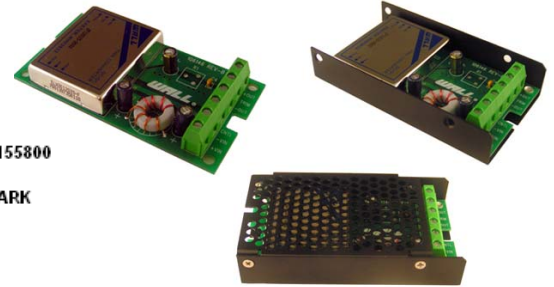


FEATURES

- Output Current up to 6A
- High Efficiency up to 90%
- Fixed Switching Frequency
- Six-Sided Continuous Shield
- 2:1 Wide Input Voltage Range
- International Safety Standard Approval
- **Call Factory for More Output Power Options**
- Chassis Mount Options: Open Frame, U Channel, and Enclosed Types Available



SPECIFICATIONS: CMZF Series

All specifications apply @ 25°C ambient unless otherwise noted

INPUT SPECIFICATIONS

Input Voltage Range	12V nominal Input	9 - 18VDC
	24V nominal input	18 - 36VDC
	48V nominal input	36 - 75VDC
Under Voltage Lockout		
12VDC input	DC-DC ON	9VDC
	DC-DC OFF	8VDC
24VDC input	DC-DC ON	17.8VDC
	DC-DC OFF	16VDC
48VDC input	DC-DC ON	36VDC
	DC-DC OFF	33VDC
Input Voltage Variation	dv/dt	5V/ms max. (Complies with ETS300 132 part 4.4)
Input Surge Voltage (100ms max)	12V input	36VDC
	24V input	50VDC
	48V input	100VDC
Input Reflected Ripple Current (nominal Vin and full load)		30mA _{p-p}
Start Up Time (nominal Vin and constant resistive load)		
Power Up		25ms typ.
Remote ON/OFF		25ms typ.
Remote ON/OFF (See Note 1)		
(Positive Logic)	DC-DC ON	Open or 3.5V < Vr < 12V
	DC-DC OFF	Short or 0V < Vr < 1.2V
Remote Off Input Current (nominal Vin)		2.5mA

OUTPUT SPECIFICATIONS

Output Voltage	see table
Voltage Accuracy (nominal Vin and full load)	±1%
Voltage Adjustability	±10%
Output Current	see table
Output Power	30 watts max.
Line Regulation (LL to HL at FL)	±0.2%
Load Regulation (10% to 100% FL)	±0.5%
Minimum Load	0%
Ripple/Noise (20 MHz BW)	see table
Transient Response Recovery Time (25% load step change)	300us

PROTECTION SPECIFICATIONS

Over Voltage Protection	1.5V Output	3.9V
(Zener diode clamp)	1.8V Output	3.9V
	2.5V Output	3.9V
	3.3V Output	3.9V
	5V Output	6.2V
	12V Output	15V
	15V Output	18V
Over Load Protection (% of full load at nominal input)		150% max.
Short Circuit Protection		Hiccup, automatic recovery
Over Temperature Protection		115°C typ.

GENERAL SPECIFICATIONS

Efficiency	see table
Switching Frequency	300KHz typ.
Isolation Voltage	
Input to Output	1600VDC min.
Input to Case	1600VDC min.
Output to Case	1600VDC min.
Isolation Resistance	10 ⁹ ohms min.
Isolation Capacitance	1000pF max.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40°C to +85°C (with derating)
Storage Temperature	-55°C ~ +105°C
Maximum Case Temperature	+100°C
Relative Humidity (non-condensing)	5% to 95% RH
Temperature Coefficient	±0.02% / °C max.
Thermal Impedance (See Note 3)	
Natural Convection	10°C / Watt
Natural Convection with Heat-Sink	8.24°C/Watt
Thermal Shock	MIL-STD-810D
Vibration	10~55Hz, 10G, 30 minutes along X, Y, and Z
MTBF (See Note 2)	1.535 x 10 ⁶ hrs

PHYSICAL SPECIFICATIONS

Potting material of the DC/DC converter	Epoxy (UL94-V0)
Shielding of the DC/DC converter	six – sided
Weight	Approximately 7oz
Dimensions	4.00(L) x 2.25(W) x 0.81(H) inches

SAFETY & EMC

Approvals and Standards	IEC60950-1, UL60950-1, EN60950-1
Conducted Emissions	EN55022 Class A
Radiated Emissions	EN55022 Class A
ESD	EN61000-4-2 Perf. Criteria B
Radiated Immunity	EN61000-4-3 Perf. Criteria A
Fast Transient	EN61000-4-4 Perf. Criteria B
Surge	EN61000-4-5 Perf. Criteria B
Conducted Immunity	EN61000-4-6 Perf. Criteria A

Due to advances in technology, specifications subject to change without notice

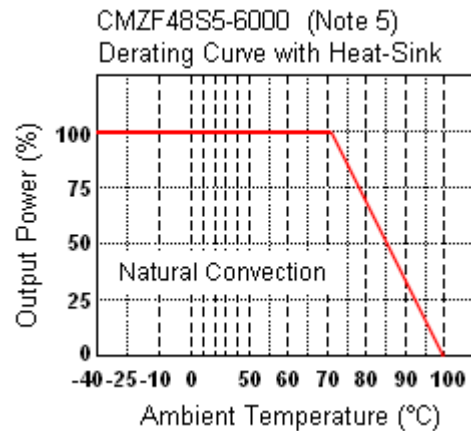
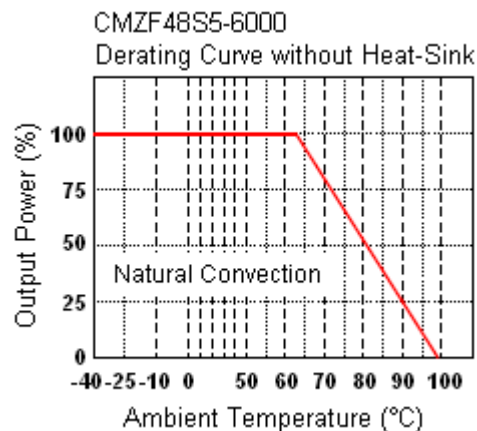
OUTPUT VOLTAGE / CURRENT RATING CHART

