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SEMTECH

STANDARD RECOVERY HIGH CURRENT RECTIFIER ASSEMBLY

SCSM05
SCSM1 SCSM2
SCSM4 SCSM6
SCSM8 SCSM0

December 22, 1997

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

HIGH CURRENT, HIGH DENSITY, STANDARD RECOVERY SILICON POWER RECTIFIER STUD

- Low thermal impedance
- Low forward voltage drop
- High current applications
- Low reverse leakage current
- High surge ratings

QUICK REFERENCE DATA

- V_R = 50V - 1000V
- I_F = 150A
- I_R = 12.0µA
- I_{FSM} = 1800A

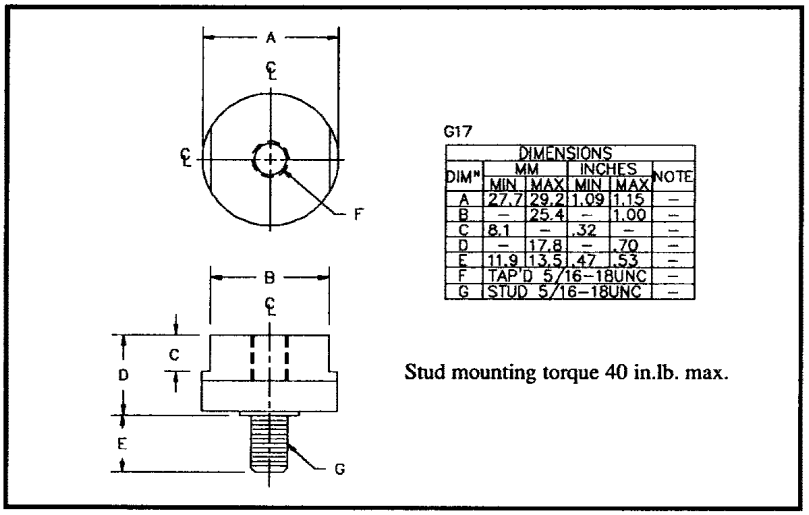
ABSOLUTE MAXIMUM RATINGS

Device Type *	Working Reverse Voltage (V_{RWM})	Average Rectified Current $I_{F(AV)}$					1 Cycle Surge Current I_{FSM} t_p = 8.3mS		Repetitive Surge Current I_{FRM}
		insert mounting			stud mounting	stud + insert mounting			
		@ 25°C	@ 55°C	@ 100°C	@ 55°C	@ 55°C	@ 25°C	@ 100°C	@ 25°C
	Volts	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps
SCSM05	50	↑	↑	↑	↑	↑	↑	↑	↑
SCSM1	100								
SCSM2	200								
SCSM4	400	150	110	70	95	175	1800	840	250
SCSM6	600								
SCSM8	800								
SCSM0	1000	↓	↓	↓	↓	↓	↓	↓	↓

Normal polarity is cathode to stud

* add suffix "R" to part number for reverse polarity

MECHANICAL



G17

DIM*	DIMENSIONS MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	27.7	29.2	1.09	1.15	–
B	–	25.4	–	1.00	–
C	8.1	–	.32	–	–
D	–	17.8	–	.70	–
E	11.9	13.5	.47	.53	–
F	TAP'D 5/16-18UNC				–
G	STUD 5/16-18UNC				–

Stud mounting torque 40 in.lb. max.

Maximum thermal impedances

Stud mounted $R_{\theta JC}$ < 0.67°C/W
Insert mounted $R_{\theta JC}$ < 0.5°C/W
Stud + insert mtd $R_{\theta JC}$ < 0.28°C/W

652 MITCHELL ROAD NEWBURY PARK CA 91320

December 22, 1997

ELECTRICAL CHARACTERISTICS

Device Type	Maximum Reverse Leakage Current I_R @ V_{RWM}		Forward Voltage V_F @ 100A.	Reverse Recovery Time [1]
	@ 25 °C	@ 100 °C	Max @ 25°C	max @ 25 °C
	µA	µA	Volts	µS
SCSM05 SCSM1 SCSM2 SCSM4 SCSM6 SCSM8 SCSM0	12.0	400	1.15	2.0

1) Measured on discrete devices prior to assembly.

