

January 8, 1998

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

QUICK REFERENCE DATA

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

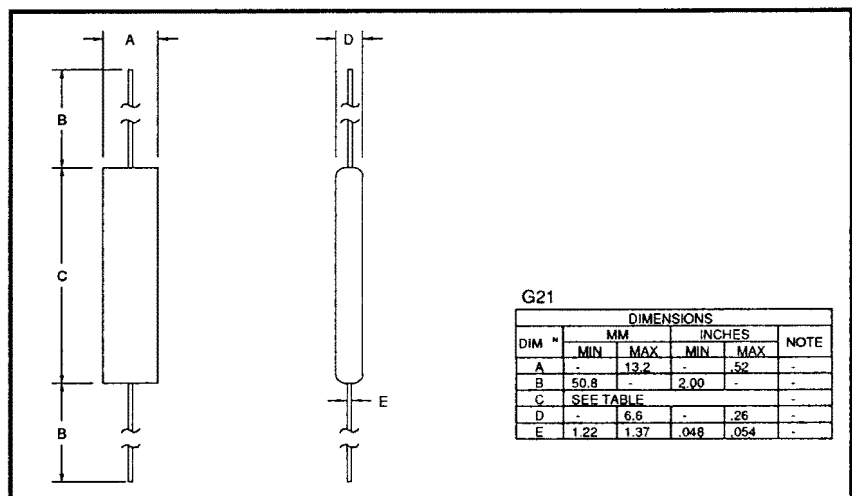
HIGH VOLTAGE, HIGH DENSITY, LEADED, SILICON RECTIFIER ASSEMBLY

- 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 $I_{F(AV)}$ | | | | 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 |
|-------------|-----------------------------------|---------------------------------------|----------|---------------------------|----------------------|---|--|---|------------------------|
| | | @ 55 °C | @ 100 °C | Forced air @ 600CFM, 55°C | in still oil @ 55 °C | | | | |
| | | Volts | Amps | Amps | Amps | | | | |
| 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



January 8, 1998

ELECTRICAL CHARACTERISTICS

| Device Type | Maximum Reverse Leakage Current $I_R @ V_{RWM}$ | | Maximum Forward Voltages $V_F @ 1.0A$ @ 25°C | Maximum Reverse Recovery Time ⁽¹⁾ $t_{rr} @ 25°C$ |
|-------------|--|----------|--|---|
| | @ 25 °C | @ 100 °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

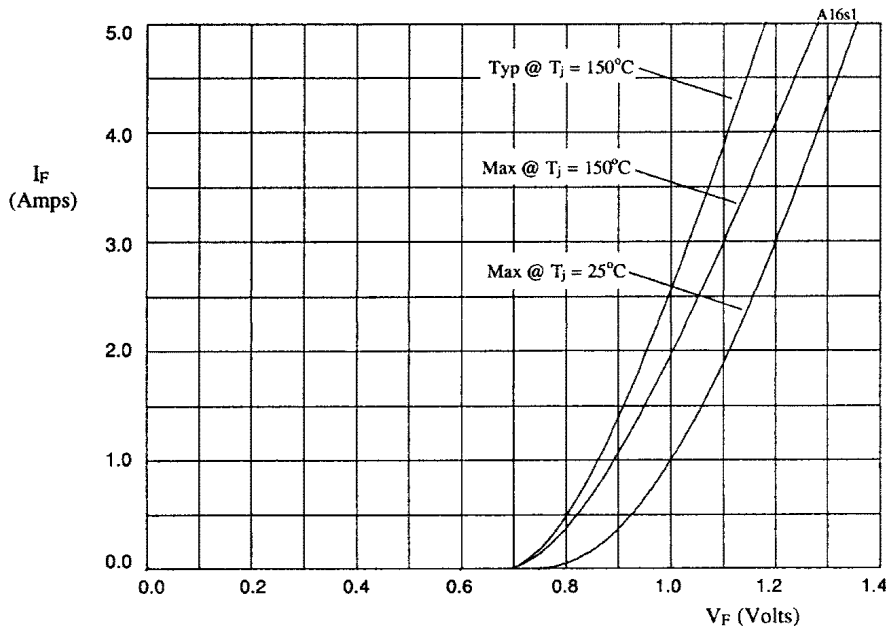


Figure 1. Forward voltage drop as a function of forward current (see Table 1).

