

January 7, 1998

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QUICK REFERENCE DATA

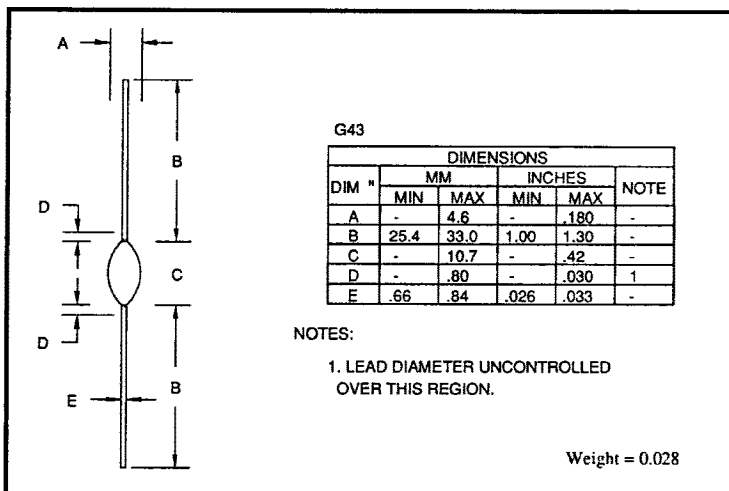
AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE STANDARD RECOVERY RECTIFIER DIODE

- $V_R = 4\text{kV} - 10\text{kV}$
- $I_F = 300\text{mA}$
- $t_{rr} = 2.5\mu\text{s}$
- $I_R = 1.0\mu\text{A}$
- 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 ($t_p = 8.3\text{mS}$, @ 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 _A = 55°C	I _{F(AV)}	←	130	→		mA
- max. in unstirred oil	I _{F(AV)}	←	300	→		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	I _R	←	1.0	→		μ A
@ V _{RWM} , T _j = 100°C	I _R	←	20	→		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	R θ JO	←	28	→		°C/W
Stirred @ 55°C	R θ JO	←	20	→		°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1oz copper.	R θ JA	←	91	→		°C/W

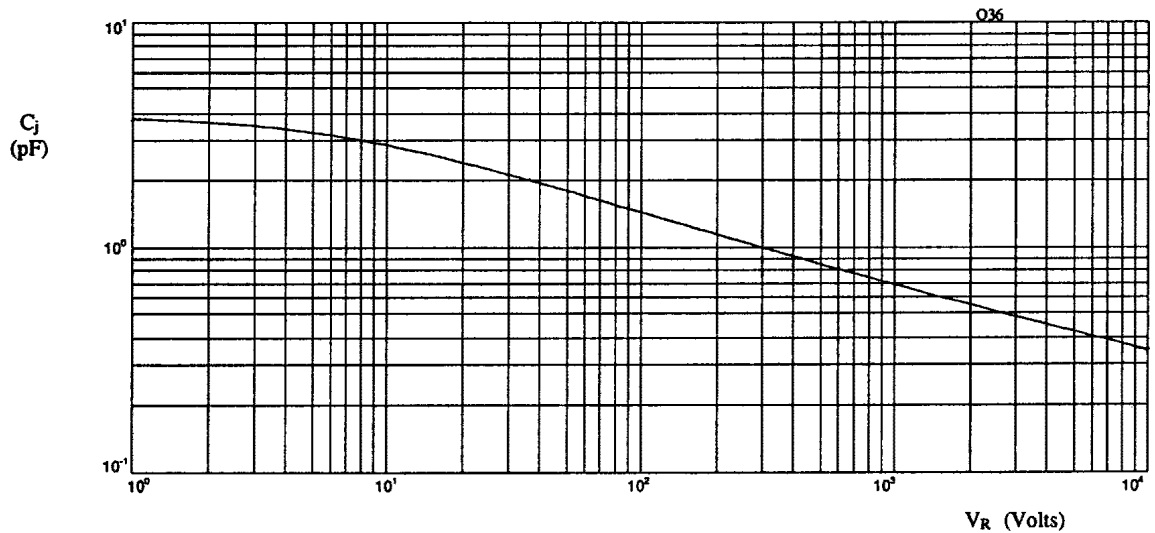


Fig 1. Typical junction capacitance as a function of reverse voltage.

