

January 7, 1998

**QUICK REFERENCE  
DATA**

- $V_R = 4kV - 10kV$
- $I_F = 300mA$
- $t_{rr} = 2.5\mu S$
- $I_R = 1.0\mu A$

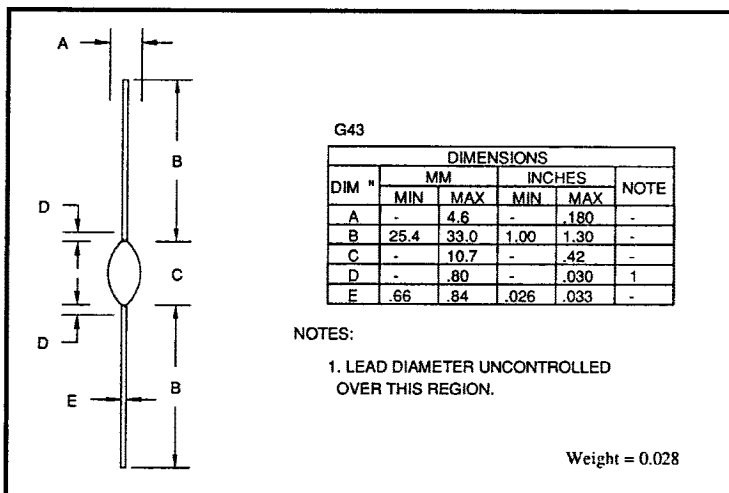
**AXIAL LEADED HERMETICALLY SEALED HIGH  
VOLTAGE STANDARD RECOVERY RECTIFIER DIODE**

- 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**



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**CHARACTERISTICS** (@ 25°C unless otherwise specified)

	Symbol	SM40	SM50	SM75	SM100	Unit
Average forward current (sine wave)						
- max. pcb mounted; T <sub>A</sub> = 55°C	I <sub>F(AV)</sub>	←	130	→		mA
- max. in unstirred oil	I <sub>F(AV)</sub>	←	300	→		mA
I <sup>2</sup> t for fusing (t = 8.3mS) max.	I <sup>2</sup> t	←	2.6	→		A <sup>2</sup> S
Forward voltage drop max. @ I <sub>F</sub> = 100mA, T <sub>j</sub> = 25°C	V <sub>F</sub>	←	10.0	→		V
Reverse current max. @ V <sub>RWM</sub> , T <sub>j</sub> = 25°C	I <sub>R</sub>	←	1.0	→		μA
@ V <sub>RWM</sub> , T <sub>j</sub> = 100°C	I <sub>R</sub>	←	20	→		μA
Reverse recovery time max. 50mA I <sub>F</sub> to 100mA I <sub>R</sub> . Recover to 25mA I <sub>RR</sub> .	t <sub>rr</sub>	←	2.5	→		μS
Junction capacitance typ. @ V <sub>R</sub> = 5V, f = 1MHz	C <sub>j</sub>	←	3.2	→		pF
Thermal resistance - junction to oil Unstirred @ 55°C	R <sub>θJO</sub>	←	28	→		°C/W
Stirred @ 55°C	R <sub>θJO</sub>	←	20	→		°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1oz copper.	R <sub>θJA</sub>	←	91	→		°C/W

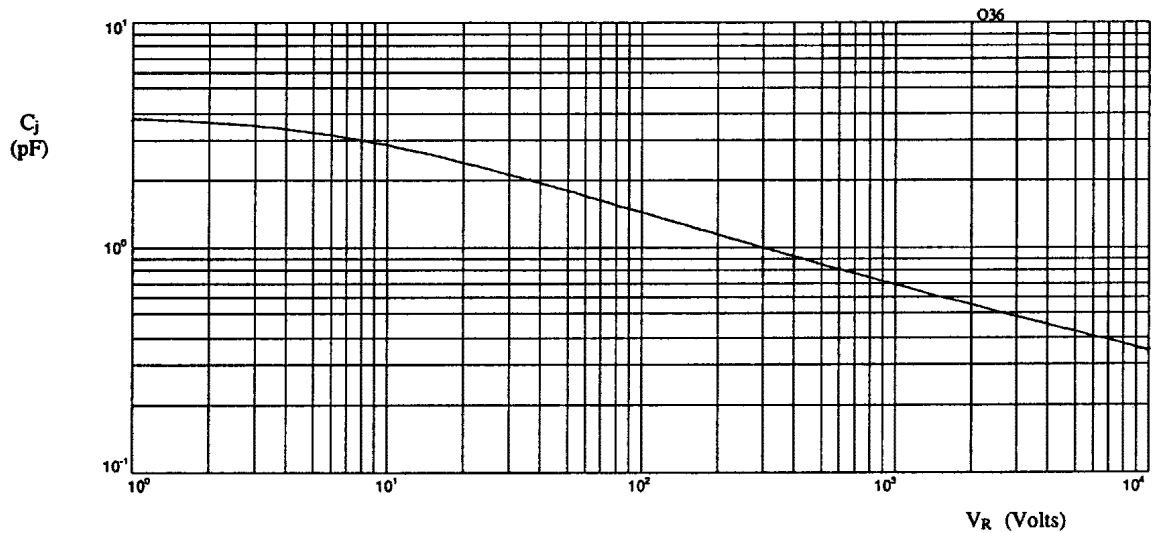


Fig 1. Typical junction capacitance as a function of reverse voltage.



