



As Small as 2.36"W x 3.41"L x 0.93"H (Single Output)

- Universal 90-264VAC Input
- High Efficiency
- Improved EMI Performance
- 4000VAC Isolation
- Single, Dual and Triple Outputs
- Full Safety Approvals



Model Number	Output Voltage	Output Amps (max), (Note 2)	Load Reg (max)	Ripple & Noise pk-pk	Efficiency typ
SINGLE OUTPUT					
EFM-0300/M	3.3 Volts	7.5Amps	3%	100mV typ.	73%
EFM-0301/M	5 Volts	6Amps	2%	70mV typ.	78%
EFM-0322/M	9 Volts	3.33Amps	1%	70mV typ.	81%
EFM-0302/M	12 Volts	2.5Amps	1%	70mV typ.	83%
EFM-0303/M	15 Volts	2Amps	1%	70mV typ.	84%
EFM-0318/M	18 Volts	1.67Amps	1%	70mV typ.	84%
EFM-0305/M	24 Volts	1.25Amps	1%	50mV typ.	84%
EFM-0312/M	48 Volts	0.63Amps	1%	50mV typ.	85%
DUAL OUTPUT					
EFM-0306/M	±12 Volts	±1.25Amps	±3%	±50mV typ.	80%
EFM-0307/M	±15 Volts	±1Amps	±3%	±50mV typ.	80%
EFM-0308/M	5/12 Volts	3/1.25Amps	±2%/ ±4%	±50mV typ.	74%
TRIPLE OUTPUT					
EFM-0309/M	5/±12 Volts	3/±0.63Amps	0.6% / ±0.5%	100mV / ±75mV typ.	71%
EFM-0311/M	5/±15 Volts	3/±0.5Amps	0.6% / ±0.5%	100mV / ±75mV typ.	74%

30W Ultraminiature Medical Grade Switching Power Supplies

EFM30/M series

INPUT SPECIFICATIONS

Input Voltage Range	90-264 VAC (100-240VAC nom.)
Frequency Range	47-63 Hz
Inrush Current, typ at cold start:	30A@115V, 60A@230V Input *
Leakage Current	0.3mA @ 264VAC, 50Hz

OUTPUT SPECIFICATIONS

Voltage and Current	See Selection Chart
Load Regulation (Note 3)	See Selection Chart
Line Regulation (LL-HL)	±1%, max. (Single & Duals)
	0.6 / ±0.2%, max. (Triples)
Cross Regulation	
Duals:	±3% max. (0308: ±2 / ±6%)
Triples:	±3% max.
Preset Accuracy, Max.	
Single & Duals:	1% (0308: ±2 / ±5%)
Triples:	1 / ±5%
DC Voltage Adjust (typ)	±10% of FS (Primary)
Temperature Coefficient	±0.03%/°C (0-50°C, typ)
Ripple/Noise (Notes 1 & 4)	See Selection Chart
Over Voltage Protection	Clamp Auto Recovery *
Current Limit	>110% Load, Auto-Recovery *
Short Circuit Protection	Auto Recovery *
Hold Up Time	20 mS, typ

GENERAL SPECIFICATIONS

Input-Out Isolation (1 min max.)	4KVAC Medical
Efficiency at nom input	See Selection Chart
Switching Frequency	65Khz, (fixed, typical)
Safety UL/cUL:	ANSI/AAMI ES60601-1 3rd ed.
	CSA C22.2 No. 60601-1 3rd ed.
UL-EU:	EN60601-1 3rd ed.
CB:	IEC60601-1 3rd ed.
CE:	EN55022:2006 Class B
EMC	EN55022, Class B

PHYSICAL SPECIFICATIONS

Size	Single:	2.36" x 3.41" x 0.93"
	Duals/Triples:	2.36" x 3.94" x 0.93"
Construction		Open Frame
Weight		4.3oz (122g), typ.

ENVIRONMENTAL SPECIFICATIONS

Oper. Temperature (Free Air)	-20 to +40°C FL
	Derate from 40°C to 70°C
	(See Derate Curve)
Storage Temperature	-25 to +80°C *
Relative Humidity	0 to + 95%, non-cond *
MTBF (MIL-STD-217, 25°C)	180,000 Hrs min.

