Astrodyne

10W Ultraminiature Open Frame Switching Power Supplies

EFM10 series

1.66"W x 2.46"L x 0.91"H

- Universal 90-264VAC Input
- High Efficiency
- Improved EMI Performance
- 3000V Isolation
- Single, Dual & Triple Outputs
- UL60950-1, EN60950-1

Model Number	Output Voltage	Output Amps(max)
SINGLE OUTPUT		
EFM-0100	3.3 Volts(DC)	2.5Amps
EFM-0101	5 Volts(DC)	2Amps
EFM-0122	9 Volts(DC)	1.1Amps
EFM-0102	12 Volts(DC)	0.85Amps
EFM-0103	15 Volts(DC)	0.67Amps
EFM-0118	18 Volts(DC)	0.55Amps
EFM-0105	24 Volts(DC)	0.42Amps
DUAL OUTPUT		
EFM-0106	±12 Volts(DC)	±0.42Amps
EFM-0107	±15 Volts(DC)	±0.34Amps
EFM-0108	5 / 12Volts(DC)	1.3 / 0.6Amps
TRIPLE OUTPUT		
EFM-0109	5/ ±12 Volts(DC)	1.8 / ±0.13Amps
EFM-0111	5/ ±15 Volts(DC)	1.8/ ±0.13Amps

INPUT SPECIFICATIONS

Input Voltage Range	90-264 VAC
Frequency Range	47-63 Hz
Inrush Current (115/230Vin)	20/40Amps, typ.

OUTPUT SPECIFICATIONS

Voltage and Current (Note 5)	See Selection Chart
Load Regulation (20%-FL)(Note 6)	Singles: ± 3%,
	Duals: ± 3% (EFM-0108: 0.5/3%)
	Triple: 0.2 / ±0.3%
Line Regulation, typ (Note 7)	Singles ± 0.1~1%
	Duals ± 0.3~1%
	(except EFM-0108: 0.5/ 0.5%)
	Triple: 0.3 / ±0.1%
Cross Regulation (Note 10)	Duals 2% (EFM-0108: 0.5/3%)
	Triple: NA/ ±0.1%
Preset Accuracy (Note 8)	Single/Duals 1%
	(except EFM-0108: 2 / 5%)
	Triple: 1 / ±5%
DC Voltage Adjust (typ)	± 6% of FS (Primary)
Temperature Coefficient	±0.03%/°C
Ripple/Noise, typ (Note 1, 9)	Single/Dual: 100mVpk-pk (except
	EFM-0108: 50/50mVpk-pk)
	Triple: 50 / ±75mVpk-pk
Over Voltage Protection	Clamp
Over Temp. Protection	Latching, recov after cooling and
	power restored
Short Circuit Protection (Note 2)	Continuous, self-recovering
Hold Up Time	30 mS, typ
DC Output Power	10 Watts, max

PHYSICAL SPECIFICATIONS

Size	1.66" x 2.46" x 0.91"
Construction	Open Frame
Weight	1.6oz (44g)

All specifications are typical at nominal input, full load, and 25°C unless otherwise noted

* These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long term reliability. Proper operation under conditions other than the standard operating conditions is neither warranteed nor implied.

GENERAL SPECIFICATIONS

Isolation (Note 3)	3KVAC Input-Output
	2500VAC Inpout-Ground
	1000VAC Output-Ground
Efficiency	Single/Dual 75% typ
	Triple 70%
Switching Frequency	100Khz, (fixed, typical)
Safety	UL60950-1, EN60950-1
EMC	EN55022