Operating temperature range -55 °C to +150 °C
Storage temperature range -55 °C to +150 °C

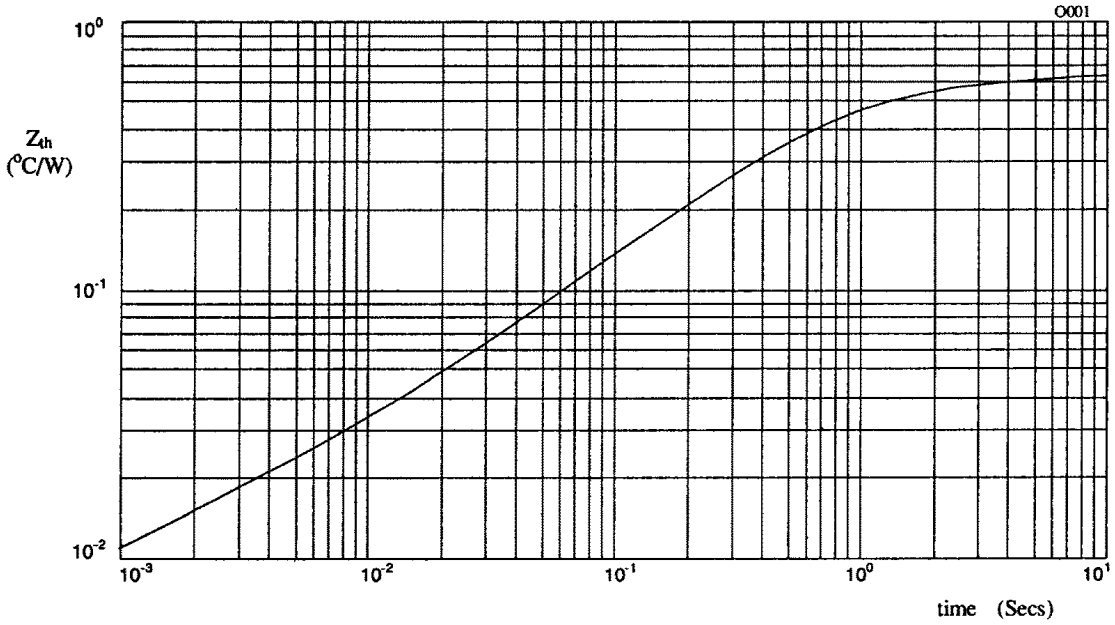


Figure 1. Transient thermal impedance characteristic when stud mounted.

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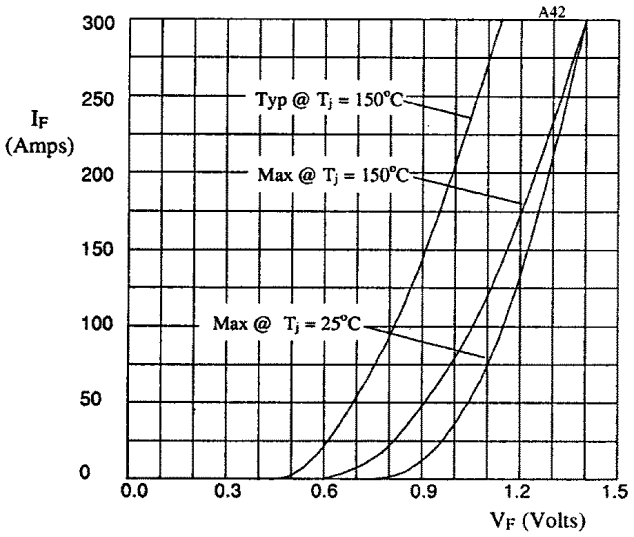

Fig 2. Forward voltage drop as a function of forward current.

