

January 8, 1998

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### 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

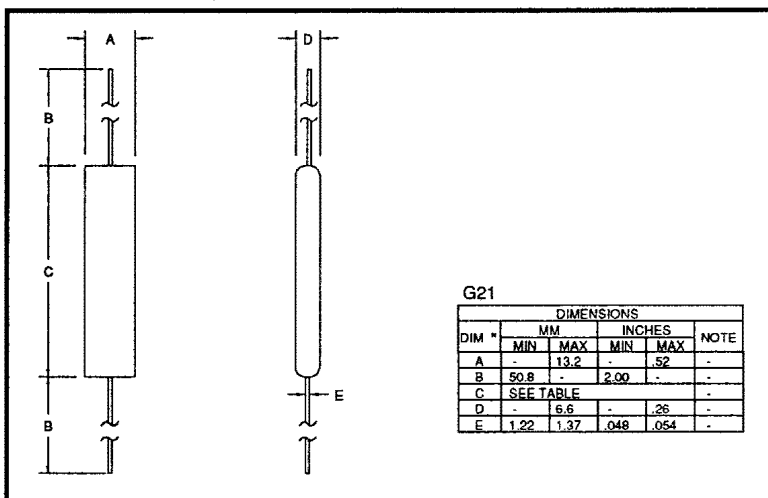
### QUICK REFERENCE DATA

- $V_R = 2500V - 12500V$
- $I_F = 0.5A$
- $I_R = 1.0 \mu A$
- $t_{rr} = 150ns$

### ABSOLUTE MAXIMUM RATINGS

| Device Type | Working Reverse Voltage<br>( $V_{RWM}$ ) | Average Rectified Current<br>$I_{F(AV)}$ |          | Repetitive Surge Current | 1 Cycle Surge Current<br>$t_p = 8.3ms$ (sinusoidal) |          | $I^2t$<br>$t_p = 8.3ms$ | Case Length Max |
|-------------|------------------------------------------|------------------------------------------|----------|--------------------------|-----------------------------------------------------|----------|-------------------------|-----------------|
|             |                                          | @ 55 °C                                  | @ 100 °C | @ 25 °C                  | @ 25 °C                                             | @ 100 °C | @ 25 °C                 | dim. C          |
|             | Volts                                    | Amps                                     | Amps     | Amps                     | Amps                                                | Amps     | A <sup>2</sup> S        | 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



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### ELECTRICAL CHARACTERISTICS

| Device Type | Max. Leakage Current @ $V_{RWM}$<br>$I_R$ |          | Maximum Forward Voltage drop $V_F$ @ 0.5A | Maximum Reverse Recovery Time $t_{rr}$ (1) |
|-------------|-------------------------------------------|----------|-------------------------------------------|--------------------------------------------|
|             | @ 25 °C                                   | @ 100 °C | @ 25 °C                                   | $t_{rr}$ @ 25 °C                           |
|             | $\mu A$                                   | $\mu A$  | 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

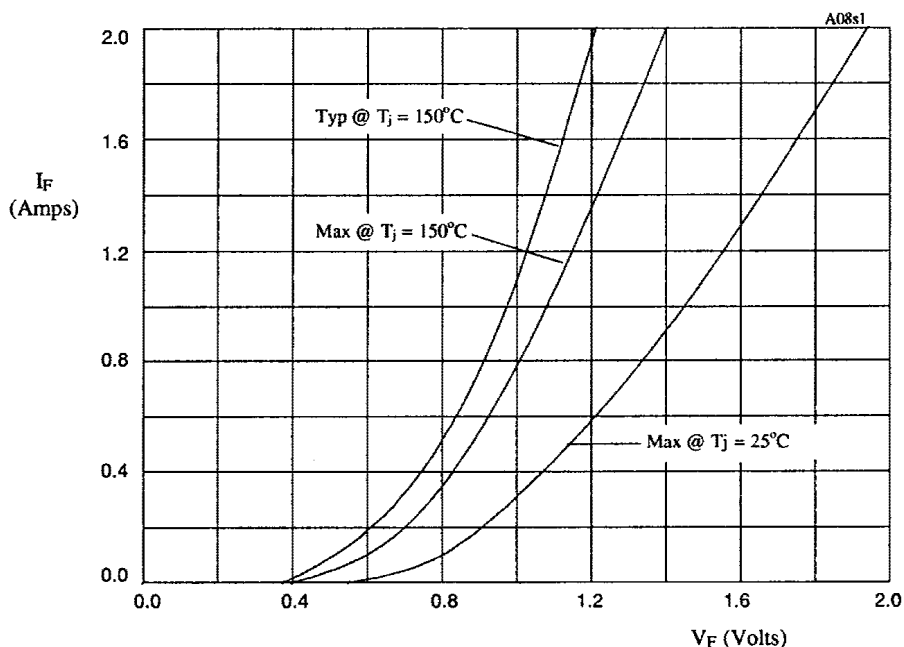


Fig 1. Forward voltage drop as a function of forward current.

TABLE 1

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

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