

POWER DISCRETES

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 rating

Quick Reference Data

- ◆ $V_R = 150V - 1000V$
- ◆ $I_o = 45A$
- ◆ $t_{rr} = 30ns - 2\mu s$
- ◆ $I_{FSM} \geq 150A$
- ◆ Storage Temperature $-55^\circ C$ to $+175^\circ C$

ABSOLUTE MAXIMUM RATINGS

Device Type	Working Reverse Voltage (V_{RWM})	Average Rectifier Current $I_{F(AV)}$ @ T_{MB}			1 Cycle Surge Current I_{FSM} @ $t_p = 8.3ms$		Repetitive Surge (I_{FRM})	Operating Temperature Range (T_{OP})
		@55°C	@100°C	@125°C	@25°C	@100°C		
		Volts	Amps	Amps	Amps	Amps		
SET111403	1000	45	33	24	150	100	25	-55 to +150
SET111419	1000	30	24	18	150	80	15	-55 to +150
SET111412	600	45	33	24	150	100	25	-55 to +150
SET111424	600	33	23	14	150	70	15	-55 to +150
SET111404	400	45	33	24	150	80	25	-55 to +150
SET111411	150	45	30	21	175	175	24	-55 to +150

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

ELECTRICAL CHARACTERISTICS

Device Type	Maximum Leakage Current I_R @ V_{RWM}		Maximum Forward Voltage V_F @ 9A	Maximum Recovery Time (t_{rr}) ¹
	$T_J = 25^\circ C$	$T_J = 100^\circ C$	@25°C	
	μA	μA	Volts	
SET111403	3.0	60	1.2	2000
SET111419	3.0	75	2.2	150
SET111412	3.0	60	1.2	2000
SET111424	10.0	500	1.6	50
SET111404	3.0	60	1.5	150
SET111411	30.0	1.5mA	1.1	30

¹ Measured on discrete devices prior to assembly

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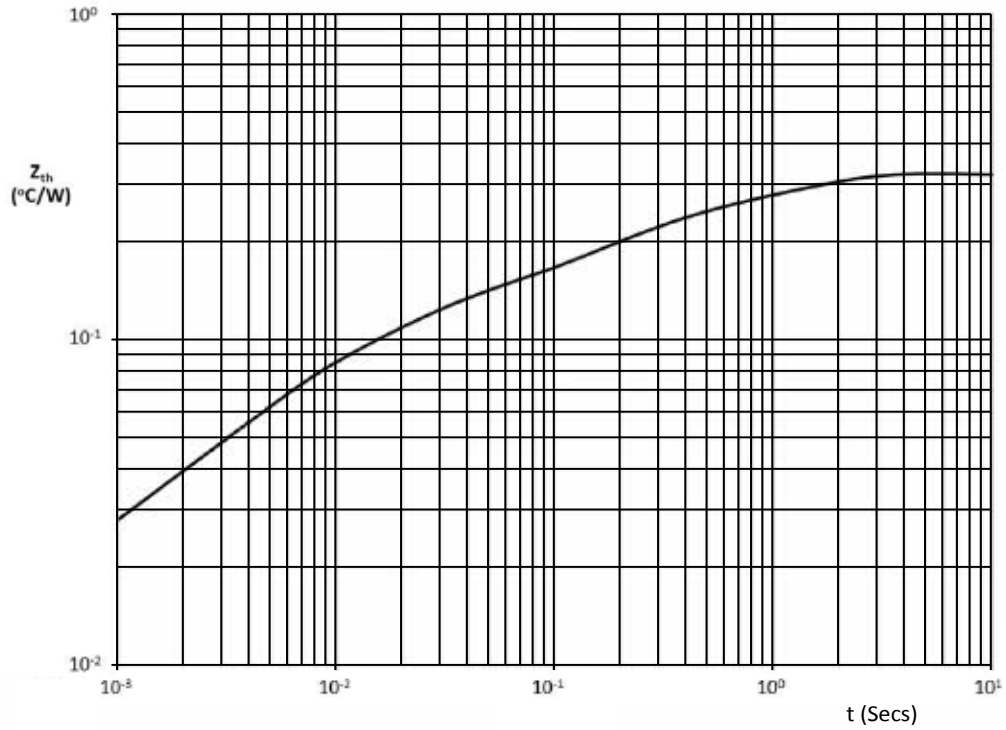


Figure 1. Typical transient thermal impedance characteristic.

