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SET040219

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DO4 STUD HIGH CURRENT ISOLATED RECTIFIER ASSEMBLY

SET040203
SET040219
SET040212
SET040204
SET040211

January 29, 1998

TEL:805-498-2111 FAX:805-498-3804 WEB:http://www.semtech.com

HIGH CURRENT, HIGH DENSITY, ISOLATED, SILICON POWER RECTIFIER DO4 STUD

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

QUICK REFERENCE DATA

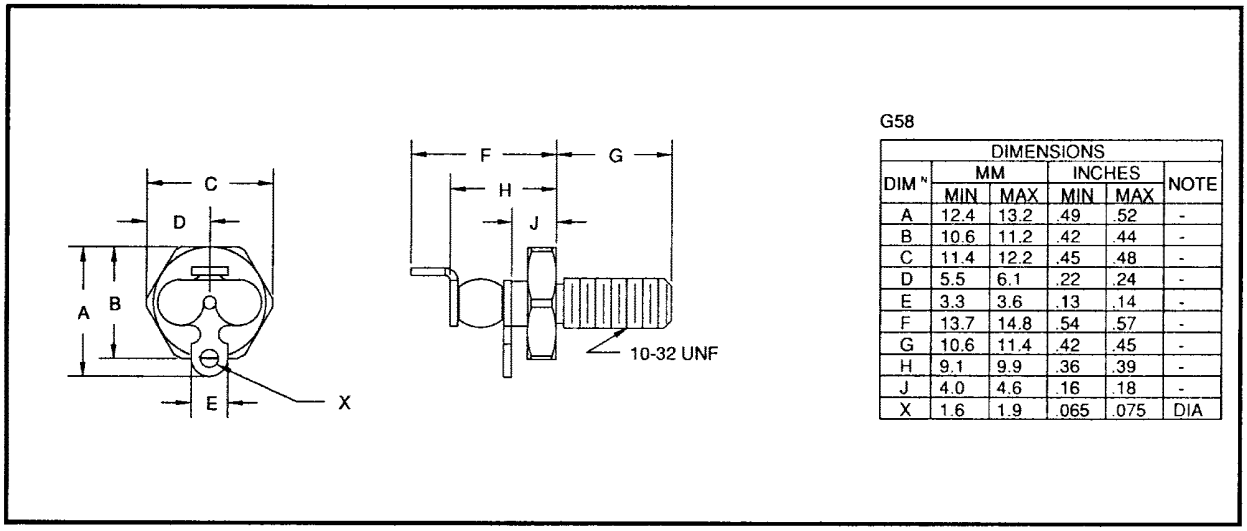
- V_R= 150V - 1000V
- I_F = 30A
- t_{rr} = 30nS - 2µS
- I_{FSM}≥ 250A

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	
SET040203	1000	30	22	16	250	200	50	-55 to +175	
SET040219	1000	20	16	12	250	160	30	-55 to +175	
SET040212	600	30	22	16	250	200	50	-55 to +175	
SET040204	400	30	22	16	250	160	50	-55 to +175	
SET040211	150	30	20	14	290	250	48	-55 to +150	

$R_{\theta JMB}$ = 1.5°C/W for all varieties, other configurations available see next page for details

MECHANICAL



G58

DIM	DIMENSIONS MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	12.4	13.2	.49	.52	-
B	10.6	11.2	.42	.44	-
C	11.4	12.2	.45	.48	-
D	5.5	6.1	.22	.24	-
E	3.3	3.6	.13	.14	-
F	13.7	14.8	.54	.57	-
G	10.6	11.4	.42	.45	-
H	9.1	9.9	.36	.39	-
J	4.0	4.6	.16	.18	-
X	1.6	1.9	.065	.075	DIA

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ELECTRICAL CHARACTERISTICS

Device Type	Maximum Leakage Current @ V_{RWM}		Maximum Forward Voltage @ 18.0A	Maximum Reverse Recovery Time
	T_j = 25 °C	T_j = 100 °C		
	µA	µA	Volts	nS
SET040203	2.0	40	1.2	2000
SET040219	2.0	50	2.2	150
SET040212	2.0	40	1.2	2000
SET040204	2.0	40	1.5	150
SET040211	20.0	1.0mA	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
SET040203	SET040403	SET040103	SET040303
SET040219	SET040419	SET040119	SET040319
SET040212	SET040412	SET040112	SET040312
SET040204	SET040404	SET040104	SET040304
SET040211	SET040411	SET040111	SET040311

