

POWER

Data Sheet

Total Output Power: 450 - 550 Watts
+12 Vdc main Output
+3.3 Vdc Stand-by Output
DC Input 36 - 75 Vdc

SPECIAL FEATURES

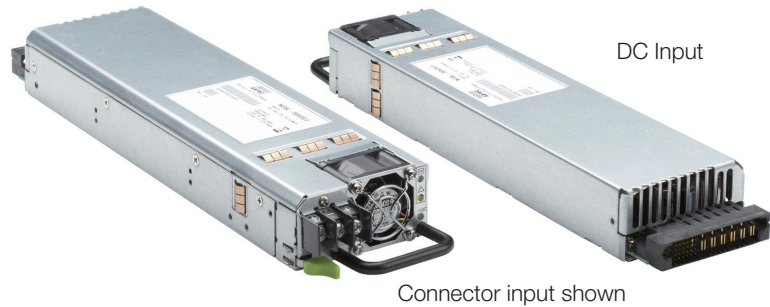
- 1U X 2U form factor
- 10.3 W/in³ (DS550) 8.4 W/in³ (DS450)
- +12 Vdc output
- +3.3 Vdc standby
- No minimum load required
- Hot plug operation
- N + 1 redundant
- Internal OR'ing fets
- Active current sharing
- Built-in cooling fans (40 mm x 28 mm)
- I²C communication interface bus
- EEPROM for FRU data
- Amber LED status, fan_fail
- Green LED status, power good/DC_OK status (VIN_GOOD)
- One year warranty

SAFETY

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

DS450DC-3/DS550DC-3

Distributed Power Bulk Front-End



Electrical Specifications

| Input | |
|------------------------|---|
| Input range | 36 - 75 Vdc |
| Frequency | DC input |
| Inrush current | 21 A maximum |
| Efficiency | 84% @ 75 Vdc |
| Conducted EMI | FCC Subpart J EN55022 Class A |
| Radiated EMI | FCC Subpart J EN55022 Class A |
| Power factor | N/A |
| Leakage current | N/A No touch current required. |
| Hold up time | 1 ms minimum |
| Output | |
| Main DC voltage | +12 V |
| Standby | +3.3 Vsb |
| Adjustment range | Factory Set, no pot adjustments |
| Regulation | +12 Vdc; +5%/-5% +3.3 Vsb; +5%/-5% |
| Overcurrent | See Table 1 next page |
| Overvoltage | +12 Vdc; 13.5 - 15 Vdc +3.3 Vsb; 3.76 - 4.30 Vdc |
| Undervoltage | +12 Vdc; 10.5 V - 11.0 V +3.3 Vsb; 2.77 - 3.00 Vdc |
| Turn-on delay | < 3 seconds |
| +12 V output rise time | 3 ms - 300 ms |

Logic Control

| | |
|-------------------------------|--|
| PS_ON /L(Power supply enable) | The power supply output will be enabled when this signal is pulled low (< 0.8 V). HIGH = Output V1 OFF LOW = Output V1 ON |
| VIN_GOOD/H (Input OK) | Active High signal asserted when the input voltage rises above the min input voltage specified. This signal is internally pulled up through 4.7 K ohms to the 3.3 V housekeeping voltage. |
| POK/H (Output OK) | Active High signal asserted when the output is within regulation. This signal is internally pulled up through 1.0 K ohms to the 3.3 V housekeeping voltage. |
| TACH_1 | This open collector signal generates two pulses per each fan revolution. This signal is eternally pulled up to the housekeeping voltage. |
| PS_KILL | This signal will cause the output to shut down when drive high (> 24 V) or left floating. The PS_KILL will cause the output to latch off and requires recycle of PS_ON or DC input to reset. |

Environmental Specifications

| | |
|---|--|
| Operating temperature | +10 °C to +45 °C, able to start-up at -10 °C |
| Storage temperature | -40 °C to +70 °C |
| Altitude, operating | 10,000 ft. |
| Electromagnetic susceptibility/Input transients | - EN61000-3-2, -3-3 - EN61000-4-2, 4.3, 4-4, -4-5, 4-11 - EN55024:1998 |
| RoHS & lead-free compliant (no tantalum caps.) | |
| Humidity | 20 to 90% RH, non-condensing |
| Shock and vibration specifications complies with Astec Std. Specifications. | |
| MTBF (calculated) | 500k hours at full load, 25 °C |

