SEMTECH

HIGH CURRENT, 3-PHASE FULL WAVE BRIDGE ASSEMBLY

SET111403
SET111419
SET111412
SET111404
SET111411

January 16, 1998

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HIGH CURRENT, HIGH DENSITY, THREE PHASE FULL WAVE BRIDGE RECTIFIER.

- Low thermal impedance
- Small size and low weight
- High current applications
- Isolated for direct heatsink mounting
- High surge ratings

QUICK REFERENCE DATA

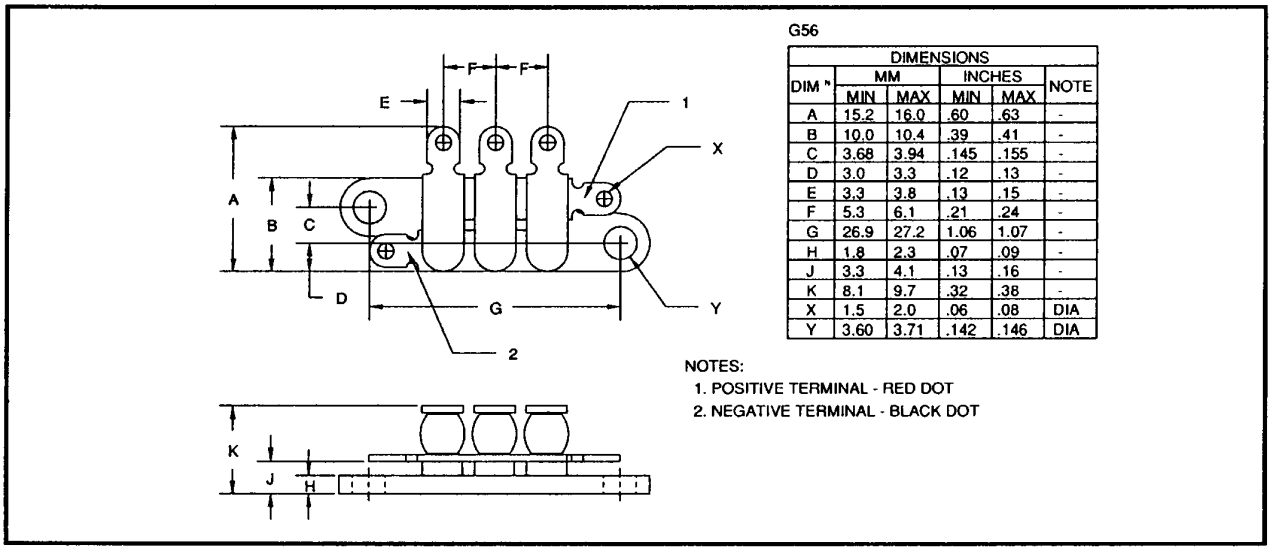
- V_R = 150V - 1000V
- I_O = 45A
- t_{rr} = 30nS - 2µS
- $I_{FSM} \geq$ 150A

ABSOLUTE MAXIMUM RATINGS

Device Type	Working Reverse Voltage (V_{RWM})	Average Rectified Current ($I_{F(AV)}$) @ T_{mb}			1 Cycle Surge I_{FSM} t_p = 8.3mS		Repetitive Surge (I_{FRM})	Operating & Storage Temperature Range	
		@ 55°C	100°C	125°C	@ 25 °C	@ 100°C	@ 25 °C	(T_{OP})	(T_{STG})
	Volts	Amps	Amps	Amps	Amps	Amps	Amps	°C	
SET111403	1000	45	33	24	150	100	25	-55 to +175	
SET111419	1000	30	24	18	150	80	15	-55 to +175	
SET111412	600	45	33	24	150	100	25	-55 to +175	
SET111404	400	45	33	24	150	80	25	-55 to +175	
SET111411	150	45	30	21	175	175	24	-55 to +150	

$R_{\theta jc} = 0.5^{\circ}C/W$

MECHANICAL



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DIM "	DIMENSIONS MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	15.2	16.0	.60	.63	-
B	10.0	10.4	.39	.41	-
C	3.68	3.94	.145	.155	-
D	3.0	3.3	.12	.13	-
E	3.3	3.8	.13	.15	-
F	5.3	6.1	.21	.24	-
G	26.9	27.2	1.06	1.07	-
H	1.8	2.3	.07	.09	-
J	3.3	4.1	.13	.16	-
K	8.1	9.7	.32	.38	-
X	1.5	2.0	.06	.08	DIA
Y	3.60	3.71	.142	.146	DIA

