

DS450DC-3/ DS550DC-3

450 - 550 Watts
Distributed Power System

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



Connector input shown

Special Features

- 1U X 2U Form Factor
- 10.3 W / in³ (DS550)
8.4 W / in³ (DS450)
- +12 Vdc Output
- +3.3 Vdc Stand-By
- 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
- EERPOM for FRU Data
- Amber LED Status, Fan_Fail
- Green LED Status, Power Good /
DC_OK Status (VIN_GOOD)
- Internal Fan Speed Control
- Fan Fail Tach Output Signal
- One Year Warranty

Safety

- UL/cUL 60950 (UL Recognized)
- NEMKO+ CB Report EN60950
- EN60950
- CE Mark
- China CCC

Electrical Specifications

| Input | |
|-------------------------|---|
| Input range: | 36 - 75 Vdc |
| Frequency: | DC input |
| Inrush current: | 21 A maximum |
| Efficiency: | EVT: 87% @ 72 Vdc; 87.4% @ 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 |
| Stand-By: | +3.3 Vsb |
| Adjustment range: | Factory Set, no pot adjustments |
| Regulation: | +12 Vdc; +5%/-5% +3.3 Vsb; +5%/-5% |
| Over current: | See Table 1 next page |
| Over voltage: | +12 Vdc; 13.5 - 15 Vdc +3.3 Vsb; 3.76 - 4.30 Vdc |
| Under voltage: | +12 Vdc; 10.5 V - 11.0 V +3.3 Vsb; 2.77 - 3.00 Vdc |
| Turn-on delay: | < 3 seconds, EVT: 2 seconds |
| +12 V Output Rise Time: | 3 - 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. |
| Digital Control: | PMBus - I ² C compliant |

Environmental Specifications

| | |
|--|--|
| Operating temperature: | -10 °C to 50 °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 Level - 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, Q3205 |
| MTBF (observed): | 500K Hrs at 80%, 40 °C |

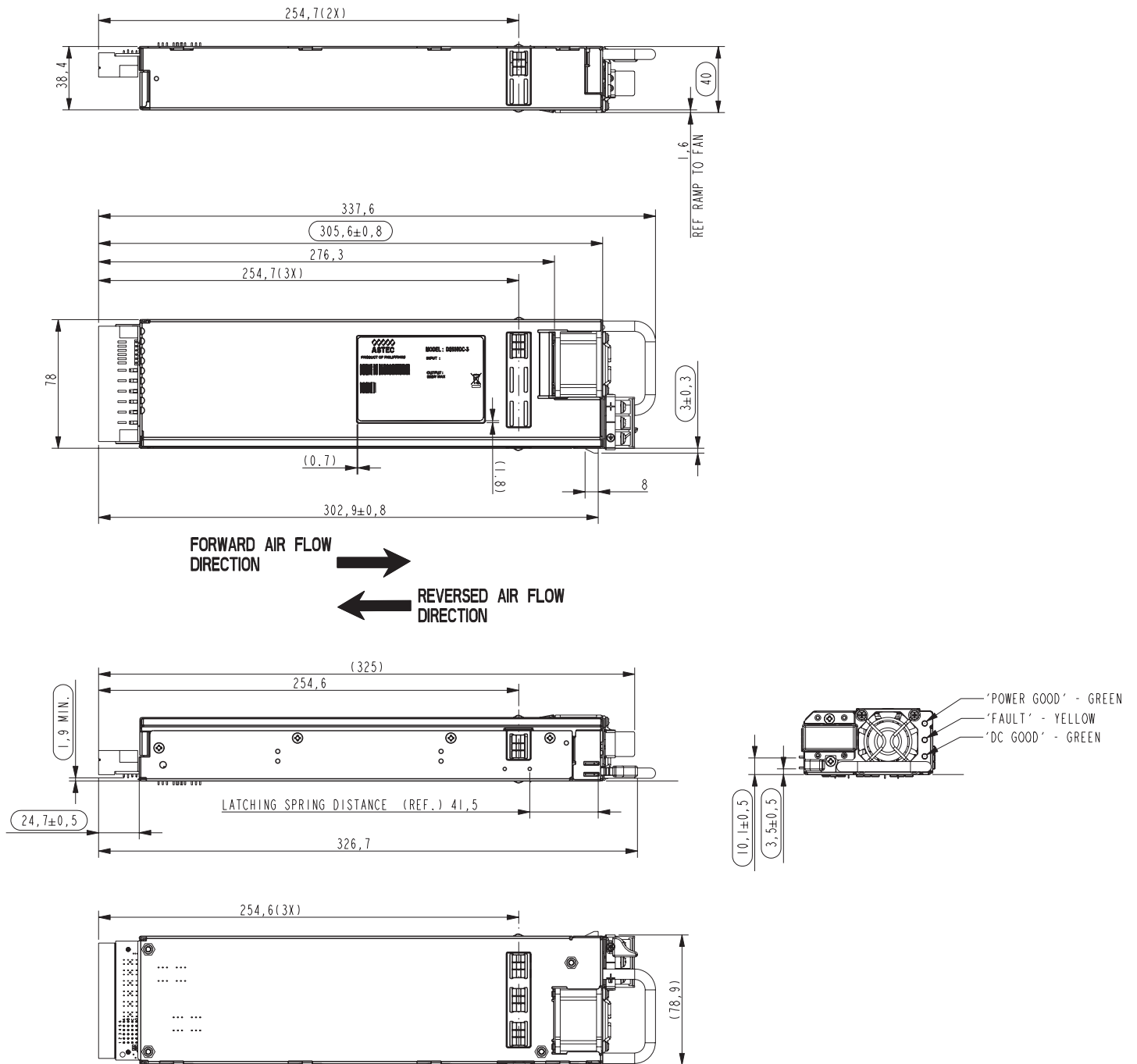
Ordering Information

| 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 60mV | 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 0A | 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, consult marketing.

Mechanical Drawing



DC Output Connector Pinout Assignment

Male connector as viewed from the rear of the supply:

| | | | | | | | | | | | | | | | |
|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| D1 | D2 | D3 | D4 | D5 | D6 | | | | | | | | | | |
| C1 | C2 | C3 | C4 | C5 | C6 | PB1 | PB2 | PB3 | PB4 | PB5 | PB6 | | | | |
| 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 | 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 |
| 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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