TABLE 1

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

January 8, 1998

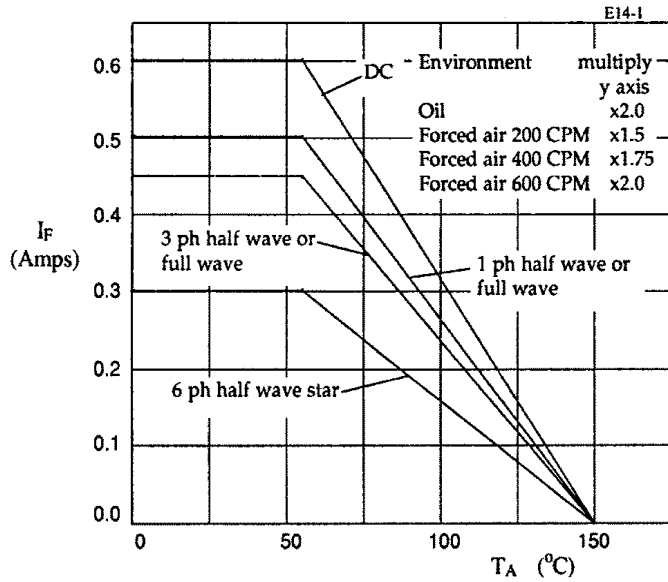


Figure 2. Maximum forward current against ambient temperature.

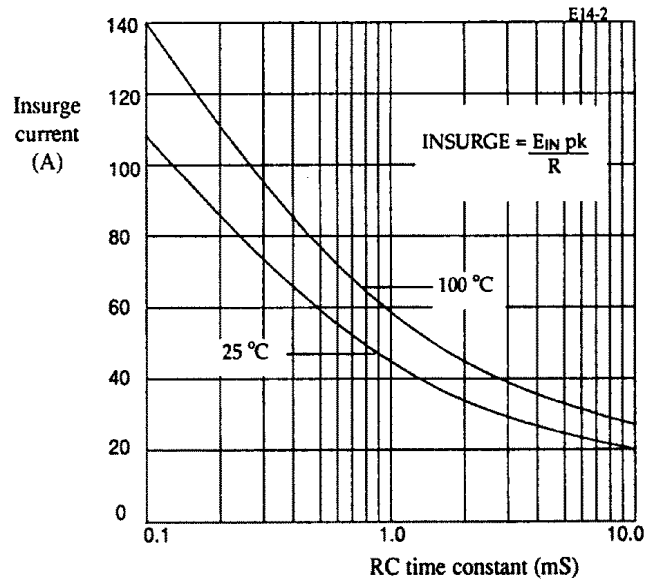


Figure 3. Maximum ratings for capacitive loads. Insurge current versus RC time constant

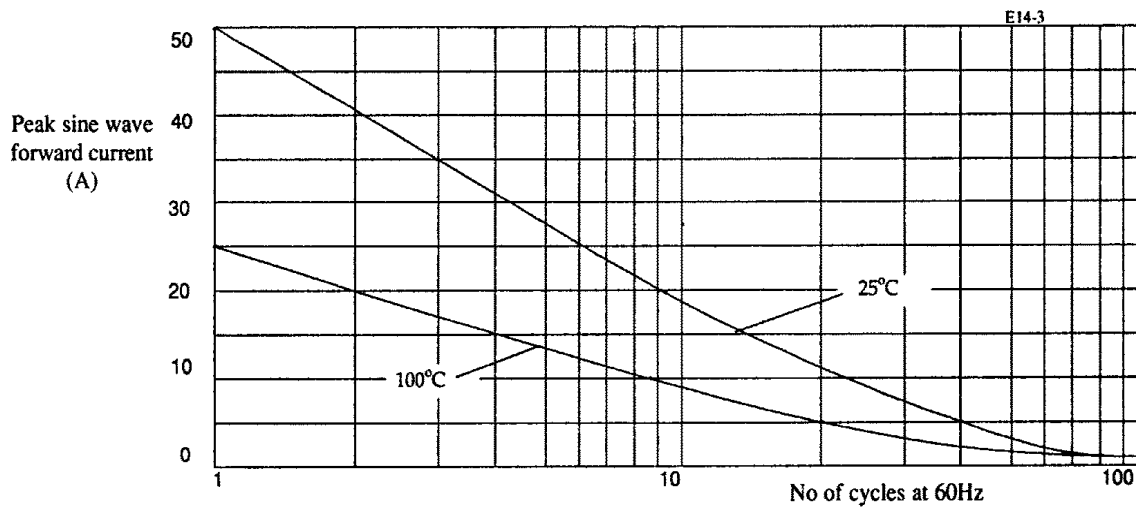


Figure 4. Non repetitive forward current surge curves.