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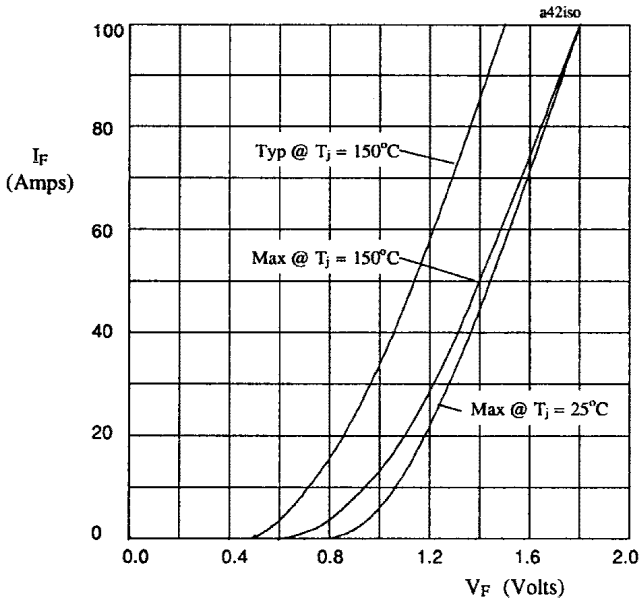

Figure 1. Forward voltage drop as a function of forward current for SET04**03 & SET04**12.

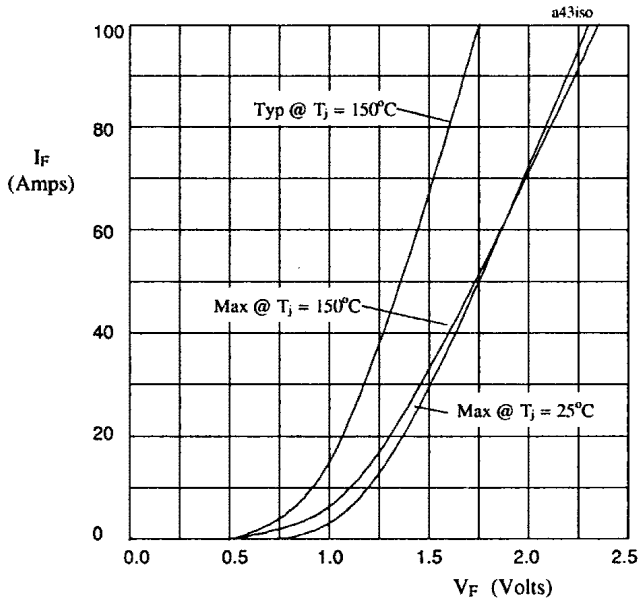

Figure 2. Forward voltage drop as a function of forward current for SET04**04.

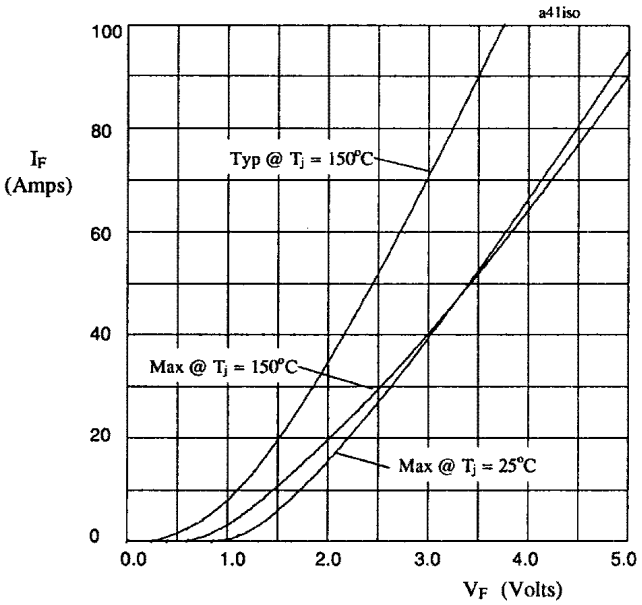

Figure 3. Forward voltage drop as a function of forward current for SET04**19.

