CAR2548FP Series

2500 Watt 48V Front End Power Supply

Features:

- Leading Edge Power Density, 27W/in^3 in 1U Form Factor
- I^{2}C Serial Bus and PMBus Interface
- Full Features Status & Control (Current, Voltage, AC OK, DC OK & Temperature OK),
- Active Current Sharing (Single Wire)
- Remote On/Off, Remote Sense, Voltage Program Circuits
- Microprocessor Based Design Allows for Automatic Fan Speed Control
- Optional Universal / 4-Bay 19" Rack Delivers 10kW of Power

FEATURES	BENEFITS
High Power Density 27W/in^3	More system space for application circuits and hardware
Load Sharing & Fault Tolerant	Excellent reliability in N+1 operation
Automatic Fan Speed Control	Reduces audible noise and increases reliability
System Scalability up to 10,000 Watts	Allows flexibility with minimum investment
Universal Input & International Certifications	Reduces logistical costs

KEY MARKET SEGMENTS & APPLICATIONS

- Distributed Power
- RF Amplifiers
- High End Servers
- ATE Equipment
- High End Routers and Switchgear
- Semiconductor Burn-in Equipment

SPECIFICATIONS	2500 Watt +48V Front End Power Supply
Input Voltage Range	90-264 VAC, 47-63 Hz
Input Current Maximum	16A @ 180VAC, Full Load (max)
Inrush Current	50A max. cold start (per ETS 300 132-1 and Bellcore specifications)
Input Protection	Dual Fused (Line & Neutral) 20 Amp / 250 VAC Type 3AB Axial
Power Factor	0.99 typical complies with IEC555, EN60555-2, EN61000-3-2
Efficiency	92% typical at 230 VAC Full Load Operation (including OR'ing Mosfets)
Output Power	2500W at High Line Operation (180-264 VAC), 1200W at Low Line Operation (90-132 VAC)
Output Voltage Range	+48 VDC (±10% with remote programming)
Output Current	52A @48V
Standby Bias Voltage	5VSB@1A, reference to Vout Return
Voltage Regulation	±2% of Vnom for any combination of line, load and temperature
Ouput Ripple & Noise	Complies with ETS300 132-2, 32dBnrc. Bandwidth: 25Hz - 20kHz. 2mVrms pk-pk with 0.1µF ceramic and 10µF electrolytics caps at the output
Transient Response	5% max deviation Recovery time 300µs @ 50% load step and di/dt < 1A/µs
Switching Frequency	200kHz (input) / 400kHz (output)
Hold-Up Time	16.8msec (230 VAC full load)
Remote On/Off	ON if >3V or open; OFF if <1V (max. sink 1mA) Open collector type
Current Limit Protection	110-130% of Iout nominal
Short Circuit Protection	Self protected with auto recovery
Over Voltage Protection	-60 VDC max, latched. Reset condition by recycling AC input or toggling remote on/off
Operating Temperature	-10°C to +70°C. power derating above 50°C at 2.5% per °C
Over Temperature Protection	Non latching; protection active at 110°C internal temperature, restart at 95°C (typical)
EMI	FCC-B & EN55022-B with specified filter or at rack level, GR-1089-CORE
LED Indicators	Green = AC OK & DC OK, Red = Fault
Analog Status & Control	Voltage Programming (V Prog), Load sharing (I Share), Remote On/Off, Current Monitor (I Monitor), Over temperature (Temp Warning), Fault, PS Present, Module Enable
Digital Status & Control	I^{2}C Option and PMBus Option, see detailed specification for details
Shock & Vibration	IEC68-2-27, MIL-STD-810E, Telcordia GR-63-CORE
Dimensions	14.25 x 4.00 x 1.65" / 362 x 102 x 41.9mm
Weight	4.73lbs / 2.15kg
Safety Approvals	IEC/UL/CSA/EN60950-1, CE Mark (LVD), TUV
Options	I^{2}C Interface, PMBus, Bezel, 5VSB Output

