

## Data Sheet

**Total Output Power:** 1050 Watts  
**+3.3 or 5.0 Vdc Stand-by Output**  
**Wide Range Input Voltage:** 90 - 264 Vac

## SPECIAL FEATURES

- Active power factor correction
- EN61000-3-2 harmonic compliance
- Inrush control
- 1U X 2U form factor
- 19.0 W/in<sup>3</sup>
- +12 Vdc output
- Available in +3.3V and +5.0V standby output versions
- No minimum load required
- Hot plug operation
- N + 1 redundant
- Internal OR'ing fets
- Active current sharing (10 - 100% load)
- • Built-in cooling fan (40 mm x 28 mm)
- I<sup>2</sup>C communication interface bus
- PMBus compliant
- EEPROM for FRU data
- Amber/green bi-color LED status
- Internal fan speed control
- Fan fail tach output signal
- Full digital control
- Two years warranty

## SAFETY

- UL/cUL 60950 (UL Recognized)
- NEMKO+ CB report EN60950
- EN60950
- CE mark
- China CCC

# DS1050

## Distributed Power Bulk Front-End



## Electrical Specifications

### Input

|                  |                                                          |
|------------------|----------------------------------------------------------|
| Input range:     | 180 - 264 (1050 W)<br>90 - 264 (1050 W)                  |
| Frequency:       | 47 - 63 Hz, single phase AC                              |
| Inrush current:  | 40 Apk maximum inrush current                            |
| Efficiency:      | > 92% typical at high line 50% load (Climate Saver Gold) |
| Conducted EMI:   | FCC Subpart J EN55022 Class B                            |
| Radiated EMI:    | FCC Subpart J EN55022 Class B                            |
| Power factor:    | 0.99 typical                                             |
| Leakage current: | 1.40 mA @ 240 VAC                                        |
| Hold up time:    | 12 ms minimum                                            |

### Output

|                       |                                                                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Main DC voltage:      | +12 V @ 87 A                                                                                                                                   |
| Stand-By:             | +3.3 Vsb @ 4 A (5 V @ 2.5 A available)*                                                                                                        |
| Adjustment range:     | ± 5% on +12V only using I <sup>2</sup> C                                                                                                       |
| Regulation:           | +12 Vdc; +5%/-5%<br>+3.3 Vsb; +5%/-5%                                                                                                          |
| Over current:         | +12 Vdc; latches off if overcurrent lasts over 1 second, otherwise it is auto recovery (See Table 1 next page) +3.3 Vsb, 6 A max (hiccup mode) |
| Over voltage:         | +12 Vdc; 13.2 - 14.4 Vdc<br>+3.3 Vsb; 3.76 - 4.30 Vdc                                                                                          |
| Under voltage:        | +12 Vdc; 9 - 10.8 V (latch off)                                                                                                                |
| Turn-on delay:        | 2 second max, 5 - 50 mS, monotonic rise                                                                                                        |
| Main output rise time | 5 - 50 mS, monotonic rise                                                                                                                      |

\*20 W standby available with derated efficiency

### Logic Control

|                          |                                                                                                                                                                                                                                                                                            |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS_SEATED (A4):          | TTL logic LOW if power supply is seated into system connector. This is a short pin. A logic HIGH if the PSU is removed                                                                                                                                                                     |
| PWR GOOD (C3):           | Active TTL high when output is within regulation limits.                                                                                                                                                                                                                                   |
| AC OK (B1):              | A low logic level if the input voltage is within allowable limits. A TTL logic HIGH level, and a 5mS early warning signal before 12.0 V DC output loss of regulation.                                                                                                                      |
| PS_INHIBIT/PS_KILL (B4): | This signal is connected to a short pin on the PSU<br>When left open power supply operation will be inhibited. When the power supply is inserted into the system, this pin will be pull low by the system and turn the power supply on only after all other power supply pins have seated. |
| PS ON (A1):              | The output will be enabled when this signal is pulled low, below 0.8 V outputs disabled when pin is driven high or left open.                                                                                                                                                              |

### Environmental Specifications

|                                                  |                                                                           |
|--------------------------------------------------|---------------------------------------------------------------------------|
| Operating temperature:                           | -10° to 50 °C ; 50% power derating at 70 °C                               |
| Storage temperature:                             | -40°C to +85°C                                                            |
| Altitude, operating:                             | 10,000 ft                                                                 |
| Electromagnetic susceptibility/Input transients: | -EN61000-3-2, -3-3<br>-EN61000-4-2, 4.3, 4-4, -4-5, 4-11<br>-EN55024:1998 |
| RoHS & lead-free compliant:                      | No tantalum caps.                                                         |
| Humidity:                                        | 20 to 90% RH, non-condensing                                              |
| Shock and vibration specifications:              | Standard operating/non-operating random shock/vibration                   |
| MTBF (Demonstrated)                              | 500K Hrs at full load, 40 °C                                              |