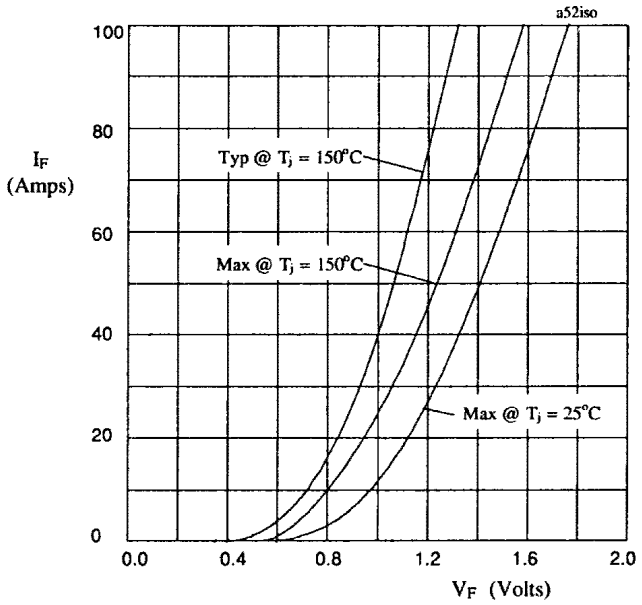

Figure 4. Forward voltage drop as a function of forward current for SET04**11.

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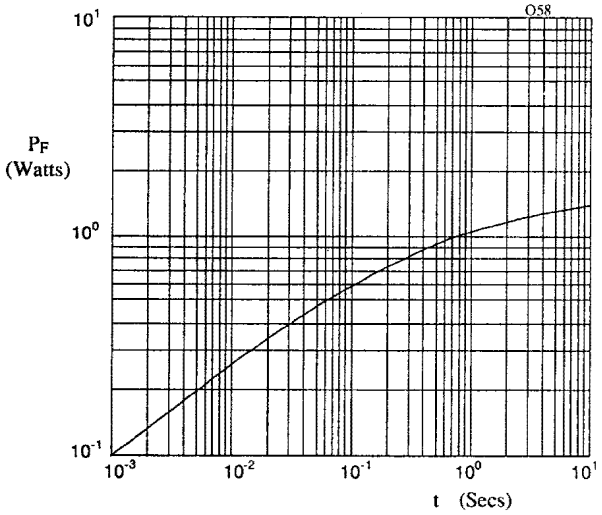

Figure 5. Typical transient thermal impedance characteristic.

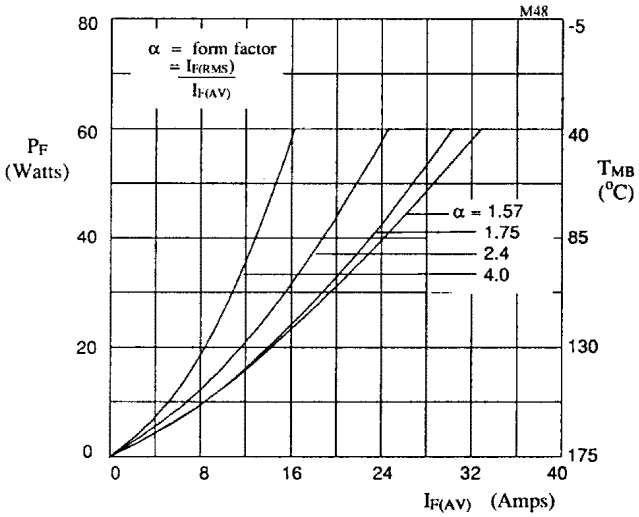

Figure 6. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for sinusoidal operation, for SET04**03 and SET04**12.