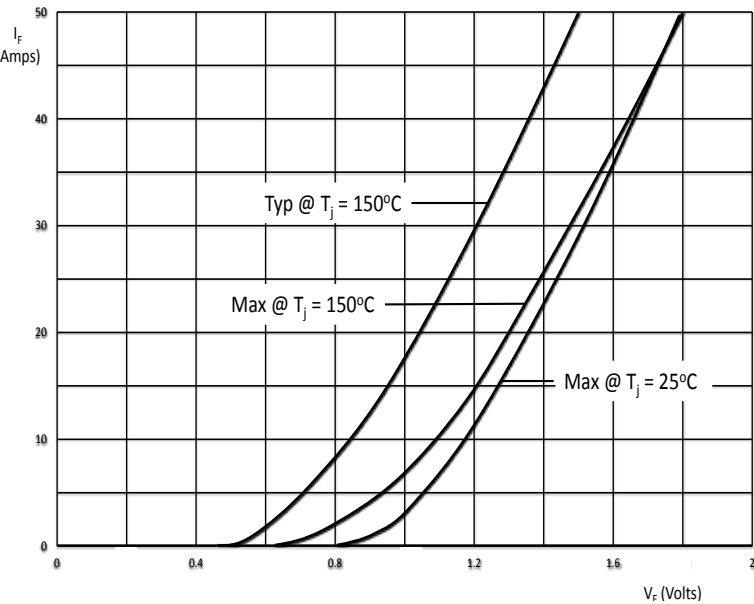


Figure 2. Forward voltage drop per leg as a function of forward current for SET111403 and SET111412

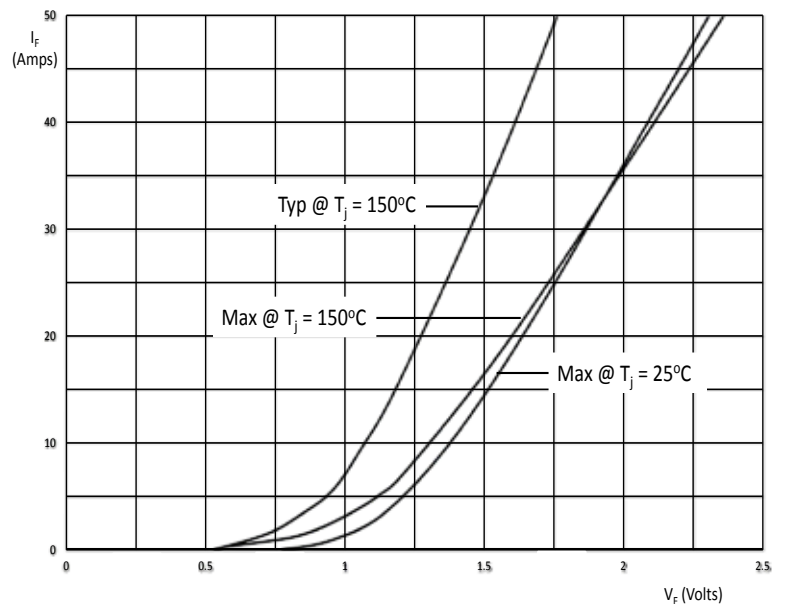


Figure 3. Forward voltage drop per leg as a function of forward current for SET111404