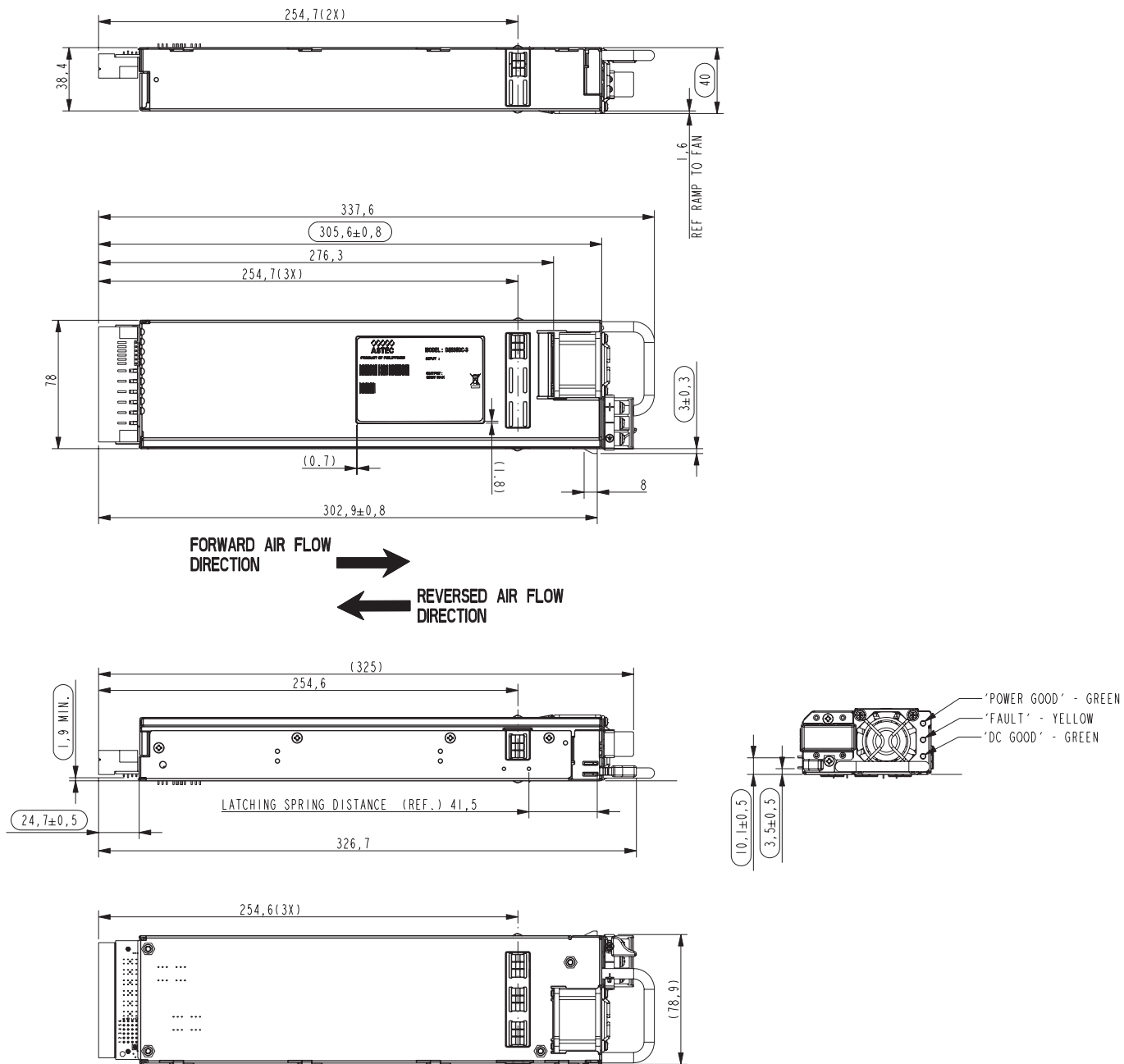
Ordering Information

| Output | Nominal Output Voltage Set Point | Set Point Tolerance | Total Regulation | Minimum Current | Maximum Current | Output Ripple P/P | Over Current | Options |
|---------------|----------------------------------|---------------------|------------------|-----------------|-----------------|-------------------|-------------------------------------|-------------|
| DS450DC-3 | 12.0 Vdc 3.3 Vsb | ± 0.2% ± 1% | +5/-3% +5/-4% | 0 A 0 A | 37.0 A 3.0 A | 120 mV 60 mV | 39.5 - 44.4% 4.9 A Avg, 7 A max | Standard |
| DS450DC-3-002 | 12.0 Vdc 3.3 Vsb | ± 0.2% ± 1% | +5/-3% +5/-4% | 0 A 0 A | 37.0 A 3.0 A | 120 mV 60 mV | 39.5 - 44.4% 4.9 A Avg, 7 A max | Reverse Air |
| DS550DC-3 | 12.0 Vdc 3.3 Vsb | ± 0.2% ± 1% | +5/-3% +5/-4% | 0 A 0 A | 45.0 A 3.0 A | 120 mV 60 mV | 48.0A - 54.0A 4.9 A Avg, 7 A max | Standard |
| DS550DC-3-003 | 12.0 Vdc 3.3 Vsb | ± 0.2% ± 1% | +5/-3% +5/-4% | 0 A 0 A | 45.0 A 3.0 A | 120 mV 60 mV | 48.0A - 54.0A 4.9 A Avg, 7 A max | Reverse Air |

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

*For 5 Vsb, please contact marketing department.

Mechanical Drawing



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 51721-10002406AA |
| 2 | Molex Power Connector SD-87667 series 87667-7002 |

Mating Connector (System Side)

| | |
|---|--|
| 1 | FCI Power Blade 51741-10002406CC Strait Pins |
| 2 | FCI Power Blade 51761-10002406AA Right Angle |

Pin Assignments

| Pin | Signal Name |
|------|---------------------|
| PB 1 | +12 V Return |
| PB 2 | +12 V Return |
| PB 3 | +12 V Return |
| PB 4 | +12 V |
| PB 5 | +12 V |
| PB 6 | +12 V |
| A1 | PS_KILL |
| A2 | +12 V_Current Share |
| A3 | Return |
| A4 | Write Protect |
| A5 | PS A0 |
| A6 | +3.3 V SB |
| B1 | Return |
| B2 | 12 V RTN Sense |
| B3 | Return |
| B4 | +3.3 V SB |
| B5 | SDA |
| B6 | -PS_ON/L |

Pin Assignments

| Pin | Signal Name |
|-----|-----------------|
| C1 | Return |
| C2 | Tach_1 |
| C3 | Return |
| C4 | +3.3 V SB |
| C5 | SCL* |
| C6 | VIN_GOOD/H |
| D1 | -Present/L |
| D2 | +12 V_Sense |
| D3 | Return |
| D4 | +3.3 V SB |
| D5 | Alert/L (S_INT) |
| D6 | POK/H (PWROK/H) |

*Supports I²C standard mode (100 kHz) only

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