

January 29, 1998

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### HIGH CURRENT, HIGH DENSITY, ISOLATED, SILICON POWER RECTIFIER DO5 STUD

### QUICK REFERENCE DATA

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

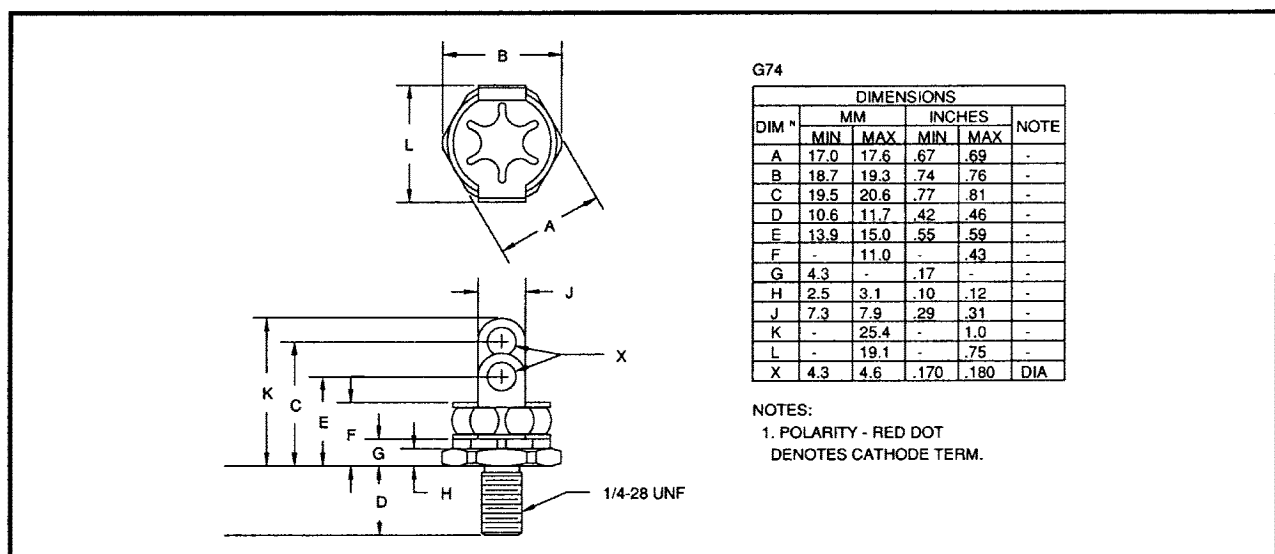
- $V_R = 150V - 1000V$
- $I_F = 90A$
- $t_{rr} = 30nS - 2\mu S$
- $I_{FSM} \geq 750A$

### ABSOLUTE MAXIMUM RATINGS

Device Type	Working Reverse Voltage ( $V_{RWM}$ ) Volts	Average Rectified Current ( $I_{F(AV)}$ ) @ $T_{mb}$			1 Cycle Surge $I_{FSM}$ $t_p = 8.3mS$		Repetitive Surge ( $I_{FRM}$ ) Amps	Operating & Storage Temperature Range ( $T_{OP}$ ) ( $T_{STG}$ ) °C
		@ 55°C	100°C	125°C	@ 25 °C	@ 100°C		
		Amps	Amps	Amps	Amps	Amps		
SET100203	1000	90	66	48	750	600	150	-55 to +175
SET100219	1000	60	48	36	750	480	90	-55 to +175
SET100212	600	90	66	48	750	600	150	-55 to +175
SET100204	400	90	66	48	750	600	150	-55 to +175
SET100211	150	90	60	42	870	750	144	-55 to +150

$R_{\theta JMB} = 0.5^{\circ}C/W$  for all varieties, other configurations available see next page for details

### MECHANICAL



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**ELECTRICAL CHARACTERISTICS**

Device Type	Maximum Leakage Current @ $V_{RWM}$		Maximum Forward Voltage @ 54.0 A	Maximum Reverse Recovery Time
	$T_j = 25^\circ\text{C}$	$T_j = 100^\circ\text{C}$		
	$\mu\text{A}$	$\mu\text{A}$	Volts	nS
SET100203	6.0	120	1.2	2000
SET100219	6.0	150	2.2	150
SET100212	6.0	120	1.2	2000
SET100204	6.0	120	1.5	150
SET100211	60.0	3mA	1.1	30

**OTHER CONFIGURATIONS**

The Part Numbers Shown in this data Sheet are Isolated with the cathode at the stud end of the device. Part numbers for other configurations are shown below:

Isolated Cathode to Stud	Isolated Anode to Stud	Non-Isolated Cathode to Stud	Non-Isolated Anode to Stud
SET100203	SET100403	SET100103	SET100303
SET100219	SET100419	SET100119	SET100319
SET100212	SET100412	SET100112	SET100312
SET100204	SET100404	SET100104	SET100304
SET100211	SET100411	SET100111	SET100311

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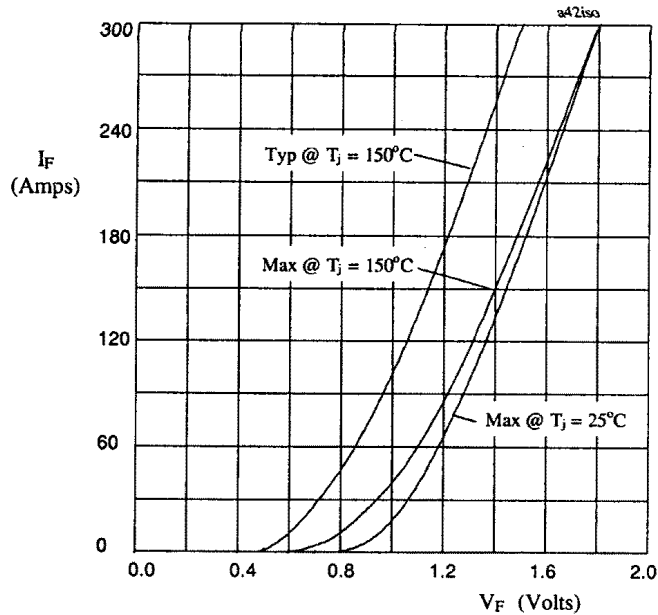


Figure 1. Forward voltage drop as a function of forward current for SET10\*\*03 & SET10\*\*12.

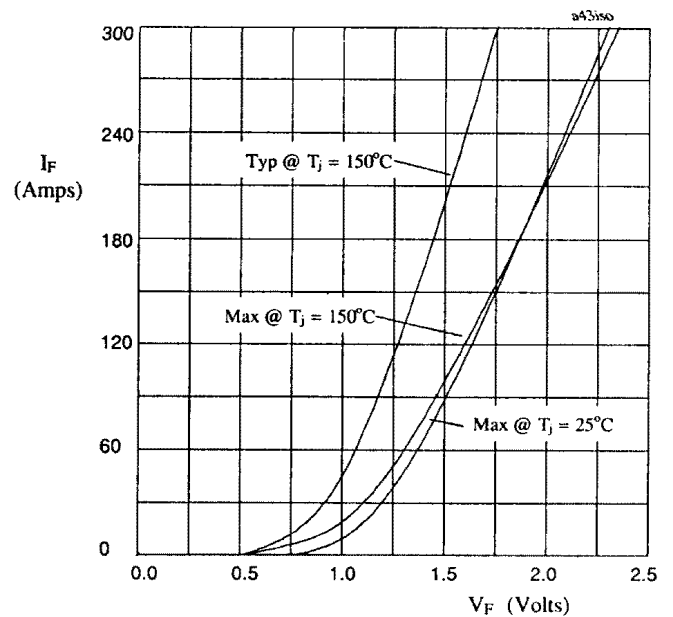


Figure 2. Forward voltage drop as a function of forward current for SET10\*\*04.

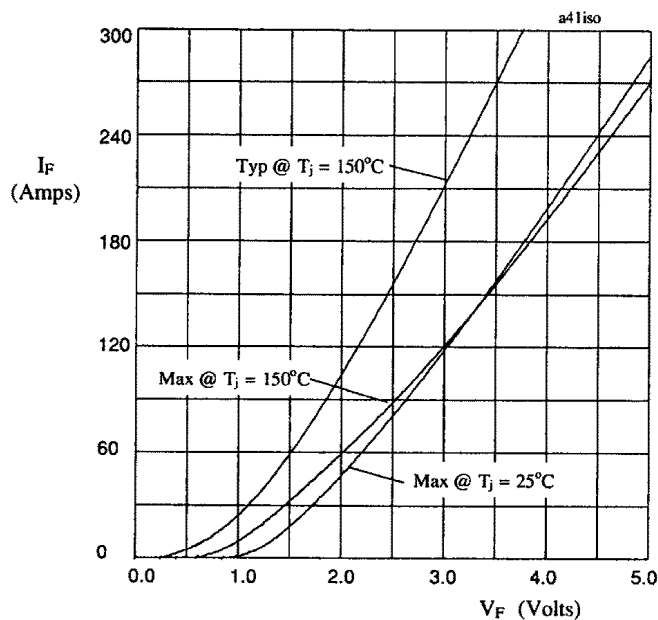


Figure 3. Forward voltage drop as a function of forward current for SET10\*\*19.