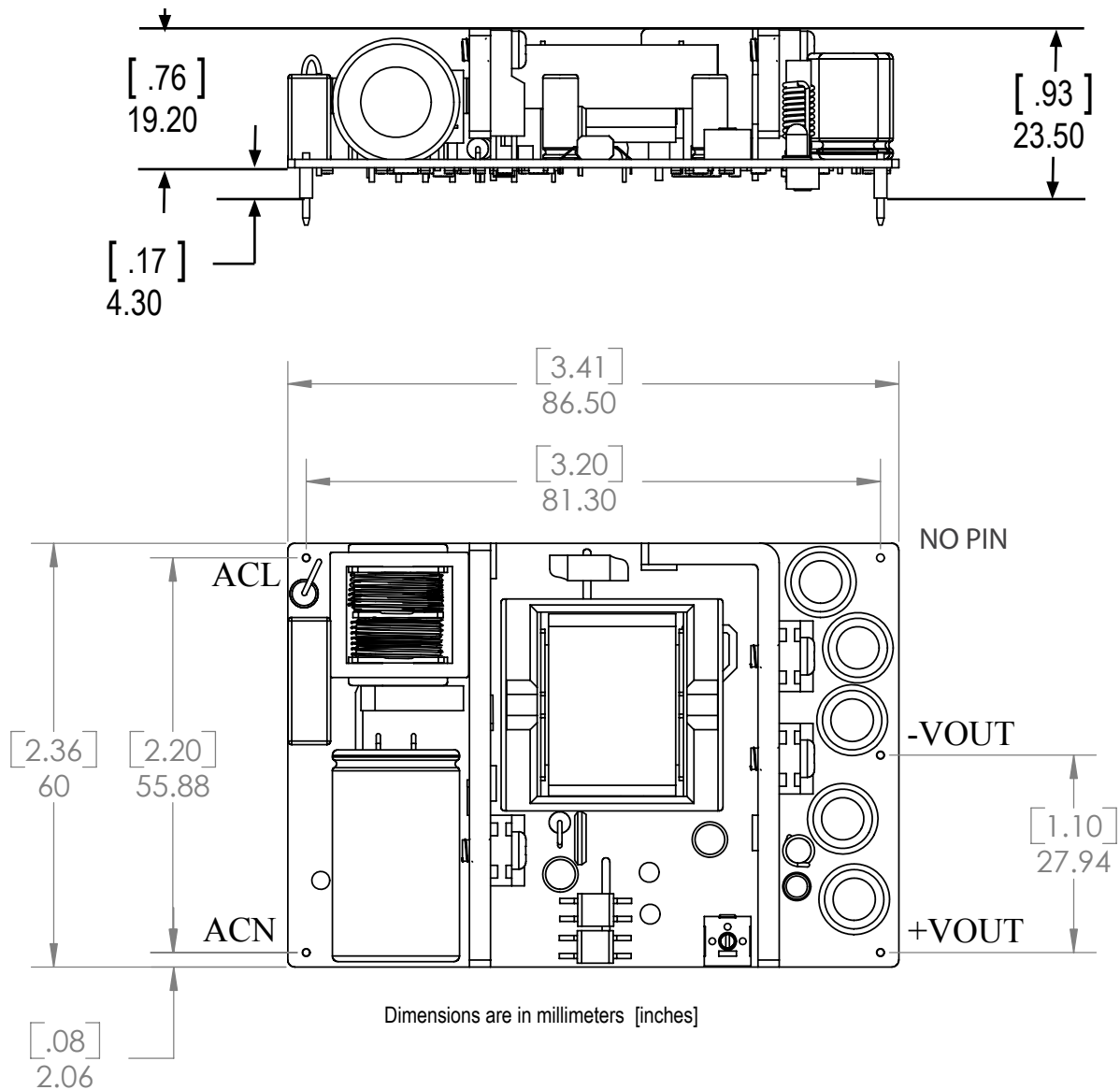
Notes:

1. All measurements should be made directly at the terminals of the power supply
2. 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.
3. Load Regulation measured from 20% to full load. All other outputs at nominal load.
4. Output noise measured directly at pins at nominal load with 0.1uF and 10uF capacitors, pk-pk @ 20MHz bandwidth.

