

MFA350 Series



- U-Channel, Cover Fan & Hotswap Formats
- High Power Density up to 11.1 W/in³
- Screw Terminals Available
- -10 °C to +70 °C Operation
- Power Fail, DC OK & Active Current Share
- 5 V Standby & 12 V Fan Supply Outputs
- 48 VDC Input Versions Available (DFA350)

Specification

Input

Input Voltage	• 85-264 VAC (derate output power 10% below 90 VAC)
Input Frequency	• 47-63 Hz
Input Current	• Typically 3.6 A at 115 VAC & 1.8 A at 230 VAC
Inrush Current	• <60 A max at 230 VAC cold start
Power Factor	• >0.9 harmonics compliant with EN61000-3-2 Class A
Earth Leakage Current	• Typically 1 mA at 230 VAC/50 Hz, 0.5 mA at 115 VAC/60 Hz
Input Protection	• T6.3 A/250 V internal in line fuse

Output

Output Voltage	• See tables
Output Voltage Trim	• ±10%
Initial Set Accuracy	• V1 ±1%, V2 ±5%, V3 ±3%
Minimum Load	• No minimum load required
Start Up Delay	• 2 s maximum, typically 1 s
Hold Up Time	• 16 ms minimum at 90 VAC full load
Drift	• ±0.2% after 20 min warm-up
Line Regulation	• V1 ±0.5%, V2 ±3.0%, V3 ±0.5%
Load Regulation	• V1 ±1.0%, V2 ±5.0%, V3 ±1.0%, 0-100% load V1 & V3, 10-100% load V2
Over/Undershoot	• <1% maximum
Transient Response	• <4% max deviation, with 50-75-50% load step. Recovery to within 1% <500 µs
Ripple & Noise	• V1 & V3: 1%, V2: 2% pk-pk, 20 MHz BW
Overvoltage Protection	• 115-140% Vnom (output V1 only)
Overtemperature Protection	• Thermal sensor under PCB shuts unit down typically >+75 °C
Overload Protection	• 110-140%, I nom V1
Short Circuit Protection	• Continuous
Temperature Coefficient	• 0.05%/°C
Remote Sense	• Compensates for 0.5 V total voltage drop
Remote On/Off	• Short circuit or TTL Low turns PSU off, can also be configured as enable
Current Share	• Up to 3 supplies can be connected in parallel, derate total output current to 90%

General

Efficiency	• Typically 86%
Isolation	• 3000 VAC Input to Output 1500 VAC Input to Ground 100 VDC Output to Ground
Switching Frequency	• Typically PFC 62 kHz, main converter 157 kHz
Power Density	• 11.1 W/in ³
Signals	• Power Fail - open collector, transistor off for AC good, ≥5 ms warning of loss of output. DC OK - open collector, transistor off for DC good
MTBF	• Typically 460 kHrs to MIL-HDBK-217F, notice 2, +25 °C GB

Environmental

Operating Temperature	• Forced cooled: -10 °C to +70 °C, derate linearly from +50 °C at 2.5%/°C to +70 °C
Cooling	• >13 CFM forced airflow required for U Channel Versions '-H', '-TF' & '-EF' versions have integral fan
Operating Humidity	• 5-95% RH
Storage Temperature	• -20 °C to +85 °C
Operating Altitude	• 3000 m
Shock	• 3 x 30 g/11 ms shocks in both +ve & -ve directions along the 3 orthogonal axes, total 18 shocks.
Vibration	• Single axis 10-500 Hz at 2 g x 10 sweeps

EMC & Safety

Emissions	• EN55022, Class B conducted EN55022, Class A radiated
Harmonic Currents	• EN61000-3-2, Class A
Voltage Flicker	• EN61000-3-3
Radiated Immunity	• EN61000-4-3, level 3 Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria A
Surge	• EN61000-4-5, level 3 Perf Criteria A
Conducted Immunity	• EN61000-4-6, 10 V rms Perf Criteria A
Dips & Interruptions	• EN61000-4-11 Perf Criteria A, B, B
Safety Approvals	• CB Report, IEC60950-1:2001, CSA22.2 No. 60950-1-05, UL60950-1 (2003), TUV EN60950-1/A11:2004, CCC pending contact sales