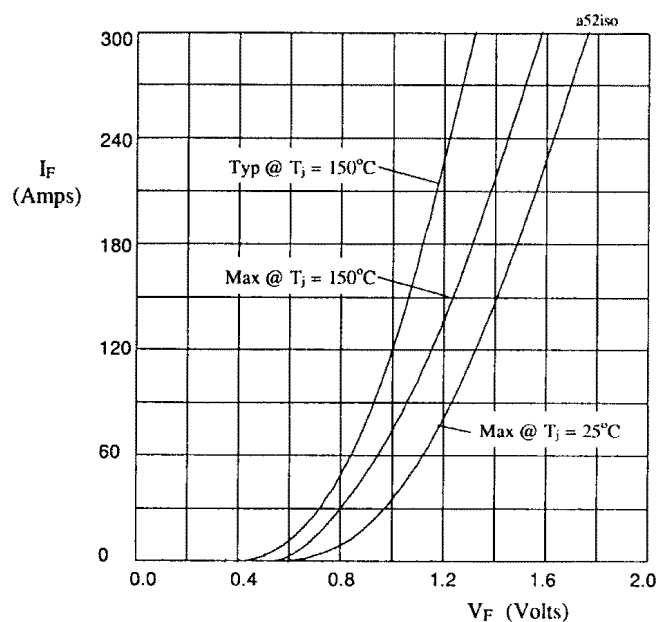


Figure 4. Forward voltage drop as a function of forward current for SET10\*\*11.

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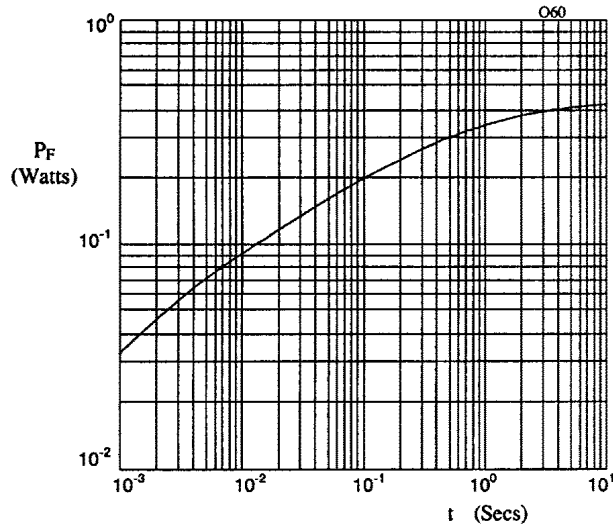


Figure 5. Typical transient thermal impedance characteristic.

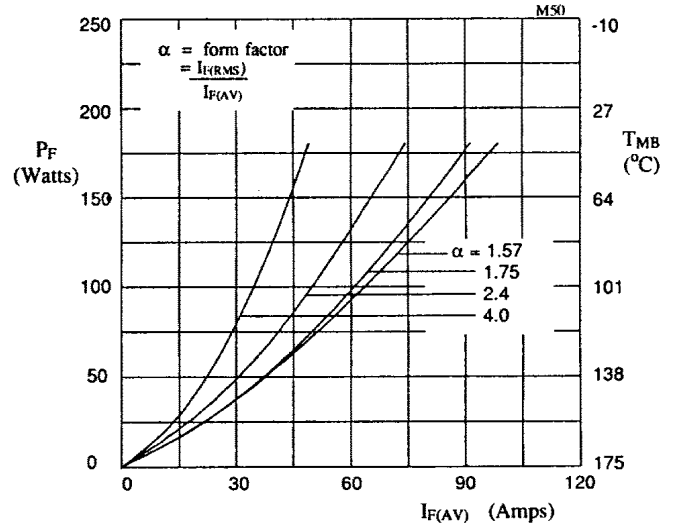


Figure 6. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for sinusoidal operation, for SET10\*\*03 and SET10\*\*12.

