SEMTECH

STANDARD RECOVERY HIGH VOLTAGE RECTIFIER ASSEMBLY

SCH5000 SCH7500 SCH10000 SCH12500 SCH15000 SCH20000 SCH25000

January 8, 1998

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QUICK REFERENCE DATA

- V_R = 5000 - 25000V
- I_F = 0.5A
- I_R = 1µA
- I_{FSM} = 50A

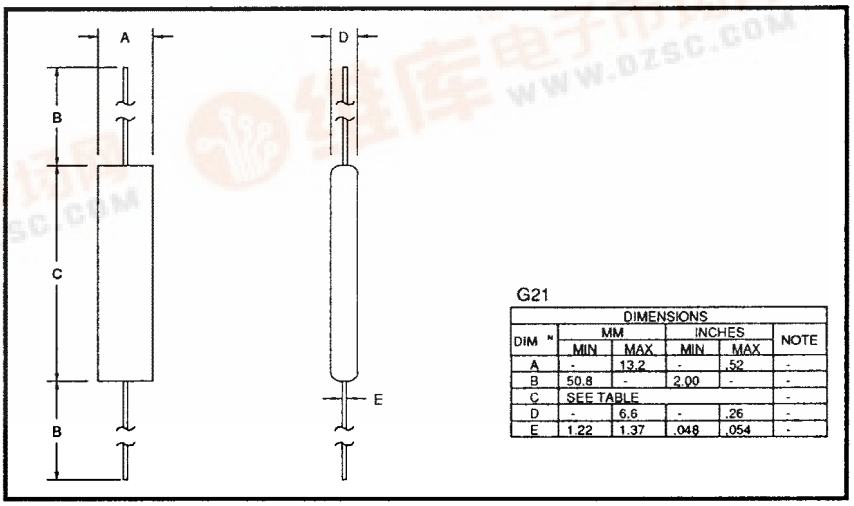
HIGH VOLTAGE, HIGH DENSITY, LEADED, SILICON RECTIFIER ASSEMBLY

- Low forward voltage drop
- Low reverse leakage current
- High thermal shock resistance
- Corona free construction
- Low distributed capacitance

ABSOLUTE MAXIMUM RATINGS

Device Type	Working Reverse Voltage V_{RWM}	Average Rectified Current $I_{F(AV)}$ @ 55 °C	@ 100 °C	Forced air @ 600CFM, 55°C	in still oil @ 55 °C	1 Cycle Surge Current I_{FSM} t_p = 8.3mS @ $T_{J\ MAX}$	I^2t t_p = 8.3mS @ $T_{J\ MAX}$	Repetitive Surge Current I_{FRM} @ 25°C	Case Length dim. C Max
	Volts	Amps	Amps	Amps	Amps	Amps	A^2S	Amps	Inches
SCH5000	5000	↑	↑	↑	↑	↑	↑	↑	1.145
SCH7500	7500								1.645
SCH10000	10000								2.020
SCH12500	12500	0.50	0.33	1.0	1.0	50	12	10	2.395
SCH15000	15000	↓	↓	↓	↓	↓	↓	↓	2.770
SCH20000	20000								3.520
SCH25000	25000								4.270

MECHANICAL



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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	Maximum Reverse Leakage Current I_R @ V_{RWM} @ 25 °C	Maximum Reverse Leakage Current I_R @ V_{RWM} @ 100 °C	Maximum Forward Voltages V_F @ 1.0A @ 25°C	Maximum Reverse Recovery Time [1] t_{rr} @ 25°C
	µA	µA	Volts	µS
SCH5000	↑	↑	5.0	↑
SCH7500			8.0	
SCH10000			10.0	
SCH12500	1.0	20	13.0	5.0
SCH15000			15.0	
SCH20000			20.0	
SCH25000	↓	↓	25.0	↓

1. Measured on discrete devices prior to assembly.

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

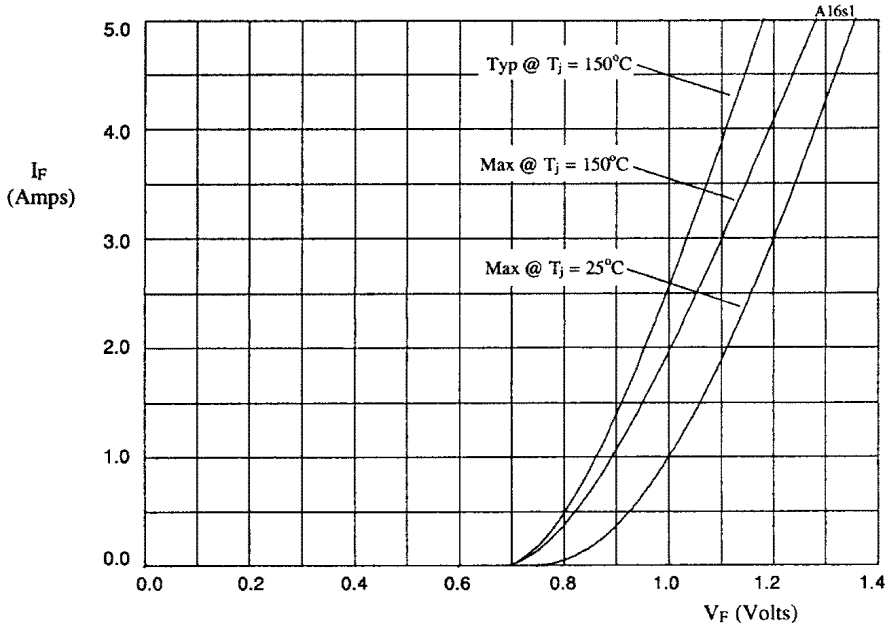

Figure 1. Forward voltage drop as a function of forward current (see Table 1).

