

## 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 / in<sup>3</sup> (DS550)  
8.4 W / in<sup>3</sup> (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)
- I<sup>2</sup>C 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 <sup>2</sup> 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

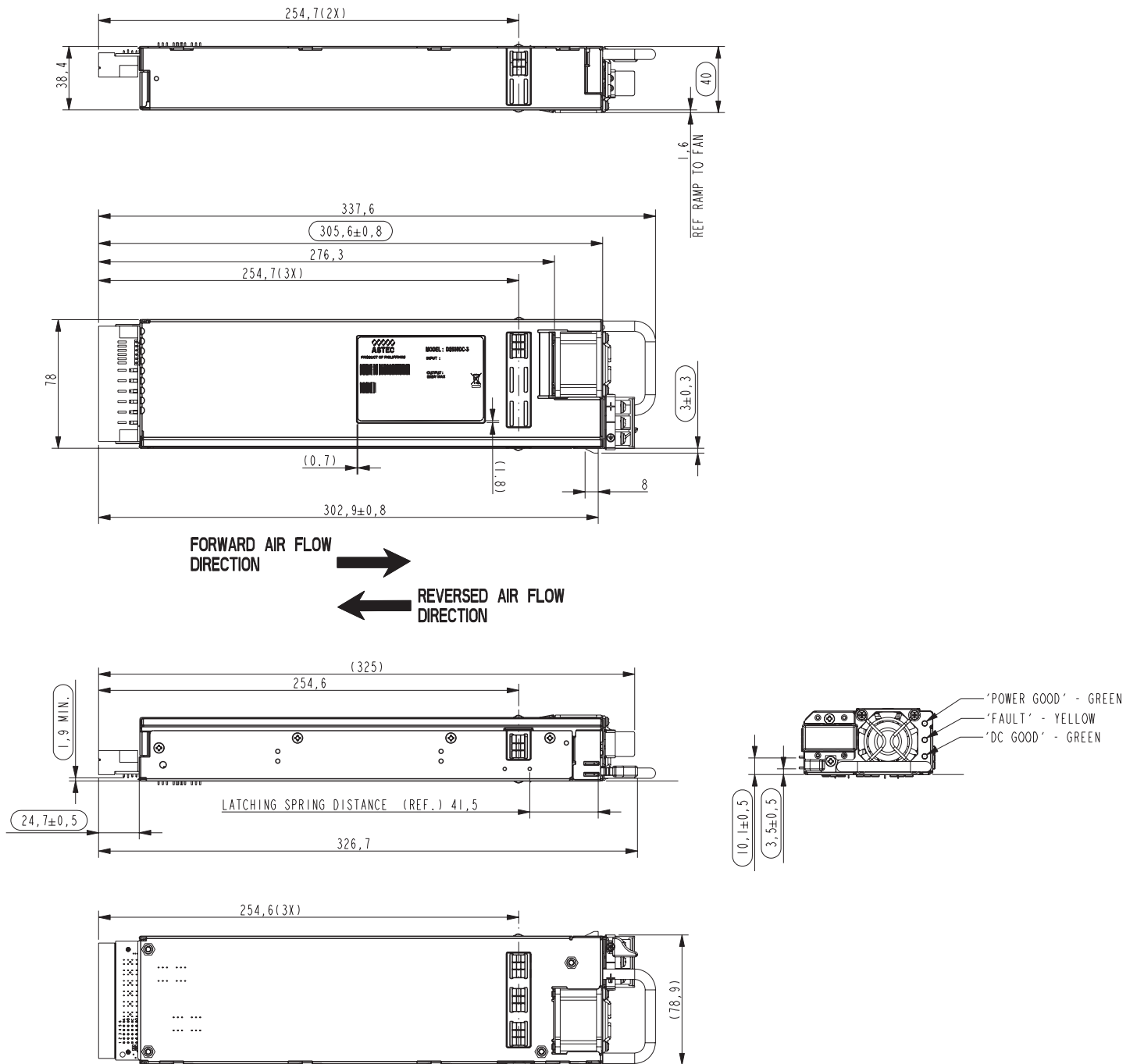
### Ordering Information

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

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