

January 8, 1998

**QUICK REFERENCE  
DATA**

- $V_R = 2000 - 12000V$
- $I_F = 1.5A$
- $I_R = 5.0\mu A$
- $t_{rr} = 150nS$

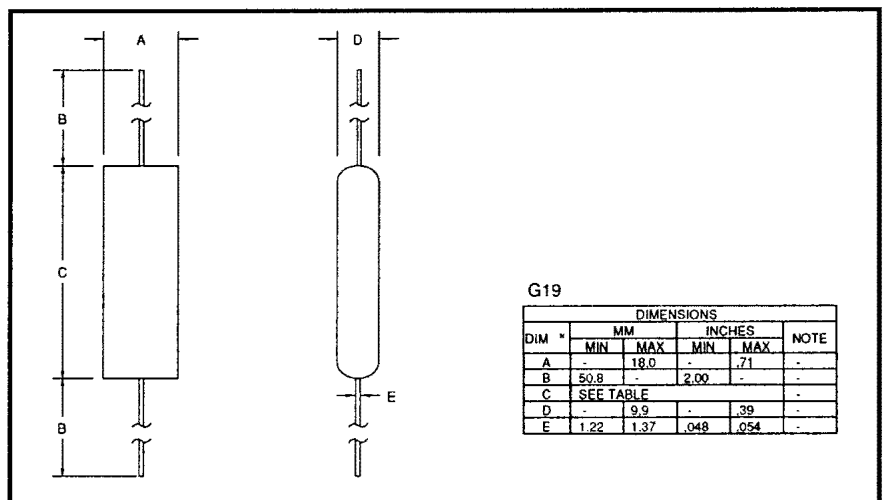
**HIGH VOLTAGE, HIGH DENSITY, FAST RECOVERY  
LEADED SILICON RECTIFIER ASSEMBLY**

- Low reverse recovery time
- Low reverse leakage currents
- High thermal shock resistance
- Corona free construction
- Low distributed capacitance

**ABSOLUTE MAXIMUM RATINGS**

| Device Type | Working Reverse Voltage ( $V_{RWM}$ ) | Average Rectified Current $I_{F(AV)}$ |          | Repetitive Surge Current | 1 Cycle Surge Current $t_p = 8.3mS$ (sinusoidal) $I_{FSM}$ |          | $I^2t$ $t_p = 8.3mS$ | Case Length Max |
|-------------|---------------------------------------|---------------------------------------|----------|--------------------------|--|----------|----------------------|-----------------|
|             |                                       | @ 55 °C                               | @ 100 °C | @ 25 °C                  | @ 25 °C  | @ 100 °C | @ 25 °C              | dim. C          |
|             |                                       | Volts                                 | Amps     | Amps                     | Amps   | Amps     | A <sup>2</sup> S     | inches          |
| SCFS2000    | 2000                                  | ↑                                     | ↑        | ↑                        | ↑  | ↑        | ↑                    | 1.53            |
| SCFS4000    | 4000                                  | ↑                                     | ↑        | ↑                        | ↑  | ↑        | ↑                    | 2.53            |
| SCFS6000    | 6000                                  | 1.5                                   | 1.0      | 10.0                     | 150  | 75       | 93                   | 3.53            |
| SCFS8000    | 8000                                  | ↓                                     | ↓        | ↓                        | ↓  | ↓        | ↓                    | 4.53            |
| SCFS10000   | 10000                                 | ↓                                     | ↓        | ↓                        | ↓  | ↓        | ↓                    | 5.53            |
| SCFS12000   | 12000                                 | ↓                                     | ↓        | ↓                        | ↓  | ↓        | ↓                    | 6.53            |

**MECHANICAL**



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**ELECTRICAL CHARACTERISTICS**

| Device Type | Maximum Leakage Current @ $V_{RWM}$<br>$I_R$ |          | Maximum Forward Voltage drop $V_F$ @ 3.0A | Maximum Reverse Recovery Time<br>$t_{rr}$ @ 25 °C |
|-------------|--|----------|---|---|
|             | @ 25 °C                                      | @ 100 °C | @ 25 °C                                   |   |
|             | $\mu A$                                      | $\mu A$  | Volts                                     | nS  |
| SCFS2000    | ↑  | ↑        | 5.4                                       | ↑   |
| SCFS4000    |  |          | 9.0                                       |   |
| SCFS6000    |  |          | 12.6                                      |   |
| SCFS8000    | 5.0  | 25       | 16.2                                      | 150   |
| SCFS10000   |  |          | 19.8                                      |   |
| SCFS12000   | ↓  | ↓        | 23.4                                      | ↓   |