NOTES:
1. POSITIVE TERMINAL - RED DOT
2. NEGATIVE TERMINAL - BLACK DOT

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ELECTRICAL CHARACTERISTICS

Device Type	Maximum Leakage Current I_R @ V_{RWM}		Maximum Forward Voltage V_F @ 9A @ 25°C	Maximum Reverse Recovery Time.[1] t_{rr}
	T_j = 25 °C	T_j = 100 °C		
	µA	µA	Volts	nS
SET111403	3.0	60	1.2	2000
SET111419	3.0	75	2.2	150
SET111412	3.0	60	1.2	2000
SET111404	3.0	60	1.5	150
SET111411	30.0	1.5mA	1.1	30

[1] Measured on discrete devices prior to assembly

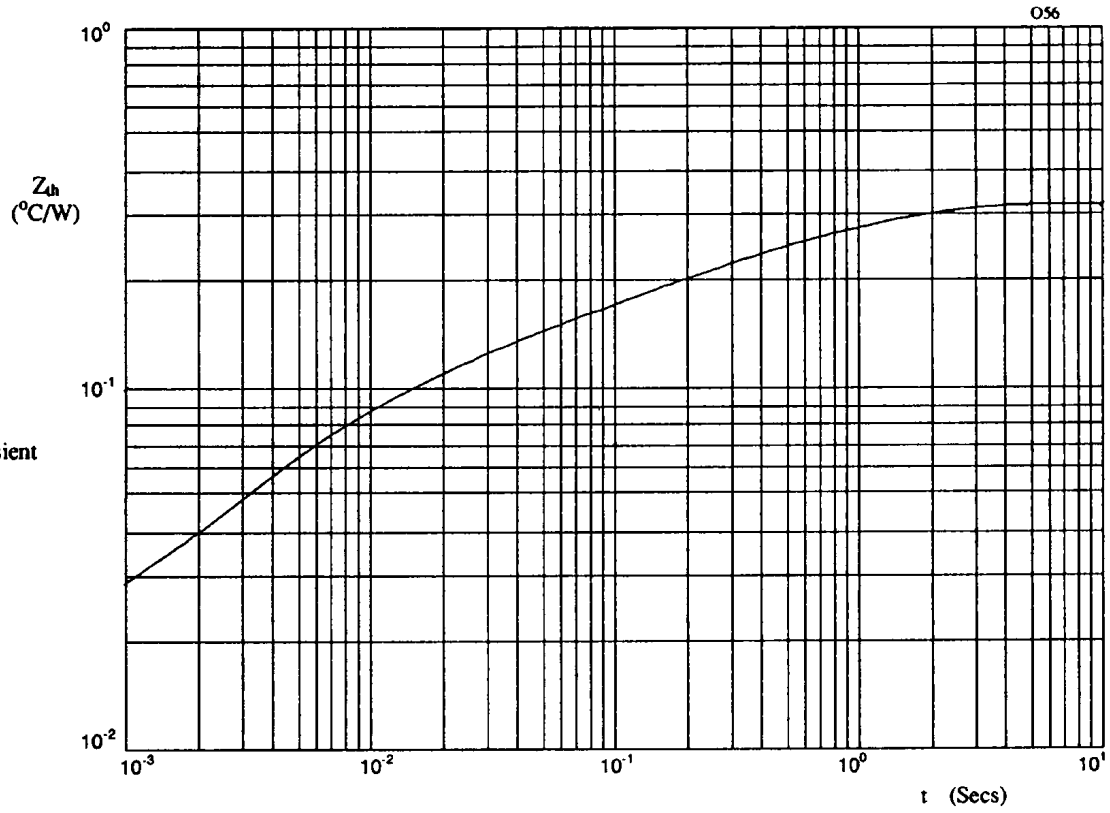

Figure 1. Typical transient thermal impedance characteristic.