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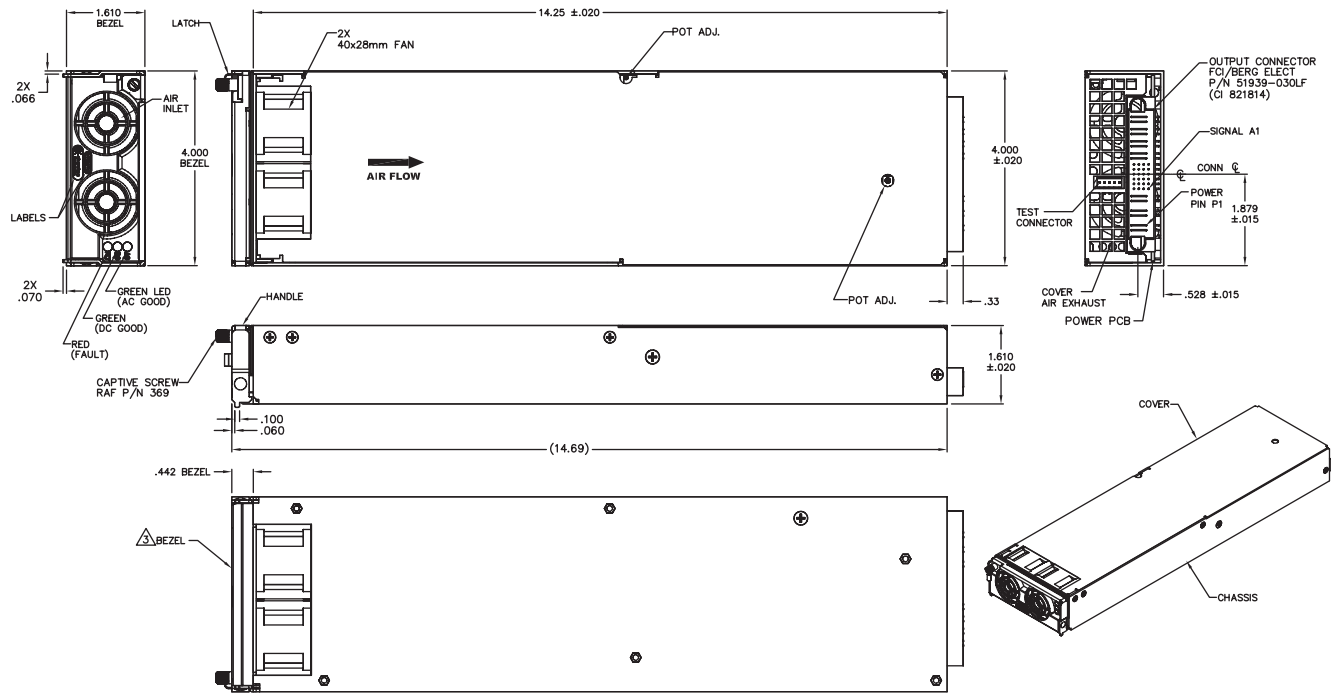
OUTLINE DRAWING



All Dimensions in Inches (mm)
Tolerance: .XX = ± .02 in (.50 mm)
.XXX = ± .010 in (.254 mm)

PART NUMBER DEFINITION GUIDE:

CAR 25 48 F P x x xx -1A

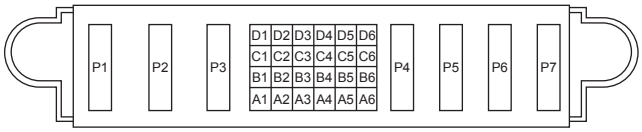
- **Series**: CAR
- **Output Current**: 25=2500W
- **Output Voltage**: 48=48V
- **Type**: F=Front End
- **Polarity**: P=Positive
- **Options**: B=Bezel Option; Blank=None
- **Interface**: Blank = PM Bus; C=I²C; A = CAN Bus
- **RoHS**: Blank=Non-compliant; YO=5 of 6 Compliant; ZO=6 of 6 Compliant
- **Rev.**: -1A

Examples:

CAR2548FPBCZO-1A
2500W/48V Front End, Bezel, I²C, 6 of 6 RoHS

CAR2548FPBAZO-1A
2500W/48V Front End, Bezel, CAN Bus 6 of 6 RoHS compliance

CONNECTOR DRAWING:



Connector FCI Berg P/N 51939-030
Mating connector FCI Berg P/N 51915-051

PIN OUT INFORMATION

A1	VSB 3.3V	B4	Module Enable	D1	V Prog	P4	Vout
A2	VSB 3.3V Return	B5	Serial Data Line	D2	OVP Test Point	P5	Vout
A3	Signal RTN	B6	Serial Data Clock	D3	Remote On/Off	P6	Vout Return
A4	Write Protect	C1	I Share	D4	DC OK	P7	Vout Return
A5	Remote Sense (+)	C2	Protocol Select	D5	AC OK		
A6	Remote Sense (-)	C3	Temp Warning	D6	Interrupt		
B1	Fault	C4	I2C Address (A0)	P1	Line		
B2	I Monitor	C5	I2C Address (A1)	P2	Neutral		
B3	PS Present	C6	I2C Address (A2)	P3	Chassis		

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