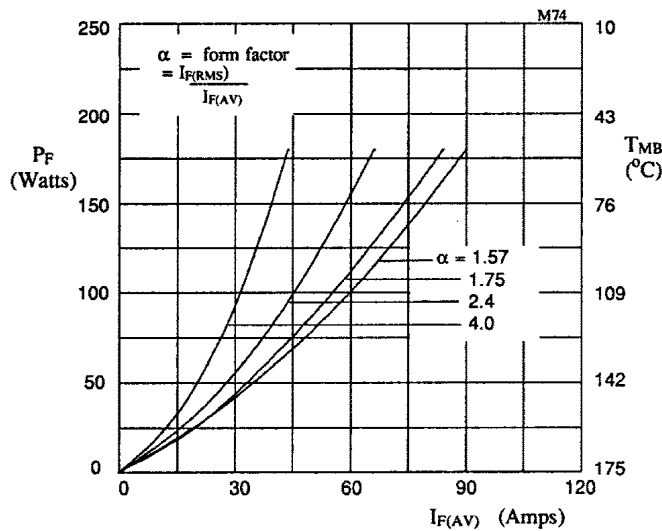


Figure 7. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for sinusoidal operation, for SET10\*\*04.

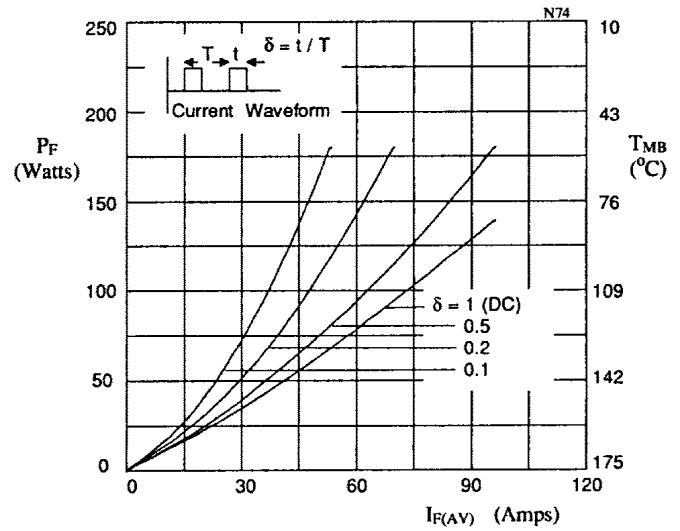


Figure 8. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for square wave operation, for SET10\*\*04

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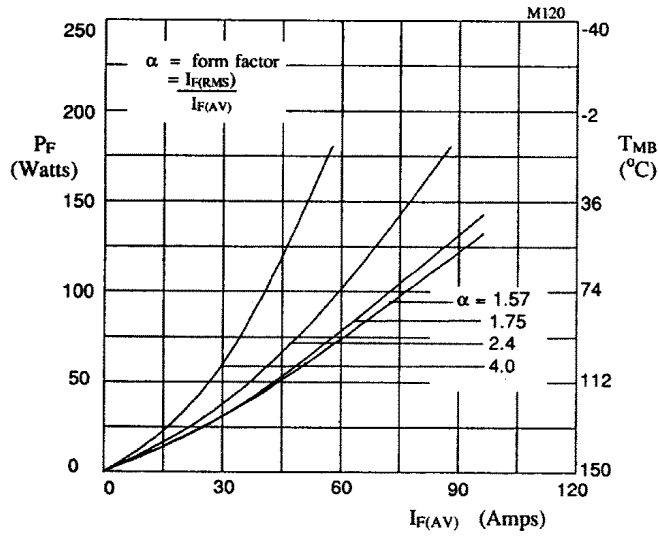


Figure 9. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for sinusoidal operation, for SET10\*\*11.

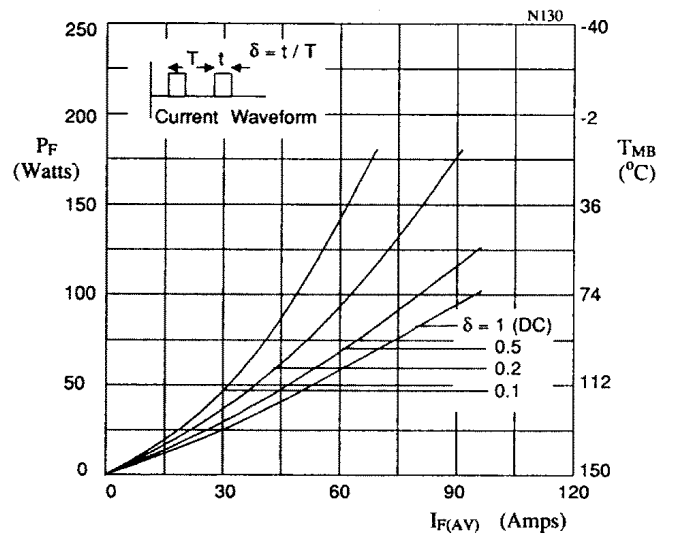


Figure 10. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for square wave operation, for SET10\*\*11.