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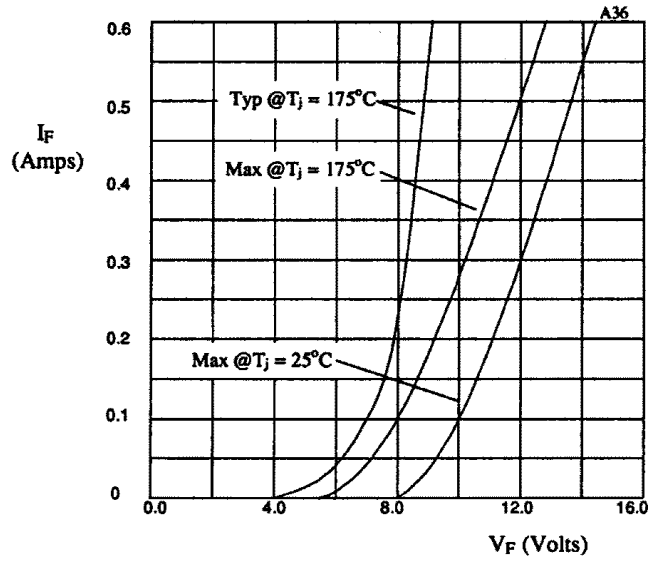


Fig 2. Forward voltage drop as a function of forward current.

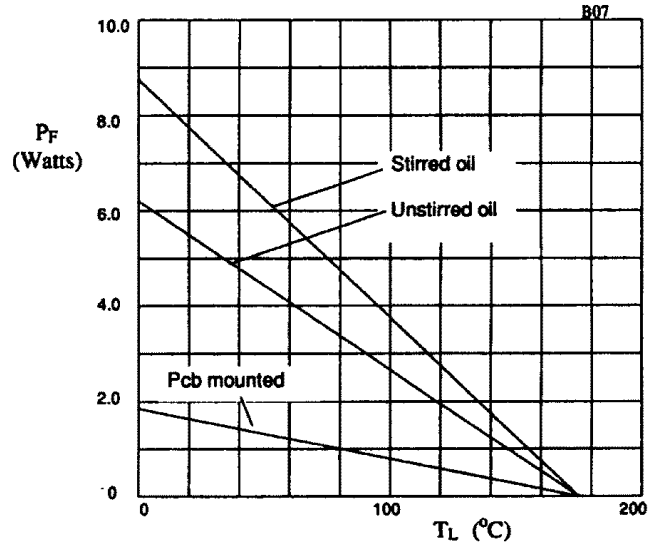


Fig 3. Power derating in air and oil.

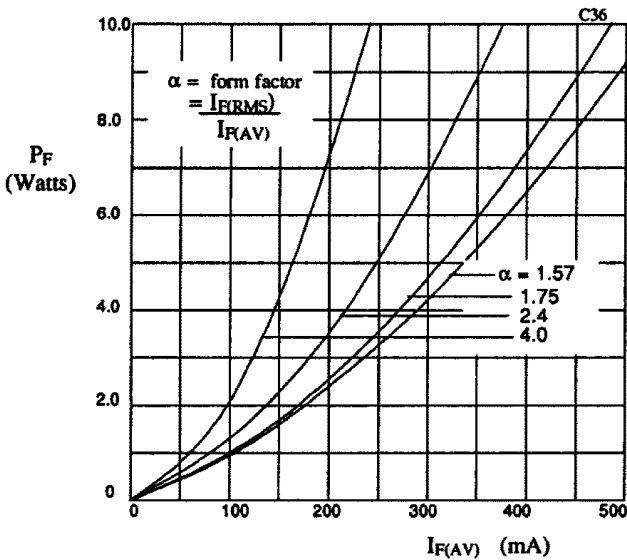


Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

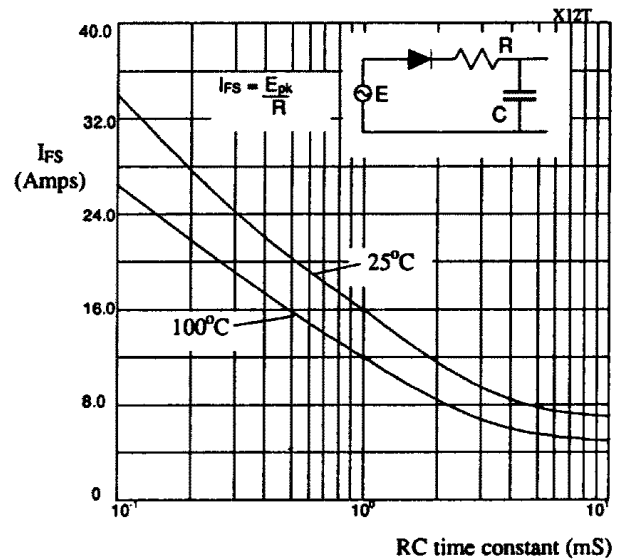


Fig 5. Maximum ratings for capacitive loads.