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Outline Drawing

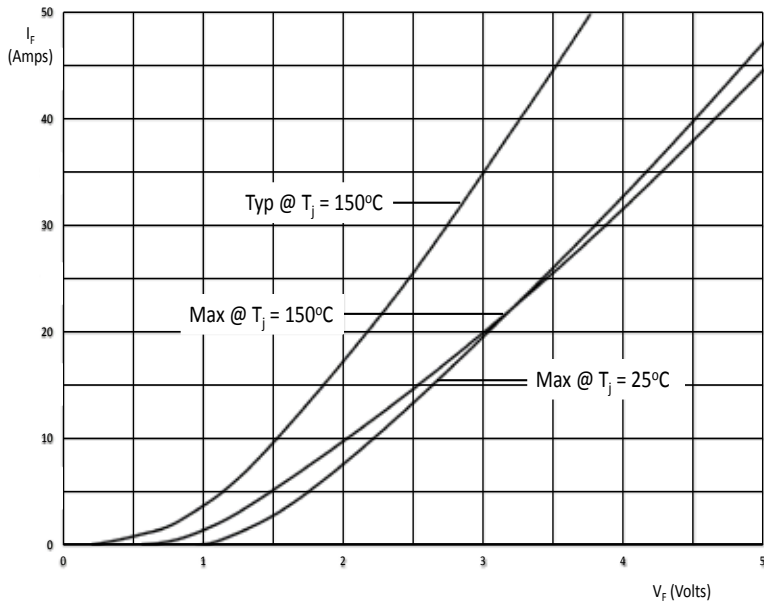


Figure 4. Forward voltage drop per leg as a function of forward current for SET111419

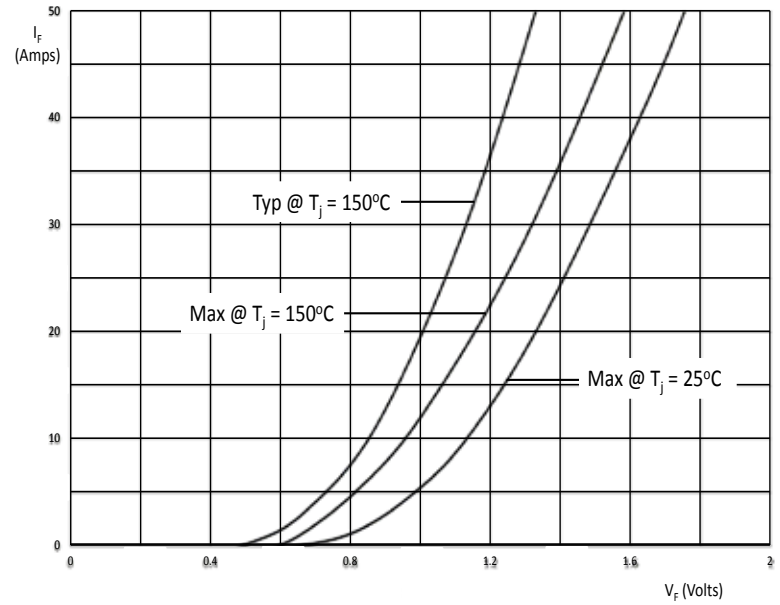


Figure 5. Forward voltage drop per leg as a function of forward current for SET111411

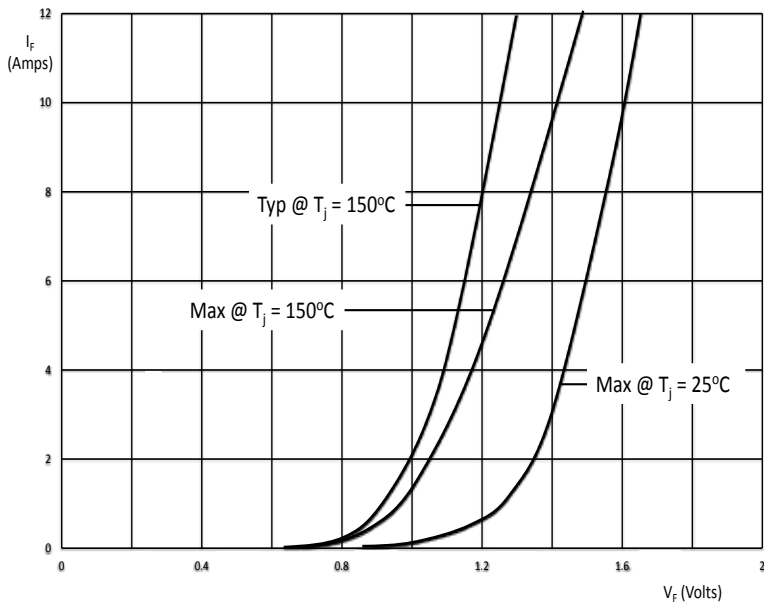


Figure 6. Forward voltage drop per leg as a function of forward current for SET111424