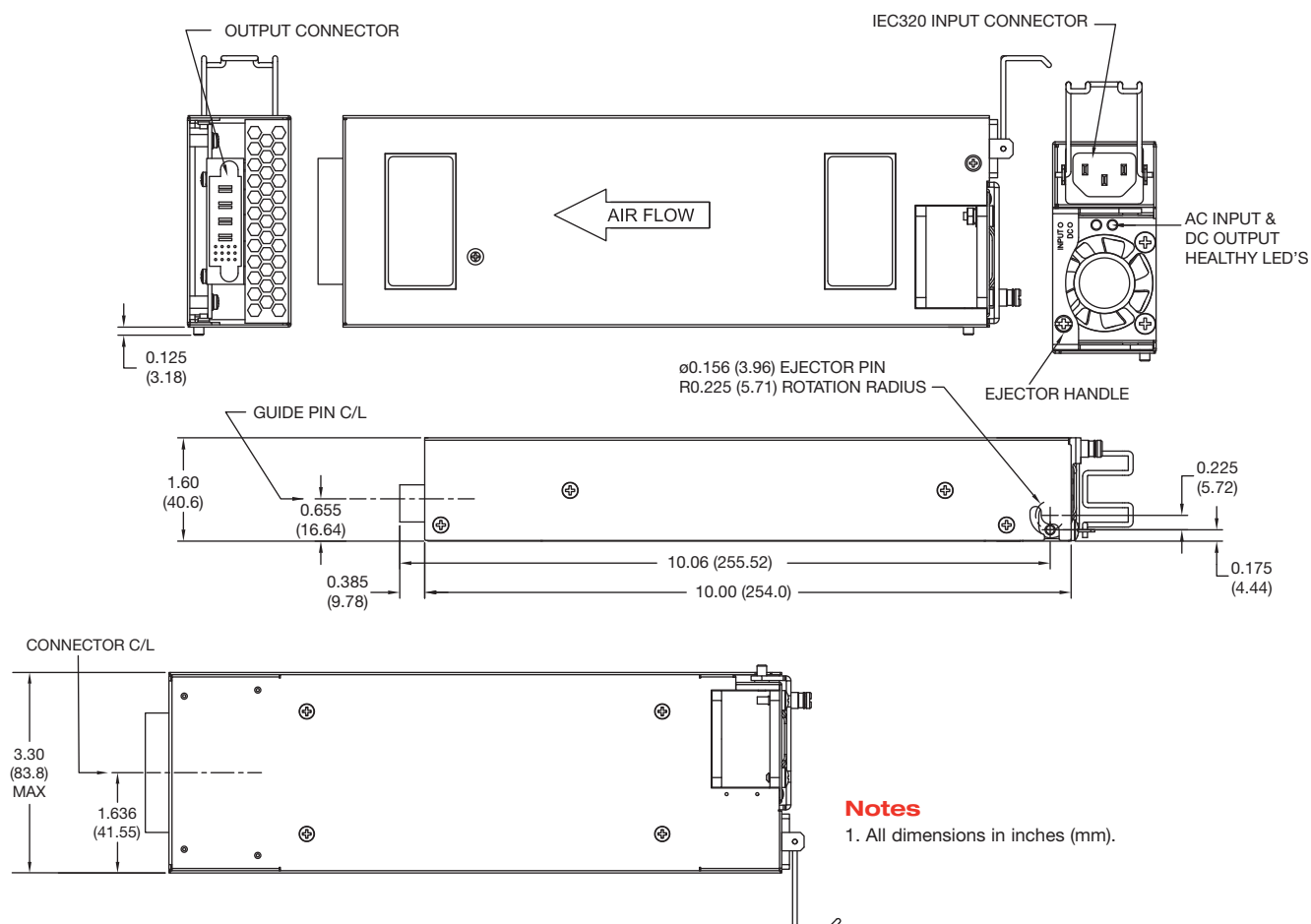
T H E X P E R T S I N P O W E R

Models and Ratings

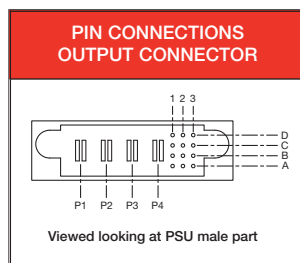
MFA350-H **XP**

Output Voltage V1	Maximum Output Current	Standby Supply V3	Max Power	Model Number
12.0 VDC	29.0 A	5 V/0.3 A	350 W	MFA350PS12-H
24.0 VDC	14.5 A	5 V/0.3 A	350 W	MFA350PS24-H
48.0 VDC	7.3 A	5 V/0.3 A	352 W	MFA350PS48-H

