

December 22, 1997

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

### QUICK REFERENCE DATA

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

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

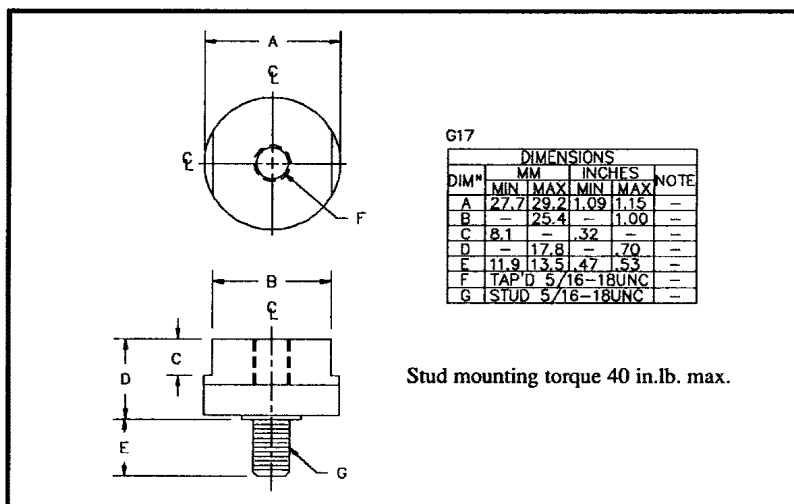
### ABSOLUTE MAXIMUM RATINGS

Device Type *	Working Reverse Voltage (V <sub>RWM</sub> )	Average Rectified Current I <sub>F(AV)</sub>					1 Cycle Surge Current I <sub>FSM</sub> t <sub>p</sub> = 8.3mS		Repetitive Surge Current I <sub>FRM</sub>
		insert mounting			stud mounting	stud + insert mounting	@ 25 °C	@ 100 °C	@ 25 °C
		@ 25 °C	@ 55 °C	@ 100 °C	@ 55 °C	@ 55 °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



### Maximum thermal impedances

Stud mounted  $R_{\theta JC} < 0.67^{\circ}C/W$

Insert mounted  $R_{\theta JC} < 0.5^{\circ}C/W$

Stud + insert mtd  $R_{\theta JC} < 0.28^{\circ}C/W$

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### ELECTRICAL CHARACTERISTICS

Device Type	Maximum Reverse Leakage Current $I_R @ V_{RWM}$		Forward Voltage $V_F @ 100A.$	Reverse Recovery Time <sup>(1)</sup>
	@ 25 °C	@ 100 °C	Max @ 25°C	max @ 25 °C
	$\mu A$	$\mu A$	Volts	$\mu S$
SCSM05	12.0	400	1.15	2.0
SCSM1				
SCSM2				
SCSM4				
SCSM6				
SCSM8				
SCSM0				

1) Measured on discrete devices prior to assembly.

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

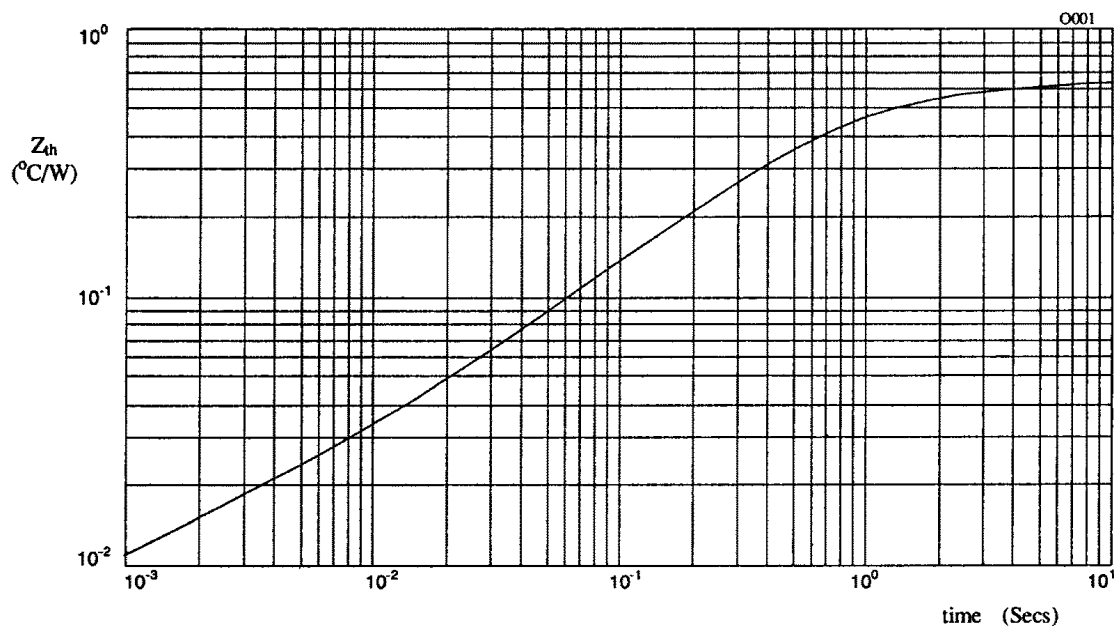


Figure 1. Transient thermal impedance characteristic when stud mounted.