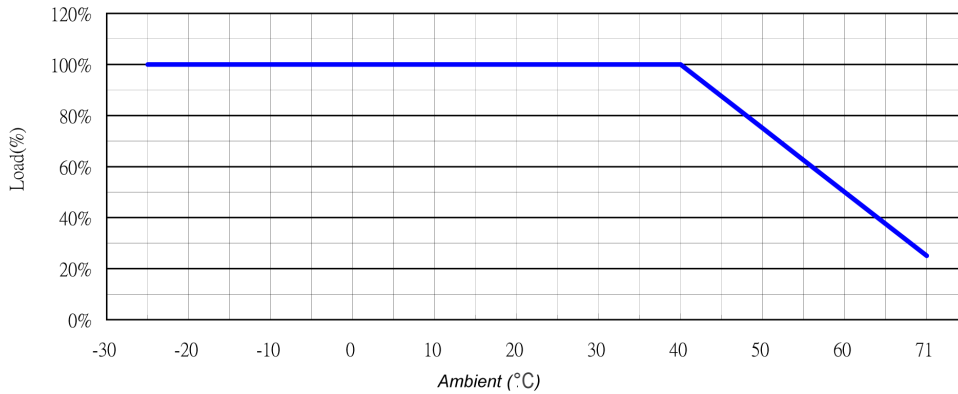## ENVIRONMENTAL SPECIFICATIONS

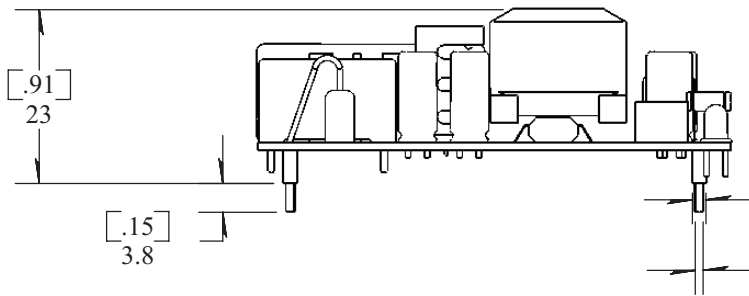|		
Oper. Temperature (Note 4)	-0 to +40°C (See Derate)	
Storage Temperature	-25 to +71°C *	
Relative Humidity	0 to + 95%, non-cond *	
MTBF	(Mil Std 217, 25°C)	575,000 Hrs

NOTES

1. Ripple and Noise depend upon output voltage as specified per particular model.

2. Short Curcuit Protection is self-recovering when overcurrent condition is removed.

3. Isolation for up to 1 minute duration.

4. Specified for free-air convection cooling.

5. Minimum load is NOT required for proper operation. However, auxiliary outputs should be reduced as a function of primary output minimum load or load regulation will be higher.

6. Load regulation measured from 20% to full load.

7. Line regulation measured from 90VAC to 264VAC.

8. Preset accuracy measured at nominal load, 120VAC input.

9. O/P noise measured directly at pins/terminals at nom. load, 0.1uF bypass, pk-pk @20MHz bandwidth.

10. Cross Reg-Duals: Measured at nom. load with the other output varied between 60% and 100% inom.

Astrodyne products are not authorized or warranteed for use as critical components in life support systems, equipment used in hazardous environments, nuclear controls systems, or other mission-critical applications.
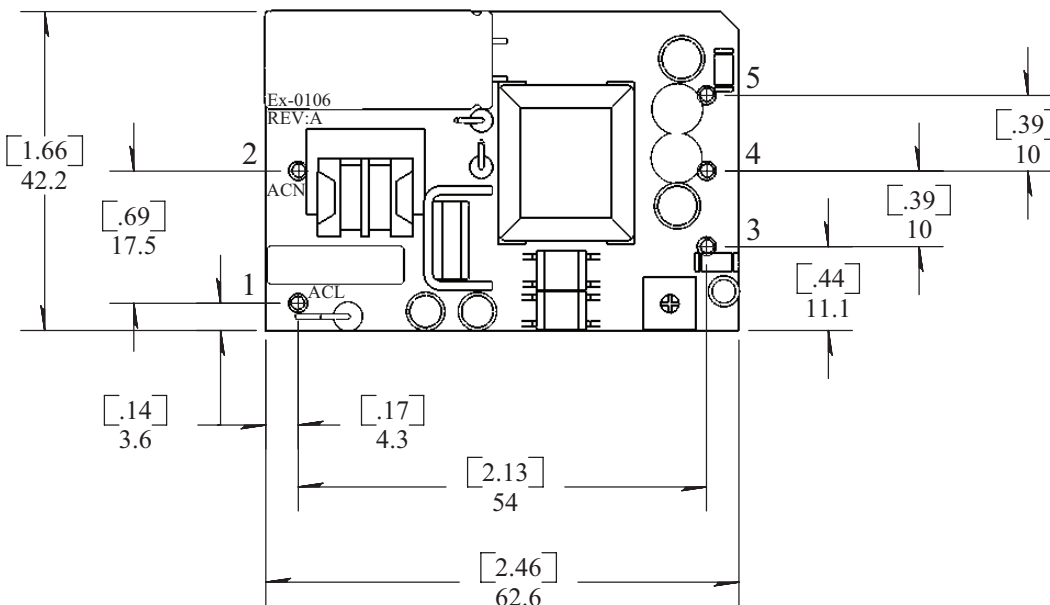
OUTPUT DERATING CURVE

MECHANICAL DIMENSIONS - SINGLE + DUAL OUTPUTS

.91	23
.15	3.8
.07	Ø1.8
.04	Ø1

Dimensions are in inches

Pin#	Single	Dual	Dual(0108)
1	ACL	ACL	ACL
2	ACN	ACN	ACN
3	+Vout	+Vout	+12V
4	NC	Com	+5V
5	-Vout	-Vout	Com

Ex-0106
REV:A

1.66	42.2
.69	17.5
.14	3.6
.17	4.3
2.13	54
2.46	62.6
.39	10
.39	10
.44	11.1

MECHANICAL DIMENSIONS - TRIPLE OUTPUTS