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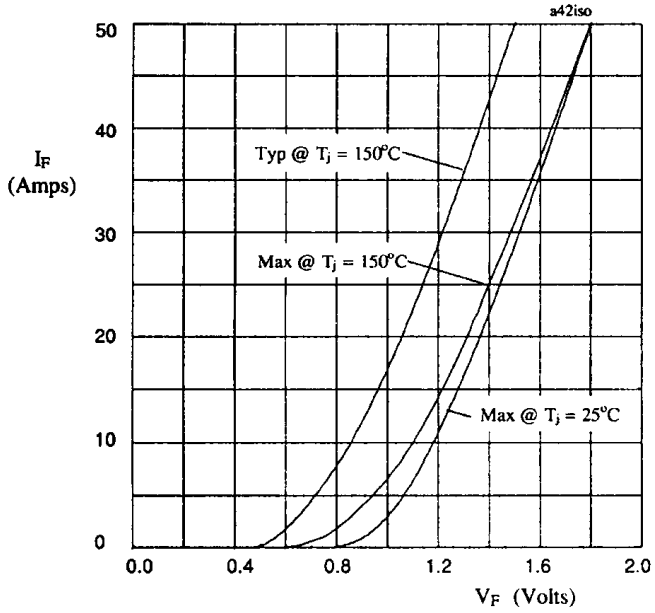

Figure 2. Forward voltage drop per leg as a function of forward current for SET111403 & SET111412.

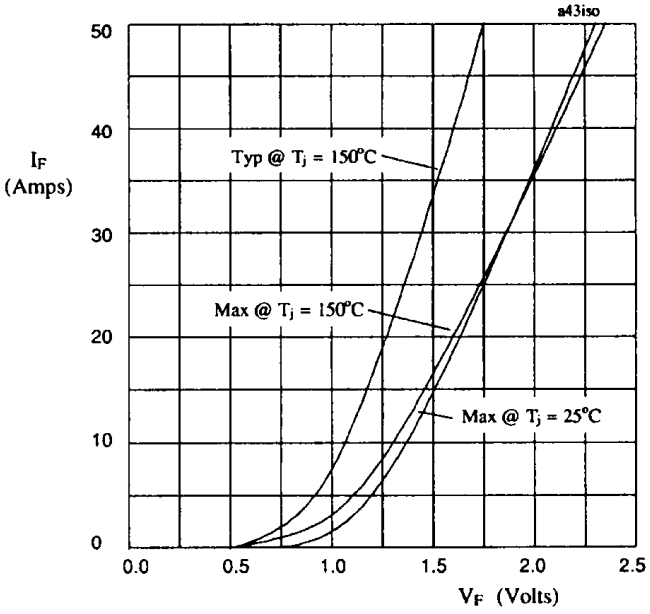

Figure 3. Forward voltage drop per leg as a function of forward current for SET111404.

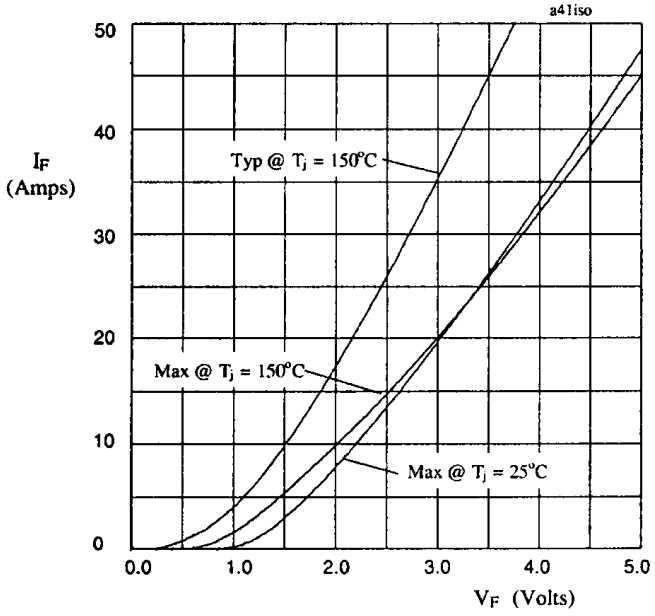

Figure 4. Forward voltage drop per leg as a function of forward current for SET111419.

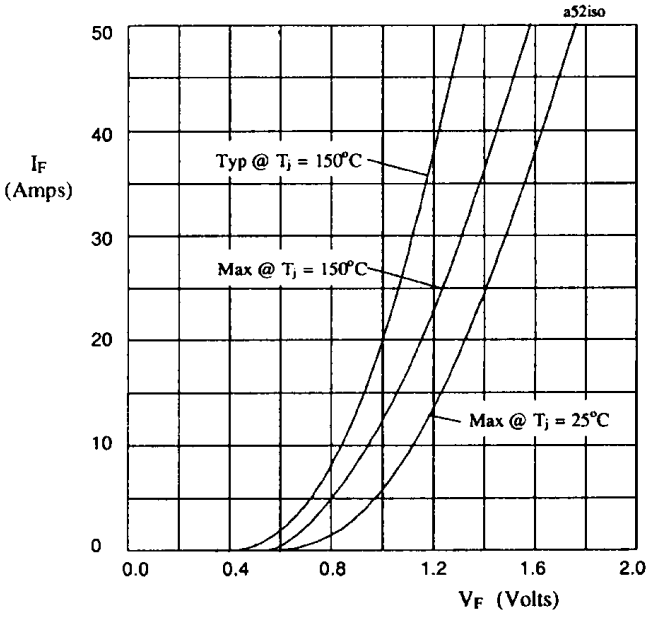

Figure 5. Forward voltage drop per leg as a function of forward current for SET111411.

