

January 7, 1998

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

QUICK REFERENCE DATA

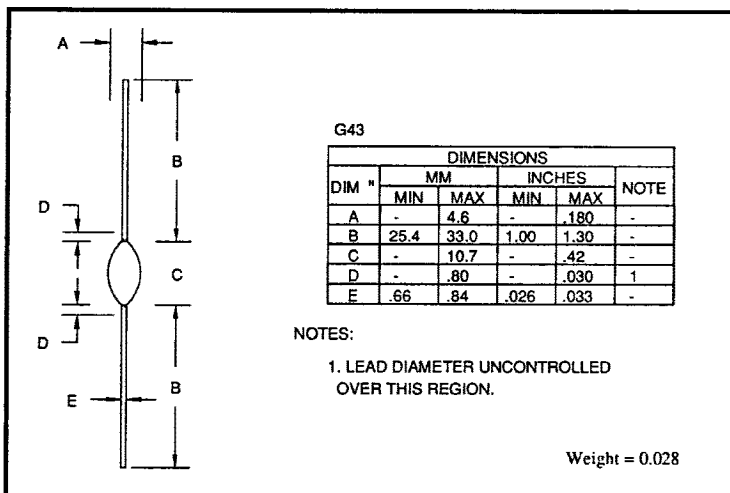
AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE STANDARD RECOVERY RECTIFIER DIODE

- $V_R = 4kV - 10kV$
- $I_F = 300mA$
- $t_{rr} = 2.5\mu S$
- $I_R = 1.0\mu A$
- Low reverse currents
- Hermetically sealed with Metoxilite fused metal oxide
- Good thermal shock resistance
- Monolithic cavity free construction
- Subminiature size

ABSOLUTE MAXIMUM RATINGS (@ 25°C unless otherwise specified)

| | Symbol | SM40 | SM50 | SM75 | SM100 | Unit |
|--|-------------|-----------------|------|------|-------|------|
| Working reverse voltage | V_{RWM} | 4000 | 5000 | 7500 | 10000 | V |
| Repetitive reverse voltage | V_{RRM} | 4000 | 5000 | 7500 | 10000 | V |
| Average forward current (@ 55°C in oil) | $I_{F(AV)}$ | ← 300 → | | | | mA |
| Repetitive surge current (@ 55°C in oil, lead length 0.375") | I_{FRM} | ← 1.0 → | | | | A |
| Non-repetitive surge current ($t_p = 8.3mS$, @ V_R & T_{jmax}) | I_{FSM} | ← 25 → | | | | A |
| Storage temperature range | T_{STG} | ← -65 to +175 → | | | | °C |
| Operating temperature range | T_{OP} | ← -65 to +175 → | | | | °C |

MECHANICAL



January 7, 1998

CHARACTERISTICS (@ 25°C unless otherwise specified)

| | Symbol | SM40 | SM50 | SM75 | SM100 | Unit |
|---|--|------|------|------|-------|--------------------|
| Average forward current (sine wave) - max. pcb mounted; T _A = 55°C - max. in unstirred oil | I _{F(AV)} I _{F(AV)} | ← | 130 | → | ← | mA mA |
| I ² t for fusing (t = 8.3mS) max. | I ² t | ← | 2.6 | → | ← | A ² S |
| Forward voltage drop max. @ I _F = 100mA, T _j = 25°C | V _F | ← | 10.0 | → | ← | V |
| Reverse current max. @ V _{RWM} , T _j = 25°C @ V _{RWM} , T _j = 100°C | I _R I _R | ← | 1.0 | → | ← | μ A μ A |
| Reverse recovery time max. 50mA I _F to 100mA I _R . Recover to 25mA I _{RR} . | t _{rr} | ← | 2.5 | → | ← | μ S |
| Junction capacitance typ. @ V _R = 5V, f = 1MHz | C _j | ← | 3.2 | → | ← | pF |
| Thermal resistance - junction to oil Unstirred @ 55°C Stirred @ 55°C | R θ JO R θ JO | ← | 28 | → | ← | °C/W °C/W |
| Thermal resistance - junction to amb. on 0.06" thick pcb. 1oz copper. | R θ JA | ← | 91 | → | ← | °C/W |

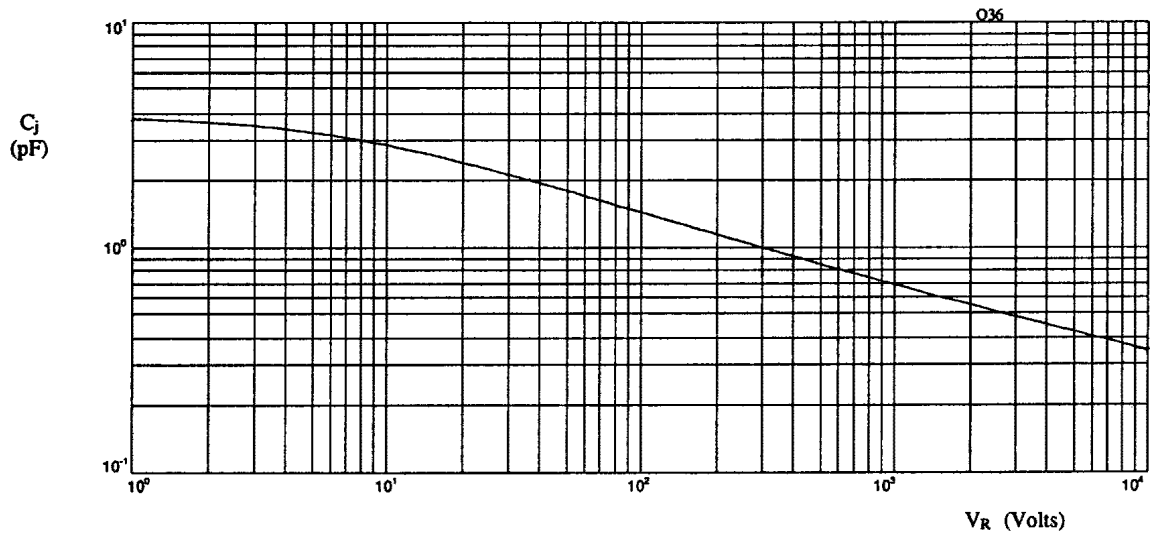


Fig 1. Typical junction capacitance as a function of reverse voltage.

