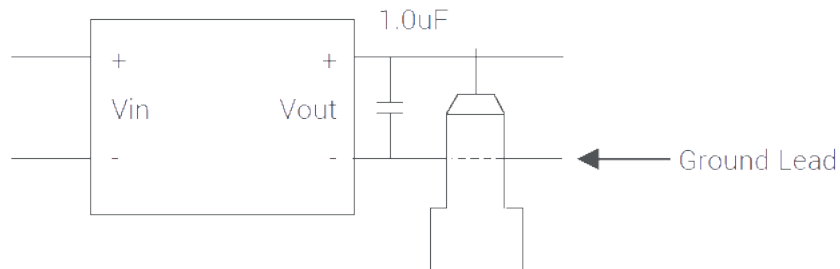
CONTROL CHARACTERISTICS

| EN Pin | CD Pin | Working State |
|--------|--------|---------------|
| Open | Open | None Work |
| Open | Gnd | None Work |
| Gnd | Open | Forward |
| Gnd | Gnd | Reverse |

The control function requires a minimum operating voltage 3VDC at +Vin to GND



RIPPLE & NOISE MEASURE METHOD



COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact **Wall Industries** for further information:

Phone: ☎ (603)778-2300
Toll Free: ☎ (888)597-9255
Fax: ☎ (603)778-9797
E-mail: sales@wallindustries.com
Web: www.wallindustries.com
Address: 37 Industrial Drive
Exeter, NH 03833