January 8, 1998

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

HIGH VOLTAGE, HIGH DENSITY, FAST RECOVERY LEADED SILICON RECTIFIER ASSEMBLY

- Low reverse recovery time
- Low forward voltage drop
- High thermal shock resistance
- Corona free construction
- Low distributed capacitance

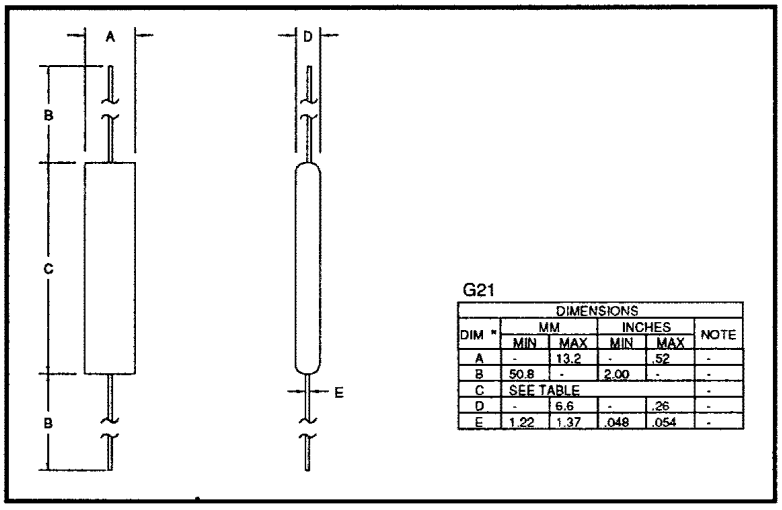
QUICK REFERENCE DATA

- V_R = 2500V - 12500V
- I_F = 0.5A
- I_R = 1.0 µA
- t_{rr} = 150nS

ABSOLUTE MAXIMUM RATINGS

Device Type	Working Reverse Voltage (V_{RWM})	Average Rectified Current $I_{F(AV)}$		Repetitive Surge Current	1 Cycle Surge Current t_p = 8.3mS (sinusoidal)		I^2t t_p = 8.3mS	Case Length Max
		@ 55 °C	@ 100 °C	@ 25 °C	@ 25 °C	@ 100 °C	@ 25 °C	dim. C
	Volts	Amps	Amps	Amps	Amps	Amps	A^2S	inches
SCF2500	2500	↑	↑	↑	↑	↑	↑	1.145
SCF5000	5000							2.020
SCF7500	7500	0.5	0.3	15	25	12.5	2.6	2.770
SCF10000	10000							3.520
SCF12500	12500	↓	↓	↓	↓	↓	↓	4.270

MECHANICAL



G21

DIM	DIMENSIONS MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	-	13.2	-	.52	-
B	50.8	-	2.00	-	-
C	SEE TABLE				-
D	-	6.6	-	.26	-
E	1.22	1.37	.048	.054	-

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ELECTRICAL CHARACTERISTICS

Device Type	Max. Leakage Current @ V_{RWM} I_R		Maximum Forward Voltage drop V_F @ 0.5A	Maximum Reverse Recovery Time (1)
	@ 25 °C	@ 100 °C	@ 25 °C	t_{rr} @ 25 °C
	µA	µA	Volts	nS
SCF2500	↑	↑	3.45	↑
SCF5000			5.75	
SCF7500	1.0	25	9.20	150
SCF10000			11.5	
SCF12500	↓	↓	15.0	↓

(1) measured on discrete devices prior to assembly

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

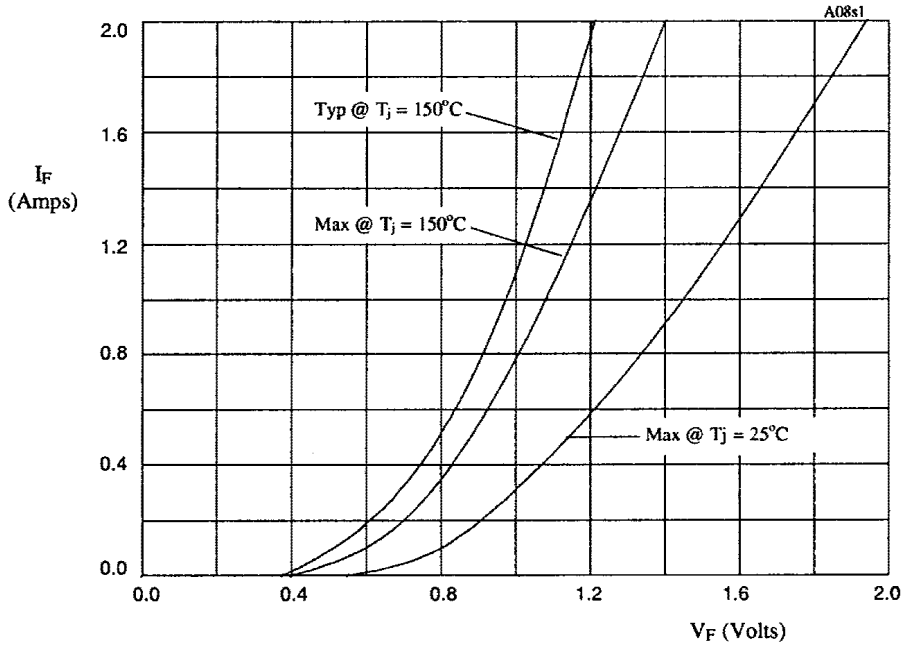

Fig 1. Forward voltage drop as a function of forward current.