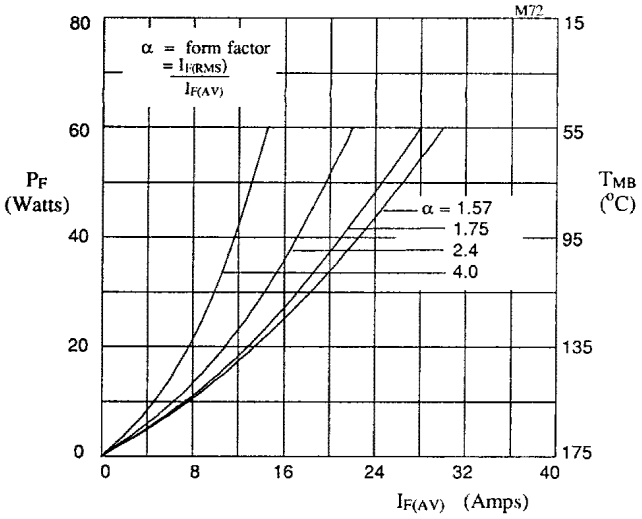

Figure 7. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for sinusoidal operation, for SET04**04.

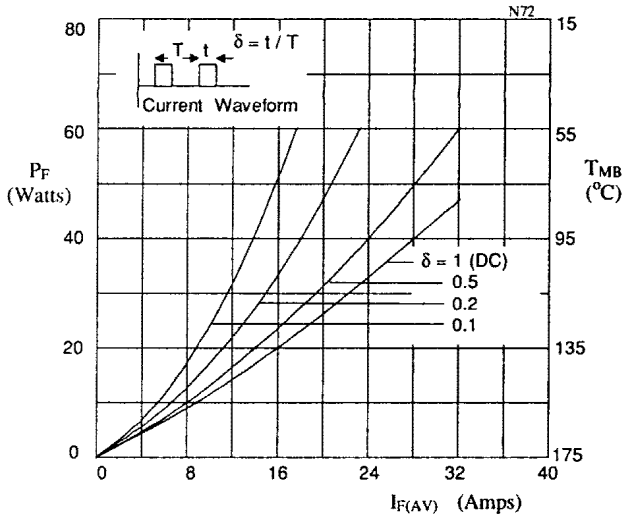

Figure 8. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for square wave operation, for SET04**04

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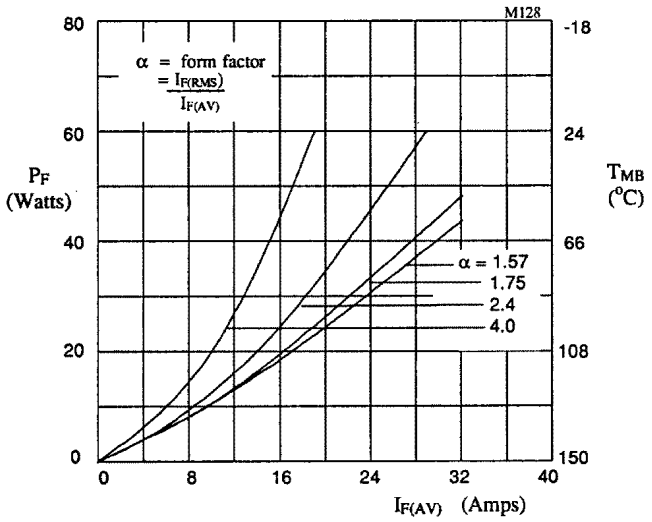

Figure 9. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for sinusoidal operation, for SET04**11.

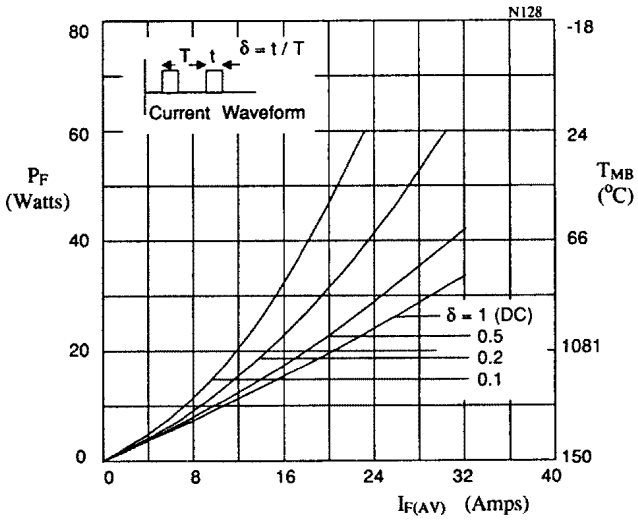

Figure 10. Forward power dissipation and maximum allowable mounting base temperature as a function of forward current for square wave operation, for SET04**11.