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Outline Drawing

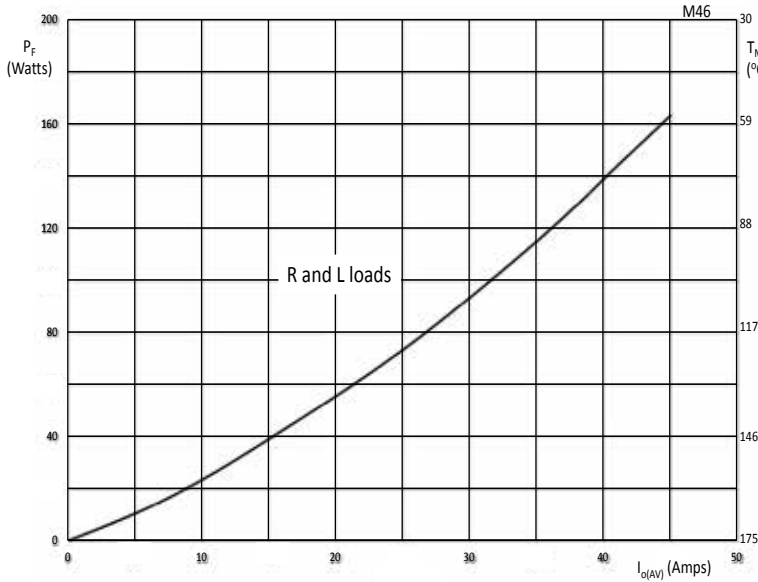


Figure 7. Forward power dissipation and maximum allowable mounting base temperature as a function of output for sinusoidal operation for SET11403 and SET11412

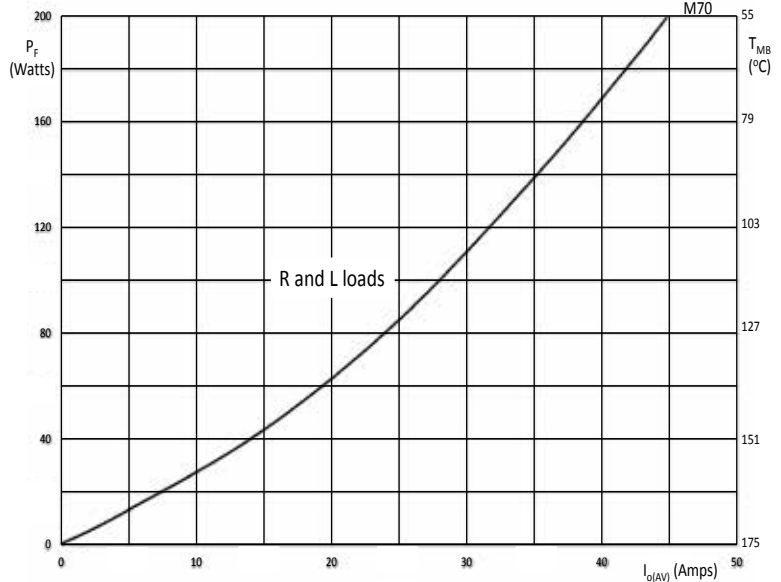


Figure 8. Forward power dissipation and maximum allowable mounting base temperature as a function of output for sinusoidal operation. for SET11404