### Ordering Information

| Model Number | Nominal Output Voltage Set Point | Set Point Tolerance | Total Regulation | Minimum Current | Maximum Current | Output Ripple P/P | Over Current      | Stand-by**    | Air Flow |
|--------------|----------------------------------|---------------------|------------------|-----------------|-----------------|-------------------|-------------------|---------------|----------|
| DS1050-3     | 12.0 Vdc                         | ±0.2%               | ±5%              | 0 A             | 87 A            | 120 mV            | 102.7 A - 128.4 A | 3.3 V @ 4 A   | STD      |
| DS1050-3-001 | 12.0 Vdc                         | ±0.2%               | ±5%              | 0 A             | 87 A            | 120 mV            | 102.7 A - 128.4 A | 3.3 V @ 4 A   | REV      |
| DS1050-3-002 | 12.0 Vdc                         | ±0.2%               | ±5%              | 0 A             | 87 A            | 120 mV            | 102.7 A - 128.4 A | 5.0 V @ 2.5 A | STD      |
| DS1050-3-003 | 12.0 Vdc                         | ±0.2%               | ±5%              | 0 A             | 87 A            | 120 mV            | 102.7 A - 128.4 A | 5.0 V @ 2.5 A | REV      |

\*Over current latches off if overcurrent lasts over 1 seconds, otherwise it is auto recovery.

\*\* 3.3V standby can operate at 6A, but overall unit efficiency will fall slightly below Gold Standard.

STANDARD AIRFLOW DIRECTION

279.4 ± 1.0

200.9

7.02 ± 0.80

EMI GASKET  
P/N 40366107530

HOT SURFACE LABEL

31.5

HANDLE  
P/N 1836611161X

(3x) EMI GASKET  
P/N 40366107530

(3x) 200.9

LABEL MODEL

PROGRAMMING WINDOW

8.0

3.2

275.5 ± 0.7

LATCH BUTTON  
P/N 1836611209X  
COLOR: HF GREEN

C14 GINLET

7.6

19.9

EMI GASKET  
P/N 40366107530

200.9

10.2 ± 0.5

27.1

12.8 ± 0.1

7.2 ± 0.5

39.9 ± 0.5

15.3 ± 0.5

(3x) EMI GASKET  
P/N 40366107530

(3x) 200.9

71.8 ± 0.5

FULL R

(2X) 1.5 X 45° CHAMFER  
RECOMMENDED KEY  
HEIGHTS 2.5MM MAX.

6.0 ± 0.5

6.0 ± 0.5

## DC Output Connector Pinout Assignment

Male connector as viewed from the rear of the supply:

|    |    |    |    |    |    |     |     |     |     |     |     |
|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
| D1 | D2 | D3 | D4 | D5 | D6 | PB1 | PB2 | PB3 | PB4 | PB5 | PB6 |
| C1 | C2 | C3 | C4 | C5 | C6 |     |     |     |     |     |     |
| B1 | B2 | B3 | B4 | B5 | B6 |     |     |     |     |     |     |
| A1 | A2 | A3 | A4 | A5 | A6 |     |     |     |     |     |     |

## P1 - Power Supply Side

|   |                                                        |
|---|--------------------------------------------------------|
| 1 | FCI Power Blade 51721 series<br>51721-10002406AA       |
| 2 | Molex Power Connector<br>SD-87667 series<br>87667-7002 |

## Mating Connector (System Side)

|   |                                                      |
|---|------------------------------------------------------|
| 1 | FCI Power Blade<br>51741-10002406CC<br>Strait Pins   |
| 2 | FCI Power Blade<br>51761-10002406AALF<br>Right Angle |

## Pin Assignments

| Pin  | Signal Name                     |
|------|---------------------------------|
| PB 1 | Main output return              |
| PB 2 | Main output return              |
| PB 3 | Main output return              |
| PB 4 | + Main output                   |
| PB 5 | + Main output                   |
| PB 6 | + Main output                   |
| A1   | PS_ON                           |
| A2   | Main output remote sense return |
| A3   | Spare                           |
| A4   | PS_SEATED (Power Supply Seated) |
| A5   | STAND-BY                        |
| A6   | STAND-BY RETURN                 |
| B1   | AC_OK (AC Input Present)        |
| B2   | Main output remote sense        |
| B3   | Main output current share       |
| B4   | PS_INHIBIT/PS_Kill              |
| B5   | STAND-BY                        |
| B6   | STAND-BY RETURN                 |

## Pin Assignments

| Pin | Signal Name                                |
|-----|--------------------------------------------|
| C1  | SDA (I <sup>2</sup> C Data Signal)         |
| C2  | SCL (I <sup>2</sup> C Clock Signal)*       |
| C3  | POWER GOOD                                 |
| C4  | Spare                                      |
| C5  | STAND-BY                                   |
| C6  | STAND-BY RETURN                            |
| D1  | A0 (I <sup>2</sup> C Address BIT 0 Signal) |
| D2  | A1 (I <sup>2</sup> C Address BIT 1 Signal) |
| D3  | S_INT (Alarm)                              |
| D4  | STAND-BY RMT SENSE                         |
| D5  | STAND-BY                                   |
| D6  | STAND-BY RETURN                            |

\*Supports I<sup>2</sup>C standard mode (100 kHz) only

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DS1050-DS Rev. 06.16.14



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