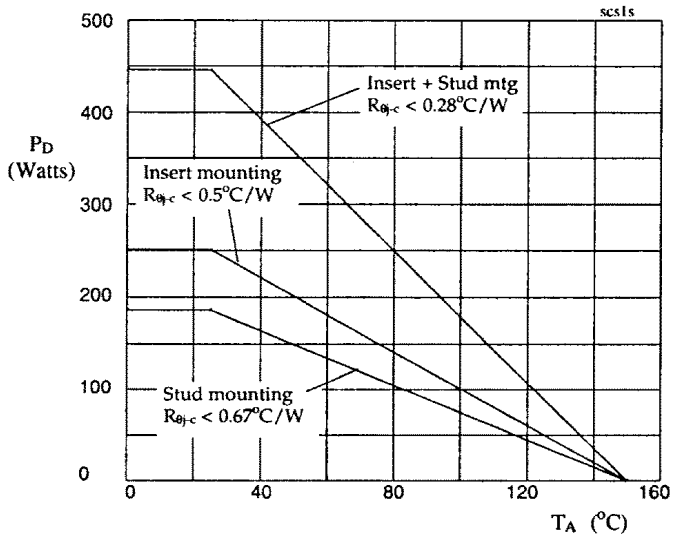

Fig 3. Power dissipation as a function of ambient temperature for different mountings.

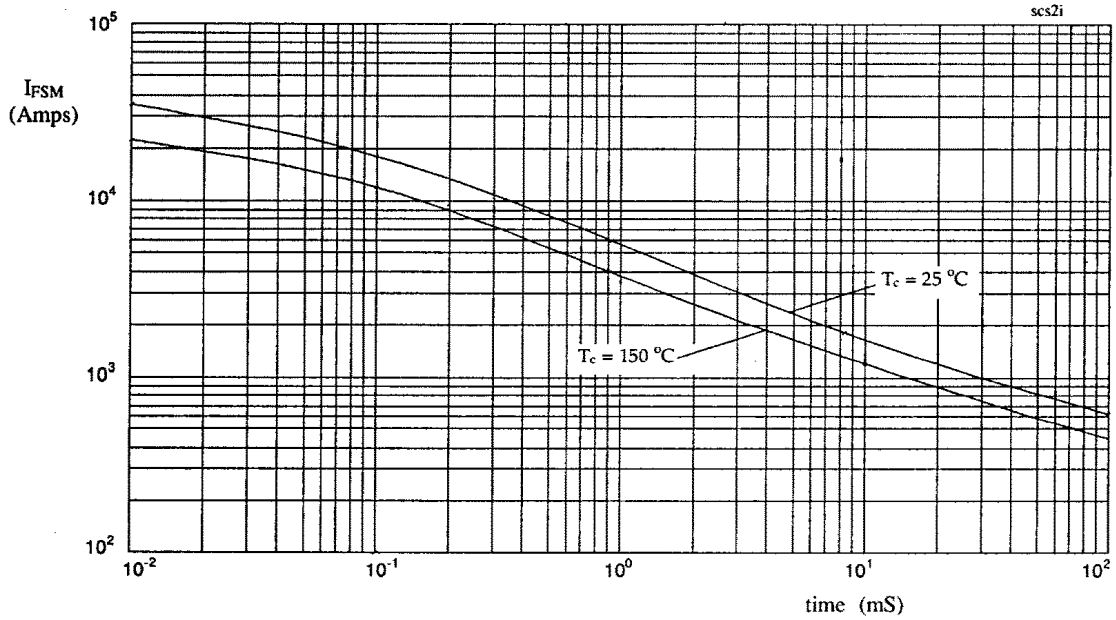

Figure 4. Maximum non-repetitive surge current against pulse width.