TABLE 1

DEVICE	X-AXIS
SCH5000	x5
SCH7500	x8
SCH10000	x10
SCH12500	x13
SCH15000	x15
SCH20000	x20
SCH25000	x25

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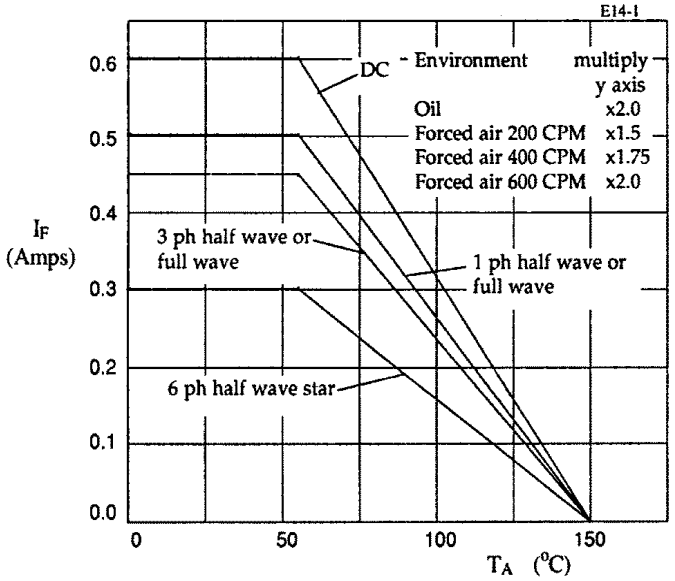

Figure 2. Maximum forward current against ambient temperature.

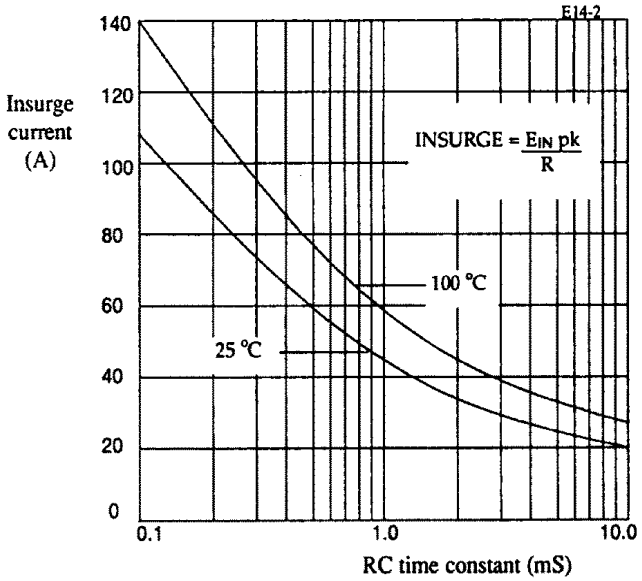

Figure 3. Maximum ratings for capacitive loads. Insurge current versus RC time constant

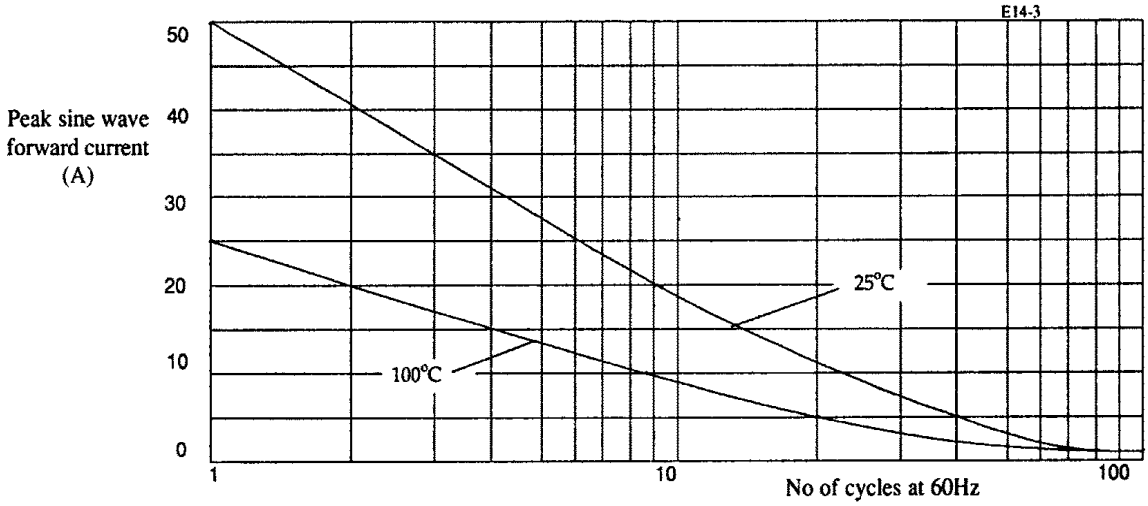

Figure 4. Non repetitive forward current surge curves.