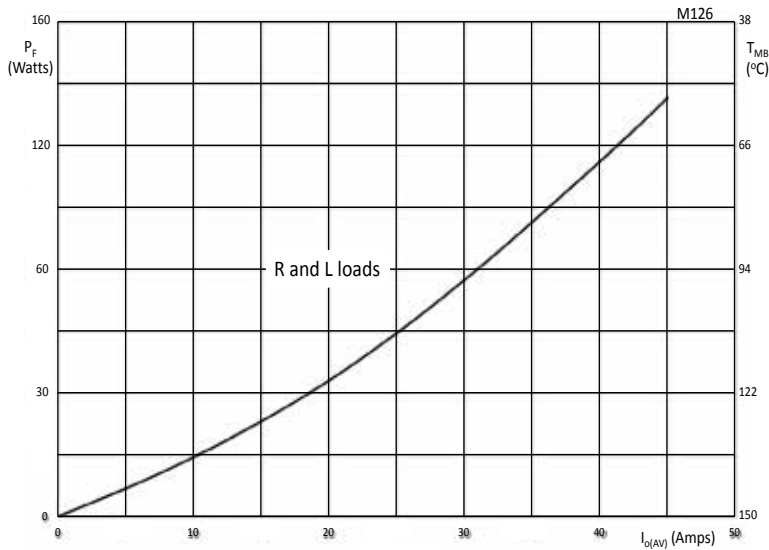
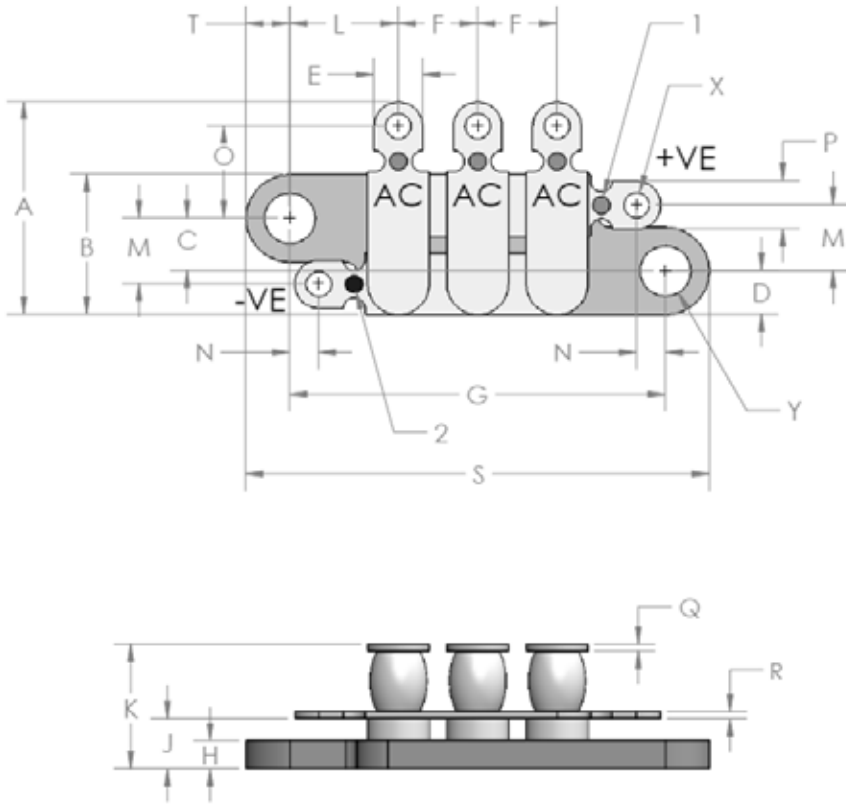


Figure 9. Forward power dissipation and maximum allowable mounting base temperature as a function of output for sinusoidal operation for SET11411

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MECHANICAL



DIM	DIMENSIONS				NOTE
	MM		INCHES		
	MIN	MAX	MIN	MAX	
A	15.2	16.0	0.60	0.63	
B	10.0	10.4	0.39	0.41	
C	3.68	3.94			
D	3.0	3.3	0.12	0.13	
E	3.3	3.8	0.13	0.15	
F	5.3	6.1	0.21	0.24	
G	26.9	27.2	1.06	1.07	
H	1.8	2.3	0.07	0.09	
J	3.3	4.1	0.13	0.16	
K	8.1	9.7	0.32	0.38	
L	11.4	13.0	0.29	0.33	
M	6.6	8.0	0.17	0.21	
N	2.6	3.9		0.10	
O	9.8	10.2	0.25	0.26	
P	5.23	5.62		0.143	
Q	0.59	1.0			
R	0.59	1.0			
S	51.37	52.16	1.31	1.33	
T	4.52	5.31			
X	1.5	2.0	0.06	0.08	DIA
Y	3.60	3.71		0.146	DIA

NOTES:

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