January 7, 1998

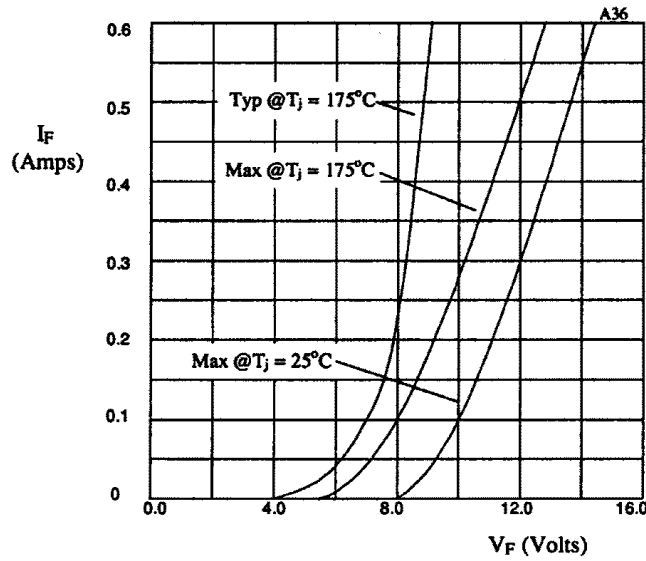


Fig 2. Forward voltage drop as a function of forward current.

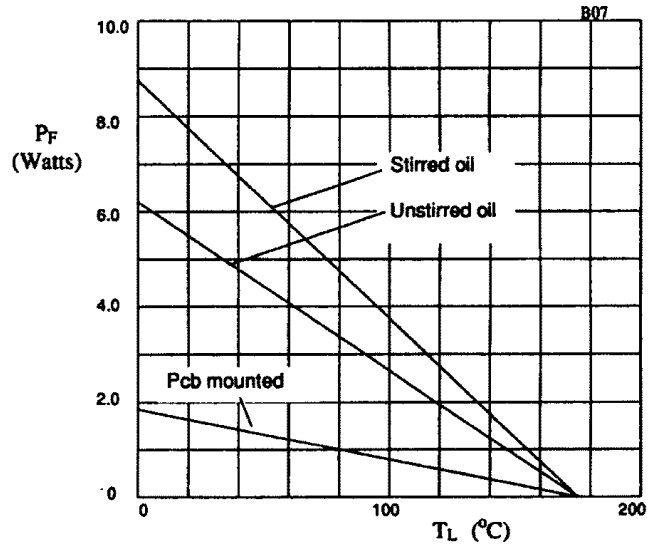


Fig 3. Power derating in air and oil.

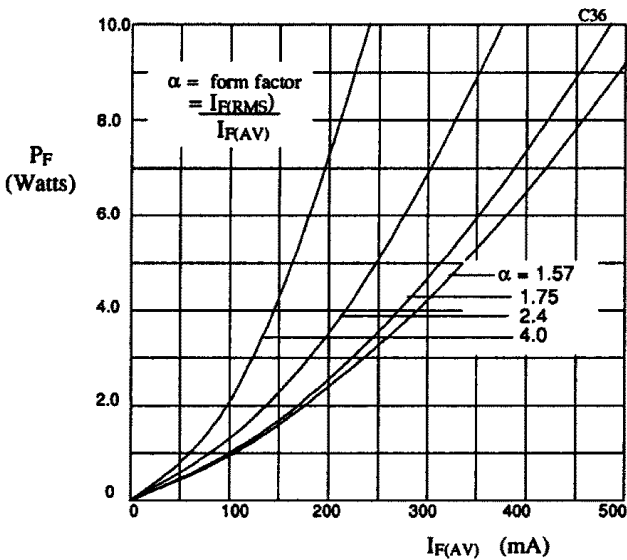


Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

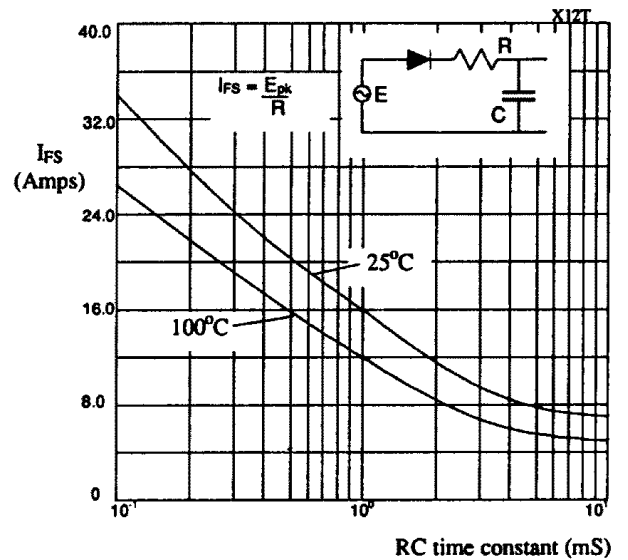


Fig 5. Maximum ratings for capacitive loads.