Mechanical Details

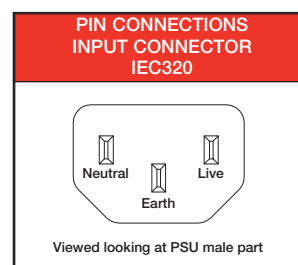


Pin Connections



Mating parts:
FCI 51762-10401200AA-LF

PIN CONNECTIONS OUTPUT CONNECTOR FCI 51732-035-LF	
A1	+Sense
A2	Not Used
A3	DC OK
B1	-Sense
B2	Not Used
B3	AC OK
C1	Current Share
C2	Not Used
C3	5 V Standby V3
D1	Not Used
D2	ROF (Inhibit/Enable)
D3	5 V Standby Return V3
P1	-V1
P2	-V1
P3	+V1
P4	+V1



Thermal Considerations

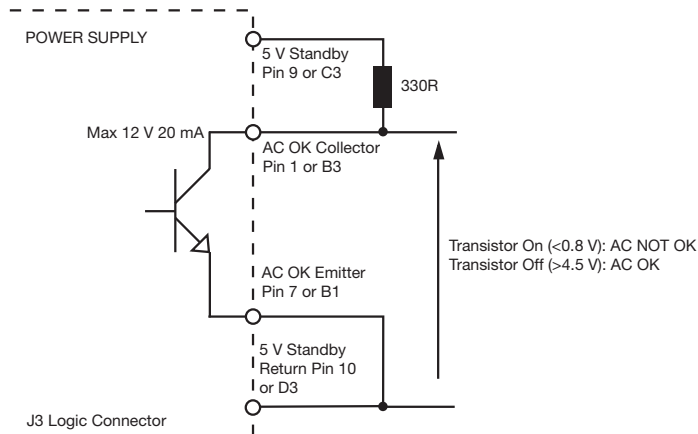
MFA350 **XP**

In order to ensure safe operation of the PSU in the end-use equipment, the temperature of the components listed in the table below must not be exceeded. See drawing on 2nd page of this datasheet for component locations. The temperature should be monitored using K type thermocouples placed on the hottest part of the component (out of any direct air flow). See longform datasheet for further information of service life.

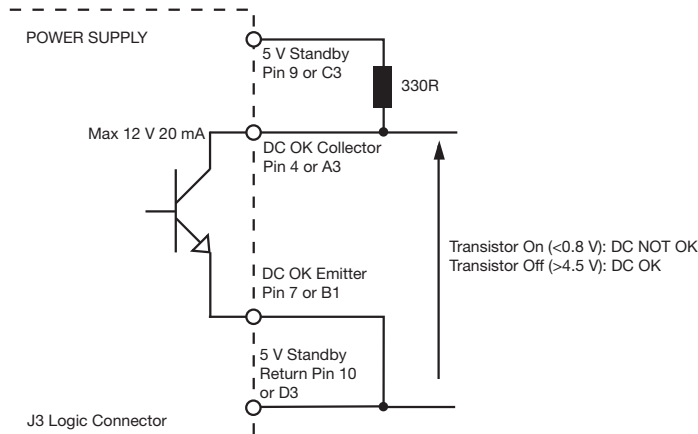
Temperature Measurements (Ambient $\leq 50^{\circ}\text{C}$)	
Component	Max Temperature $^{\circ}\text{C}$
T3	90 $^{\circ}\text{C}$
BR1	105 $^{\circ}\text{C}$
D35	85 $^{\circ}\text{C}$
L3	90 $^{\circ}\text{C}$
C8	105 $^{\circ}\text{C}$
C63	105 $^{\circ}\text{C}$

Signals MFA350 & MFA350-H

AC OK/Power Fail



DC OK



Remote On/Off (Inhibit/Enable)