(1) measured on discrete devices prior to assembly

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

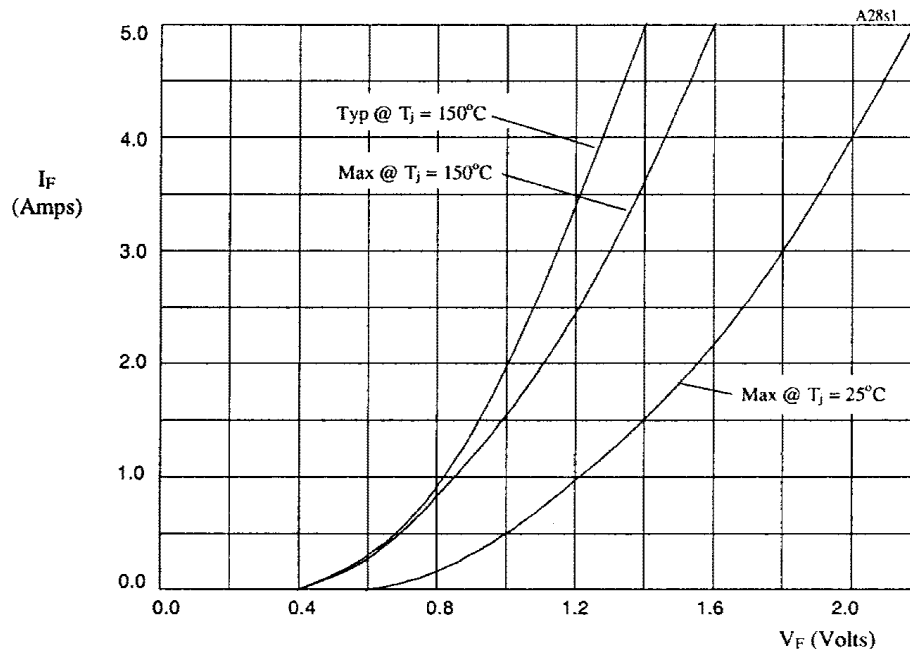


Fig 1. Forward voltage drop as a function of forward current.

TABLE I

| DEVICE    | X-AXIS |
|-----------|--------|
| SCFS2000  | x3     |
| SCFS4000  | x5     |
| SCFS6000  | x7     |
| SCFS8000  | x9     |
| SCFS10000 | x11    |
| SCFS12000 | x13    |

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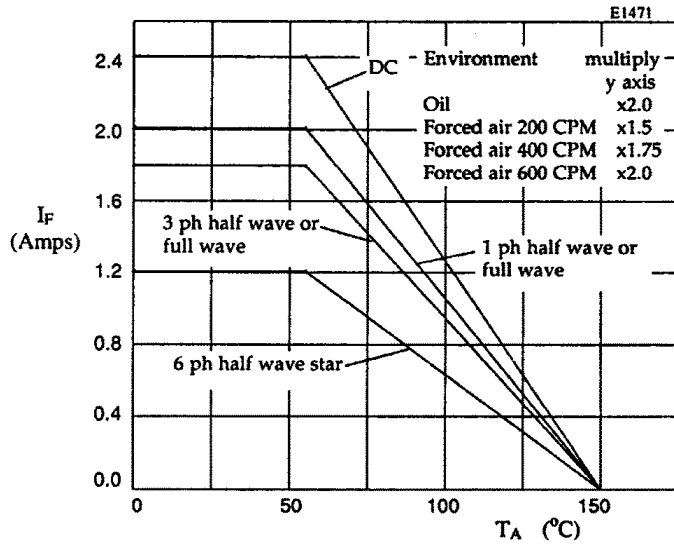


Figure 2. Maximum average forward currents against ambient temperature.

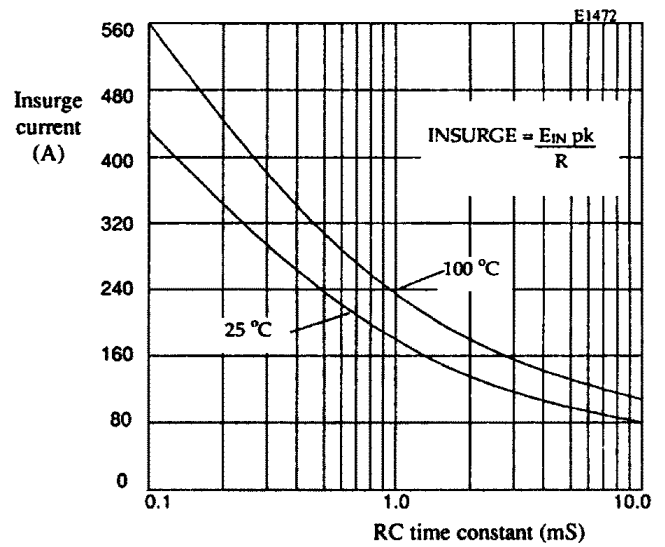


Figure 3. Maximum ratings for capacitive loads. Insurge current versus RC time constant

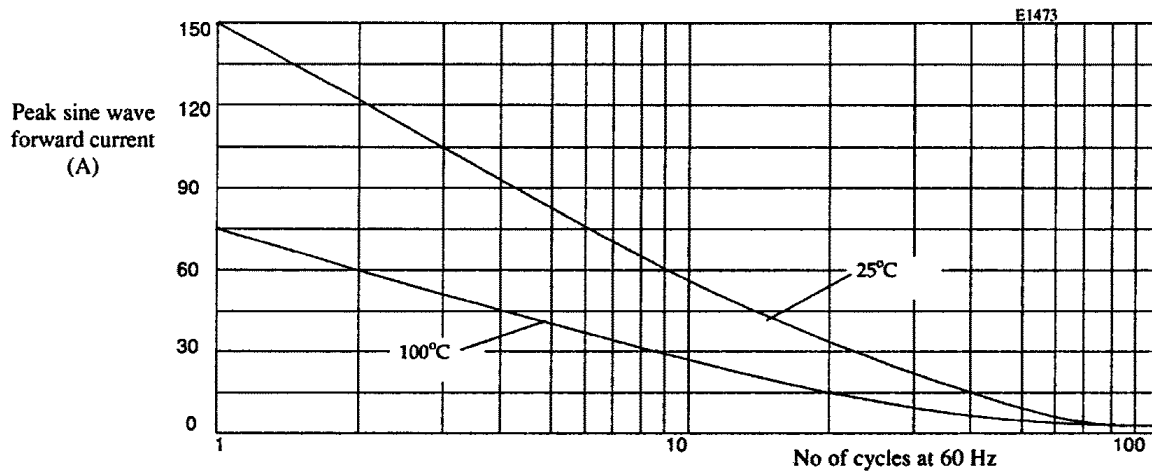


Figure 4. Non repetitive forward current surge curves for 25 °C and 100 °C