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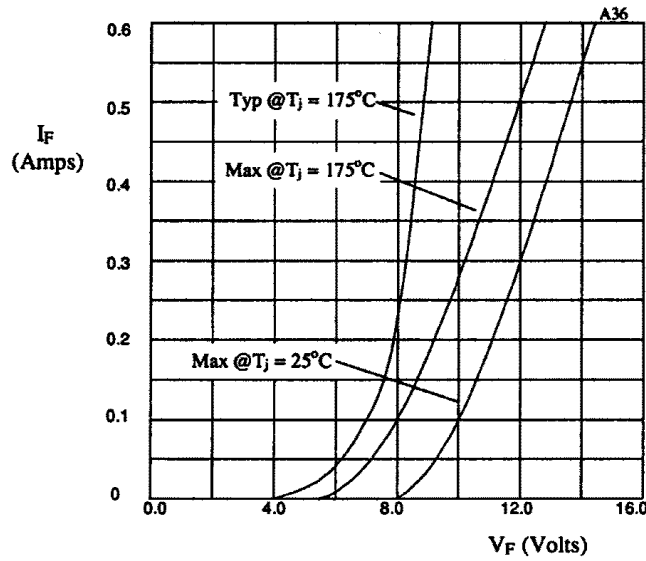


Fig 2. Forward voltage drop as a function of forward current.

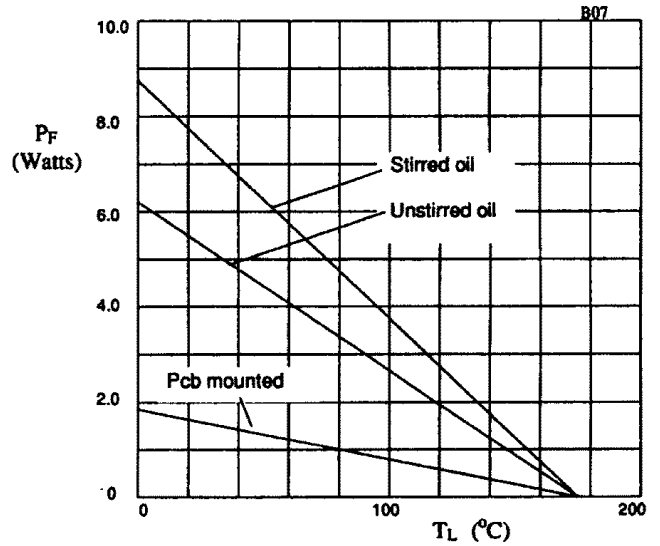


Fig 3. Power derating in air and oil.

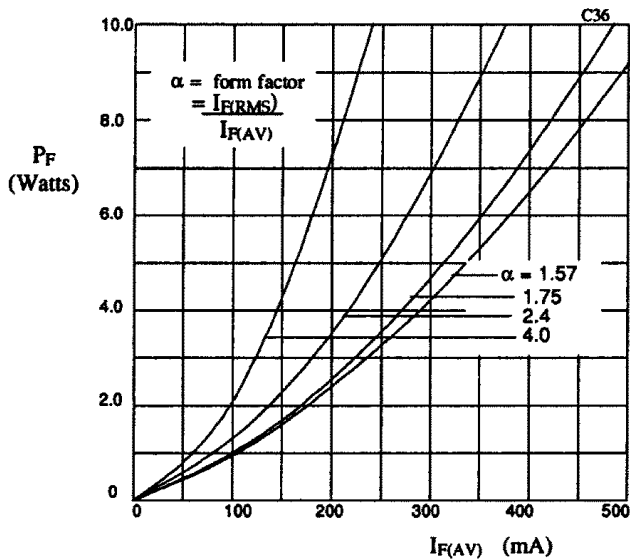


Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

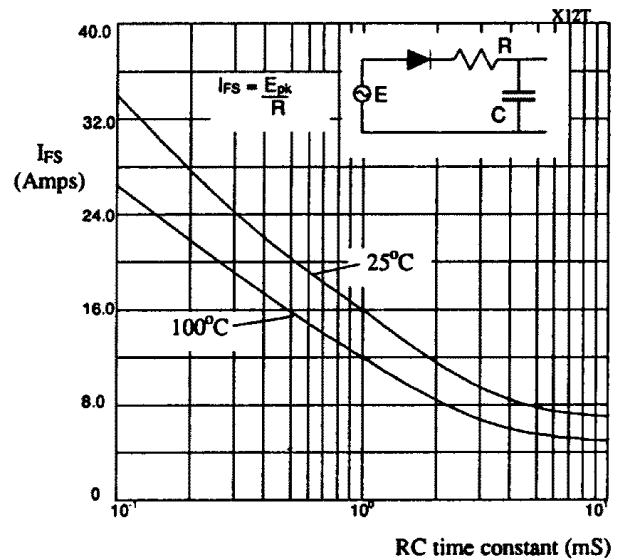


Fig 5. Maximum ratings for capacitive loads.