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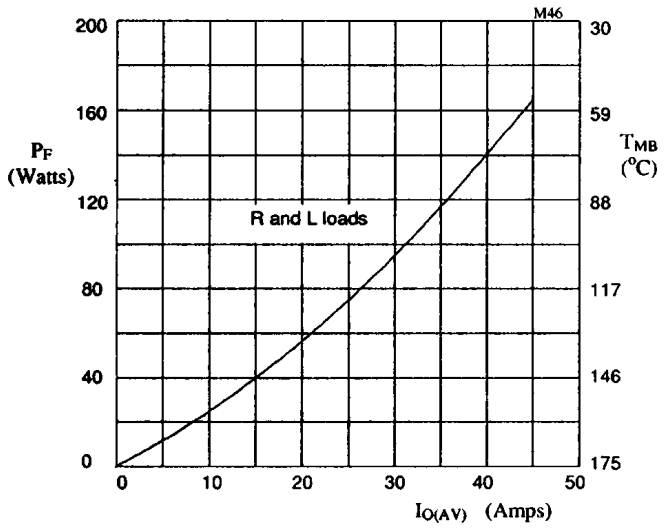

Figure 6. Forward power dissipation and maximum allowable mounting base temperature as a function of output current for sinusoidal operation, for SET111403 and SET111412.

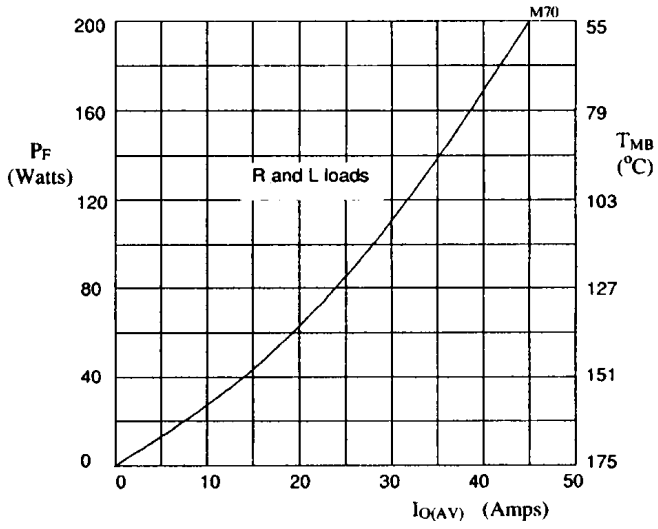

Figure 7. Forward power dissipation and maximum allowable mounting base temperature as a function of output current for sinusoidal operation, for SET111404.

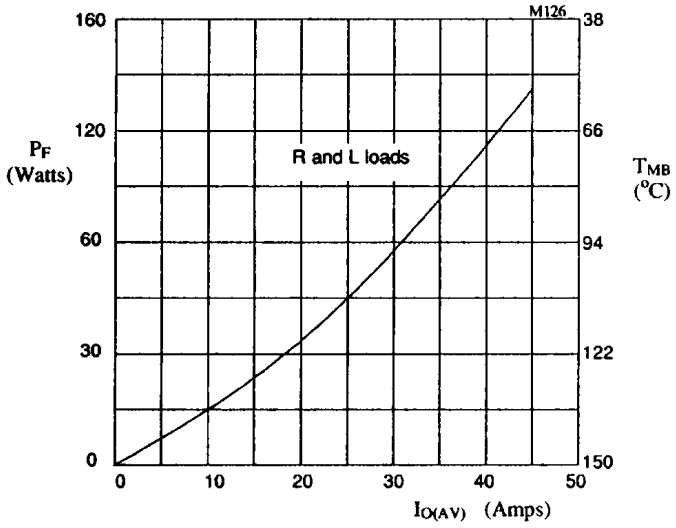

Figure 8. Forward power dissipation and maximum allowable mounting base temperature as a function of output current for sinusoidal operation, for SET111411.