TABLE 1

DEVICE	X-AXIS
SCF2500	x3
SCF5000	x5
SCF7500	x8
SCF10000	x10
SCF12500	x13

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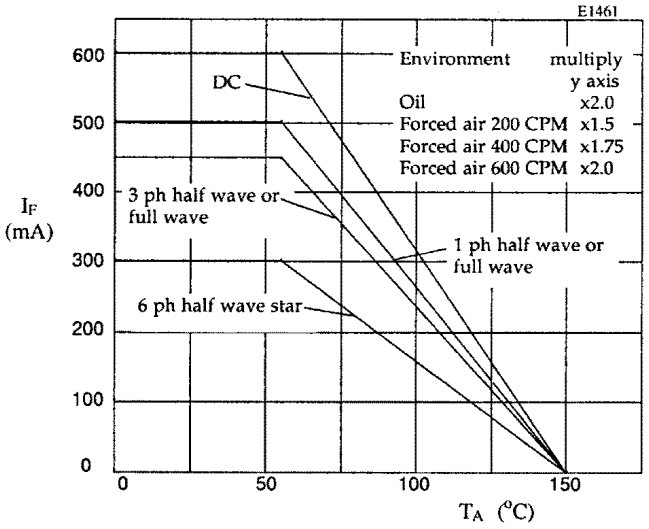

Figure 2. Maximum average forward currents against ambient temperature.

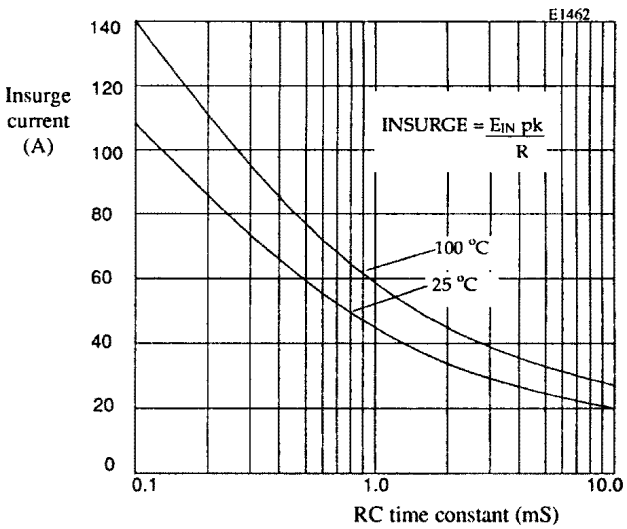

Figure 3. Maximum ratings for capacitive loads. Insurge current versus RC time constant

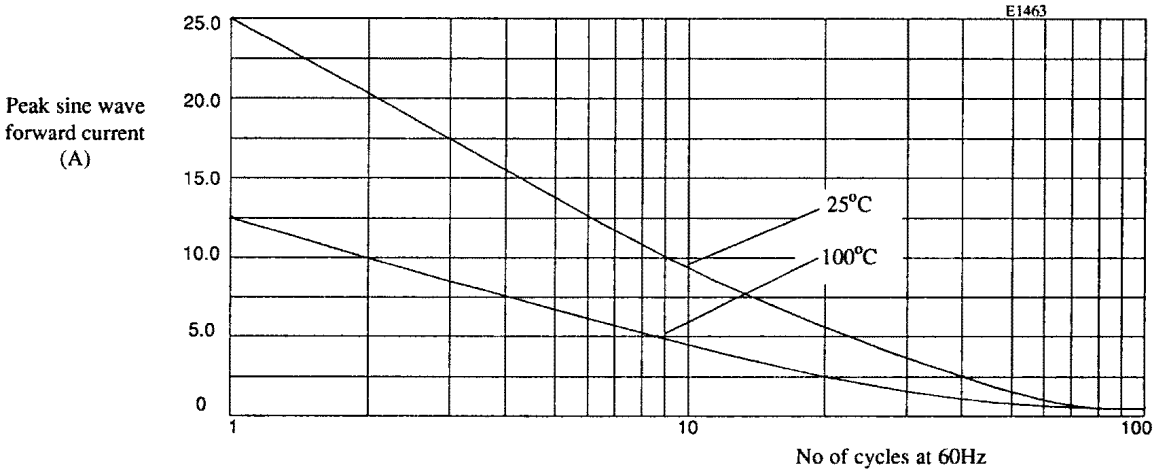

Figure 4. Non repetitive forward current surge curves.