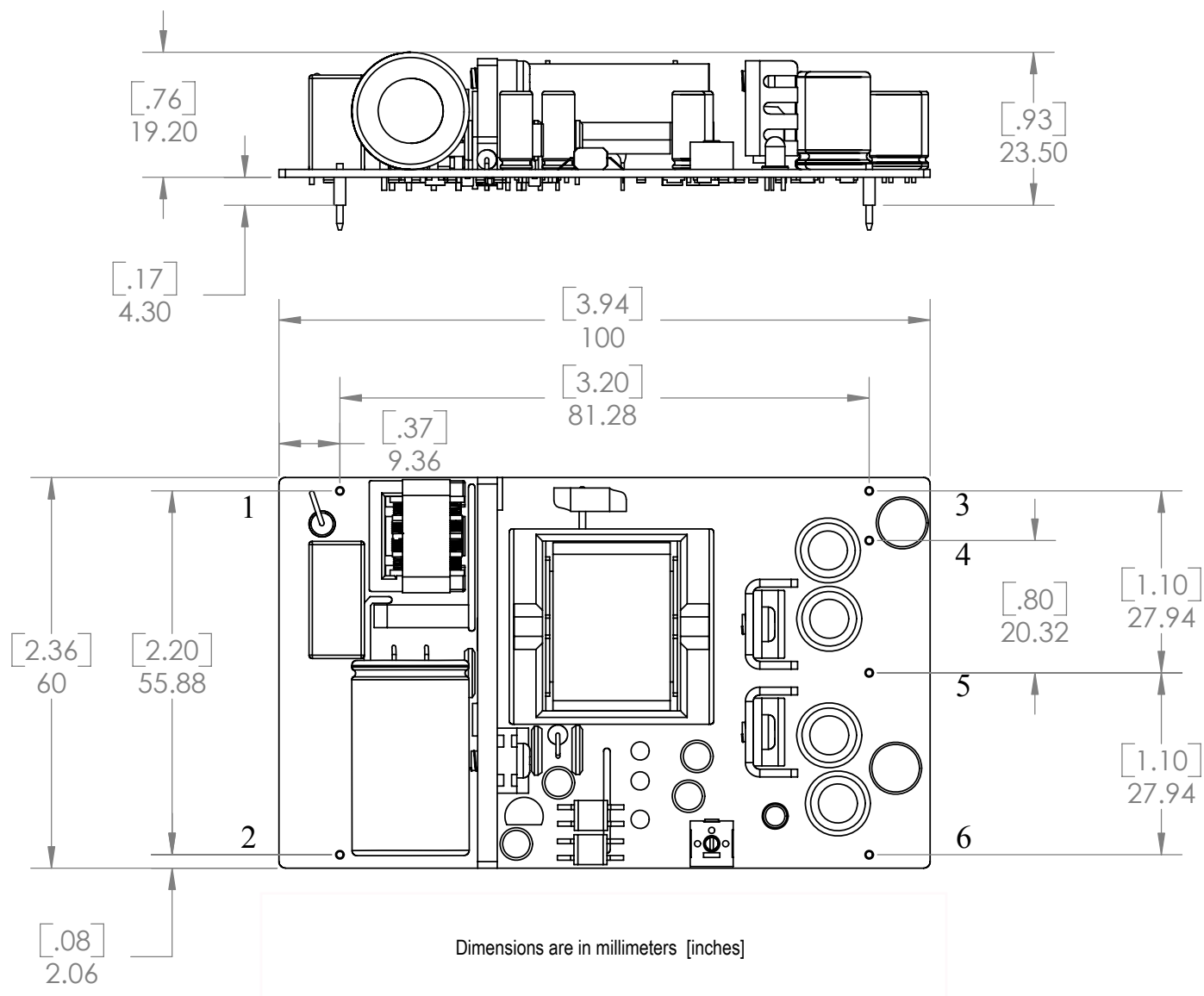
All specifications are typical at nominal input, full load, and 25°C unless otherwise noted

* 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 warranted nor implied.