Model Number	Input Voltage	Output Voltage	Output Current	Input Current ⁽⁴⁾	Ripple & Noise	Efficiency ⁽⁵⁾ (Typ)	Max Capacitive Load ⁽⁶⁾
CMZF12S1.5-6000	12 VDC (9 ~ 18VDC)	1.5 VDC	6000 mA	1014 mA	50mVp-p	78%	85,800μF
CMZF12S1.8-6000		1.8 VDC	6000 mA	1169 mA	50mVp-p	81%	65,000μF
CMZF12S2.5-6000		2.5 VDC	6000 mA	1582 mA	50mVp-p	83%	33,000μF
CMZF12S3.3-6000		3.3 VDC	6000 mA	2037 mA	50mVp-p	85%	19,500μF
CMZF12S5-6000		5 VDC	6000 mA	3012 mA	50mVp-p	87%	10,200μF
CMZF12S12-2500		12 VDC	2500 mA	2976 mA	75mVp-p	88%	3240μF
CMZF12S15-2000		15 VDC	2000 mA	2976 mA	75mVp-p	88%	1100μF
CMZF24S1.5-6000	24 VDC (18 ~ 36 VDC)	1.5 VDC	6000 mA	493 mA	50mVp-p	80%	85,800μF
CMZF24S1.8-6000		1.8 VDC	6000 mA	580 mA	50mVp-p	82%	65,000μF
CMZF24S2.5-6000		2.5 VDC	6000 mA	780 mA	50mVp-p	84%	33,000μF
CMZF24S3.3-6000		3.3 VDC	6000 mA	1010 mA	50mVp-p	86%	19,500μF
CMZF24S5-6000		5 VDC	6000 mA	1490 mA	50mVp-p	88%	10,200μF
CMZF24S12-2500		12 VDC	2500 mA	1470 mA	75mVp-p	89%	3240μF
CMZF24S15-2000		15 VDC	2000 mA	1470 mA	75mVp-p	89%	1100μF
CMZF48S1.5-6000	48 VDC (36 ~ 75 VDC)	1.5 VDC	6000 mA	244 mA	50mVp-p	81%	85,800μF
CMZF48S1.8-6000		1.8 VDC	6000 mA	290 mA	50mVp-p	83%	65,000μF
CMZF48S2.5-6000		2.5 VDC	6000 mA	390 mA	50mVp-p	85%	33,000μF
CMZF48S3.3-6000		3.3 VDC	6000 mA	500 mA	50mVp-p	87%	19,500μF
CMZF48S5-6000		5 VDC	6000 mA	740 mA	50mVp-p	89%	10,200μF
CMZF48S12-2500		12 VDC	2500 mA	730 mA	75mVp-p	90%	3240μF
CMZF48S15-2000		15 VDC	2000 mA	730 mA	75mVp-p	90%	1100μF

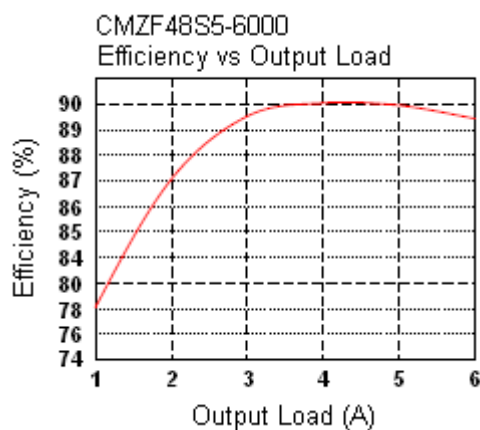
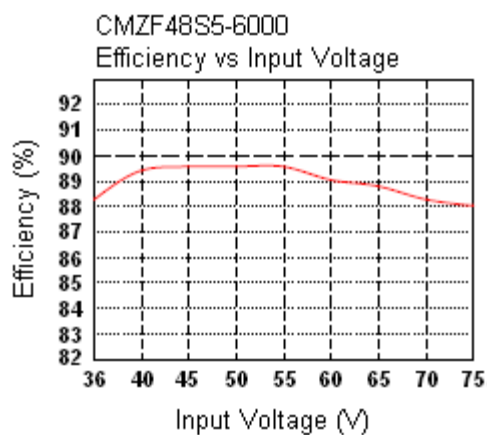
NOTES

1. The ON/OFF control pin is referenced to negative input.
2. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C. (Ground fixed and controlled environment).
3. Heat sink is optional. Please call factory for ordering details.
4. Maximum value at nominal input voltage and full load.
5. Typical value at nominal input voltage and full load
6. Test by minimum Vin and constant resistive load.
7. Chassis Mount Options: No suffix for open frame, "U" suffix for U Channel, and "E" suffix for Enclosed type.

DERATING CURVES



EFFICIENCY GRAPHS



MECHANICAL DRAWING

Unit: inches [mm]