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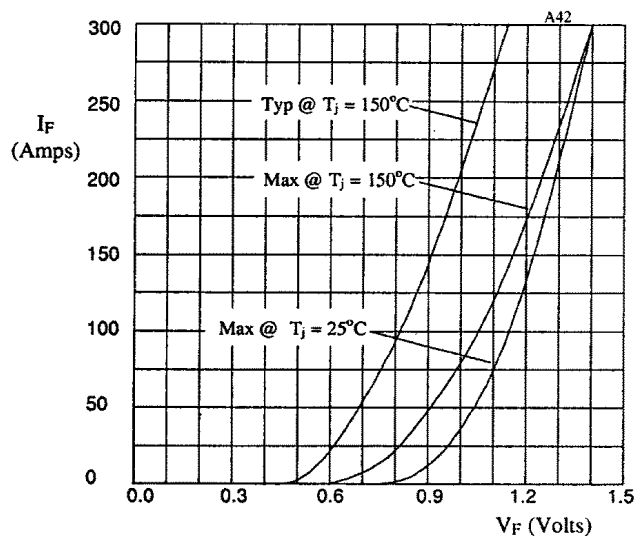


Fig 2. Forward voltage drop as a function of forward current.

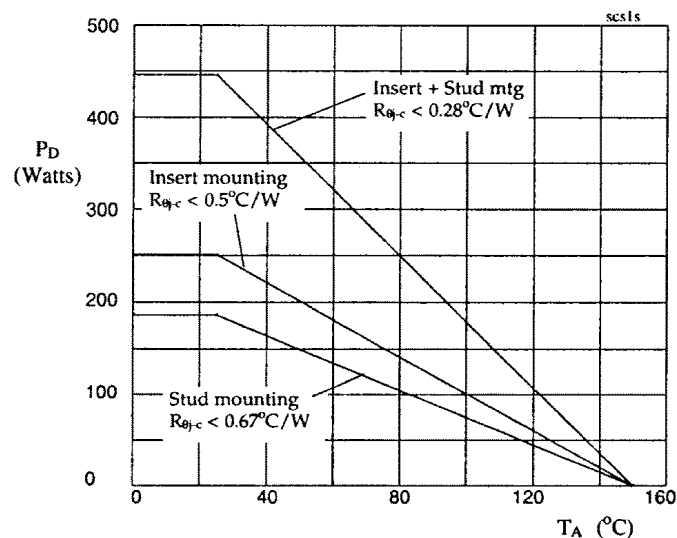


Fig 3. Power dissipation as a function of ambient temperature for different mountings.

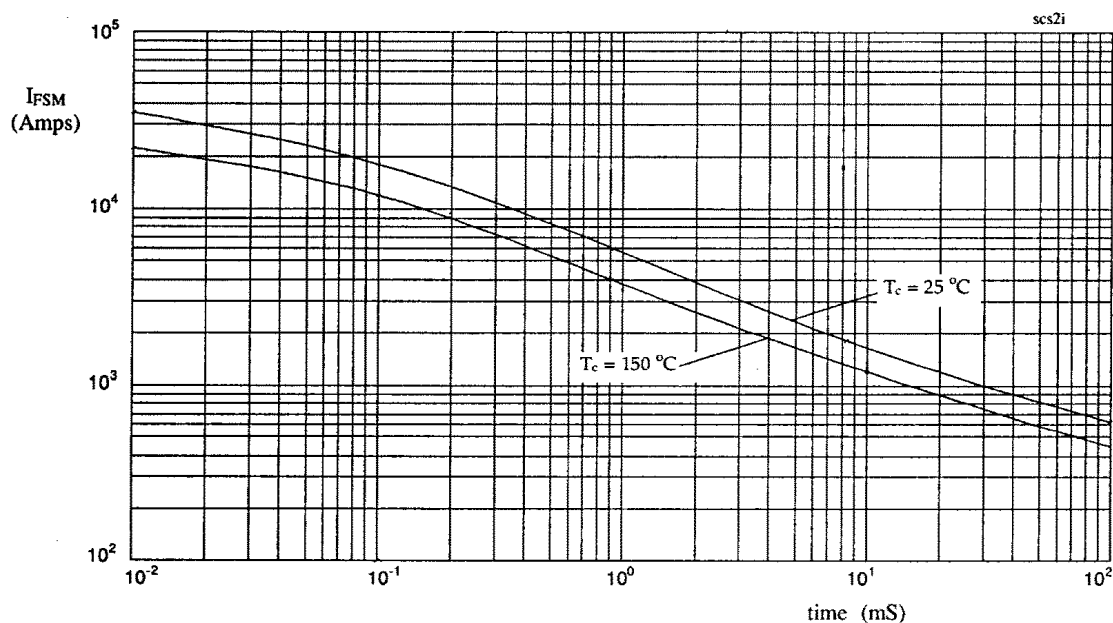


Figure 4. Maximum non-repetitive surge current against pulse width.

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