MECHANICAL DIMENSIONS - SINGLE

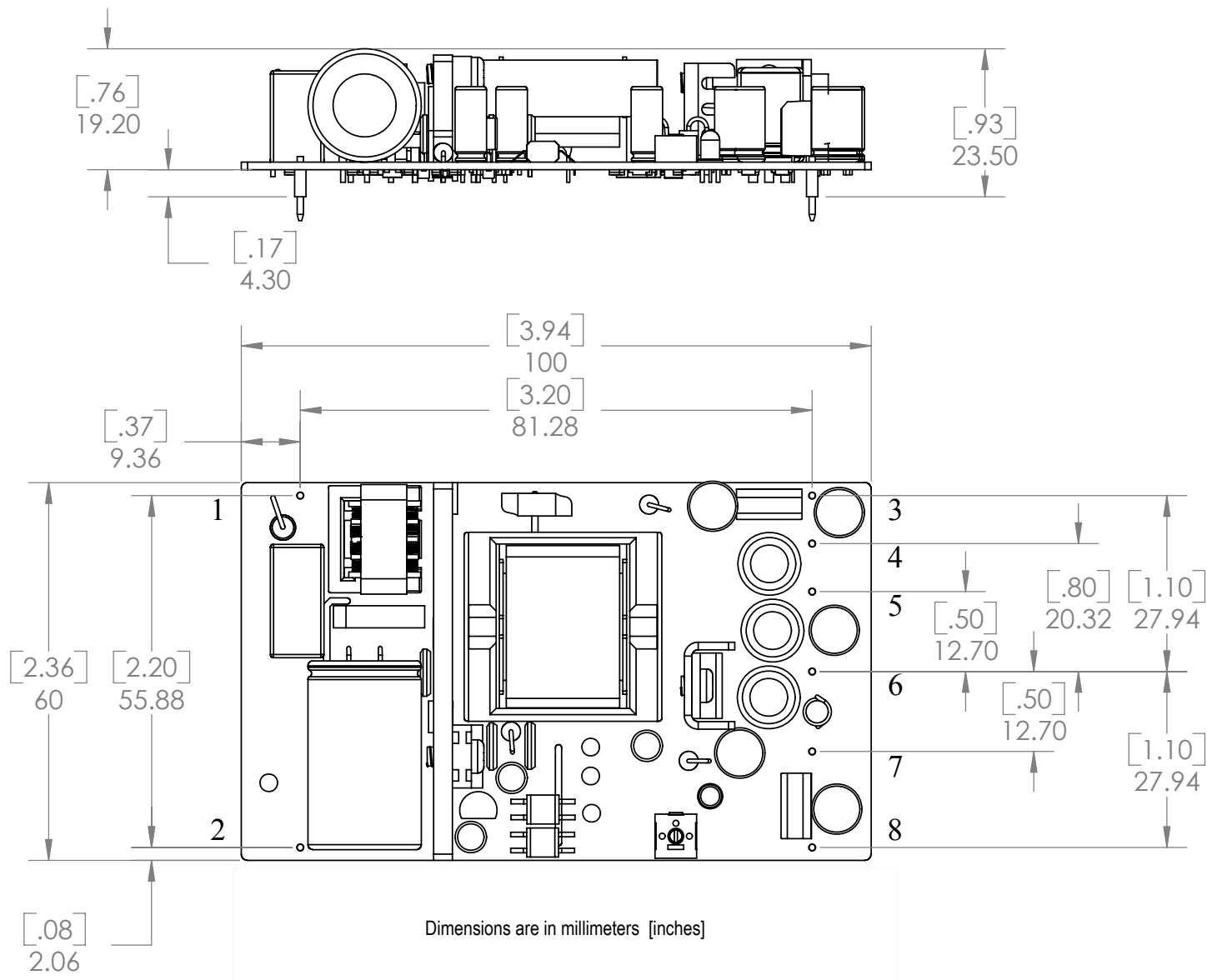


MECHANICAL DIMENSIONS - DUAL



PIN #	EFM-0306/M~0307/M	EFM-0308/M
1	ACL	ACL
2	ACN	ACN
3	- V out	RETURN
4	NO PIN	NO PIN
5	COMMON	+5 V out
6	+ V out	+12 V out

MECHANICAL DIMENSIONS - TRIPLE



PIN #	Function
1	ACL
2	ACN
3	- V out
4	NO PIN
5	+5 V RETURN
6	COMMON
7	+5 V
8	+ V out

OUTPUT DERATING CURVE

