

January 7, 1998

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

QUICK REFERENCE DATA

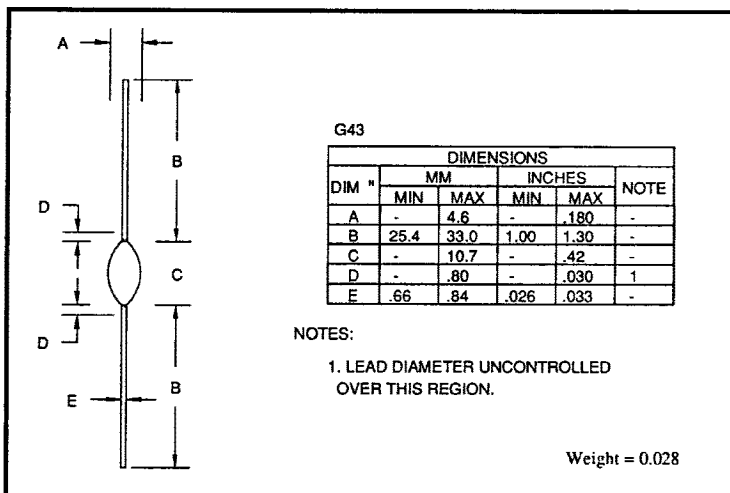
AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE STANDARD RECOVERY RECTIFIER DIODE

- $V_R = 4\text{kV} - 10\text{kV}$
- $I_F = 300\text{mA}$
- $t_{rr} = 2.5\mu\text{s}$
- $I_R = 1.0\mu\text{A}$
- 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 $^{\circ}$ C unless otherwise specified)

	Symbol	SM40	SM50	SM75	SM100	Unit
Average forward current (sine wave)						
- max. pcb mounted; $T_A = 55^{\circ}\text{C}$	$I_{F(AV)}$	←	130	→		mA
- max. in unstirred oil	$I_{F(AV)}$	←	300	→		mA
I^2t for fusing (t = 8.3mS) max.	I^2t	←	2.6	→		A 2 S
Forward voltage drop max. @ $I_F = 100\text{mA}$, $T_j = 25^{\circ}\text{C}$	V_F	←	10.0	→		V
Reverse current max. @ V_{RWM} , $T_j = 25^{\circ}\text{C}$	I_R	←	1.0	→		μA
@ V_{RWM} , $T_j = 100^{\circ}\text{C}$	I_R	←	20	→		μA
Reverse recovery time max. 50mA I_F to 100mA I_R . Recover to 25mA I_{RR} .	t_{rr}	←	2.5	→		μS
Junction capacitance typ. @ $V_R = 5\text{V}$, $f = 1\text{MHz}$	C_j	←	3.2	→		pF
Thermal resistance - junction to oil Unstirred @ 55 $^{\circ}\text{C}$	$R_{\theta JO}$	←	28	→		$^{\circ}\text{C}/\text{W}$
Stirred @ 55 $^{\circ}\text{C}$	$R_{\theta JO}$	←	20	→		$^{\circ}\text{C}/\text{W}$
Thermal resistance - junction to amb. on 0.06" thick pcb. 1oz copper.	$R_{\theta JA}$	←	91	→		$^{\circ}\text{C}/\text{W}$

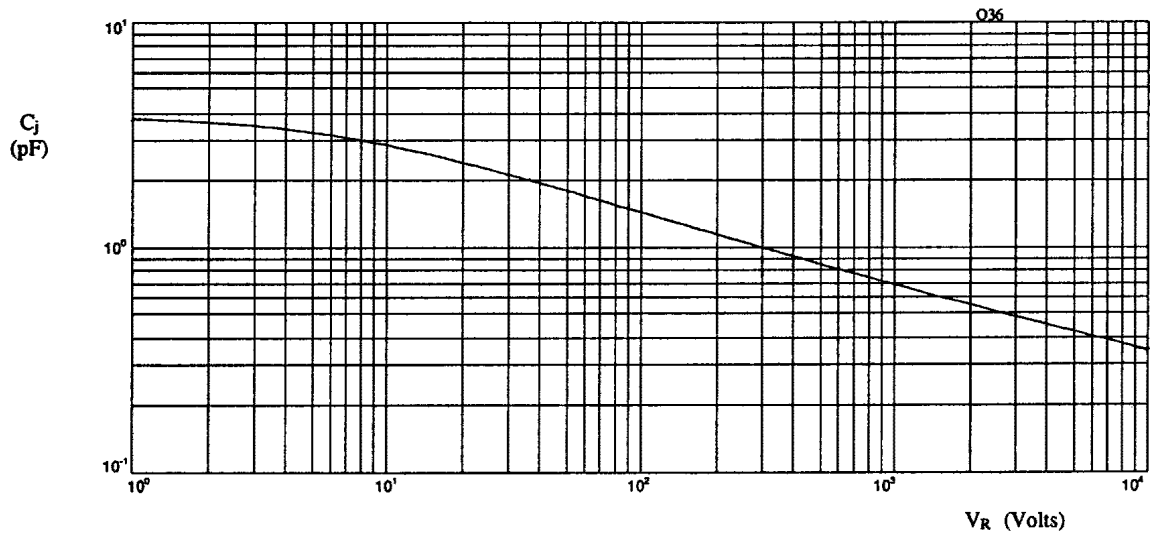


Fig 1. Typical junction capacitance as a function of reverse voltage.

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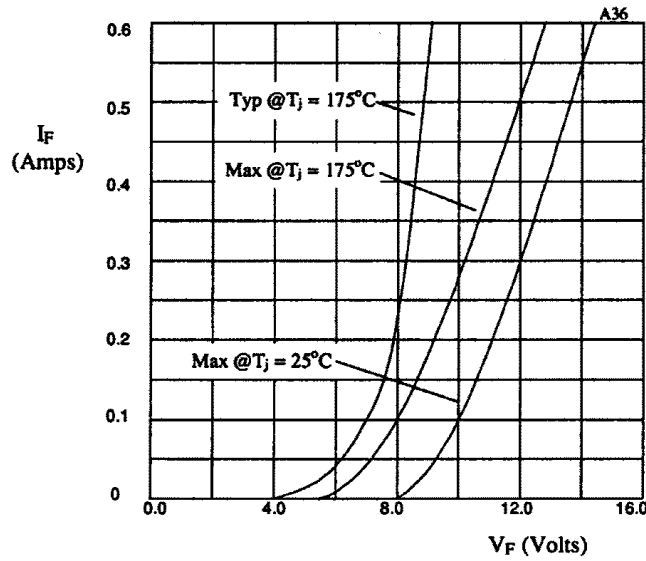


Fig 2. Forward voltage drop as a function of forward current.

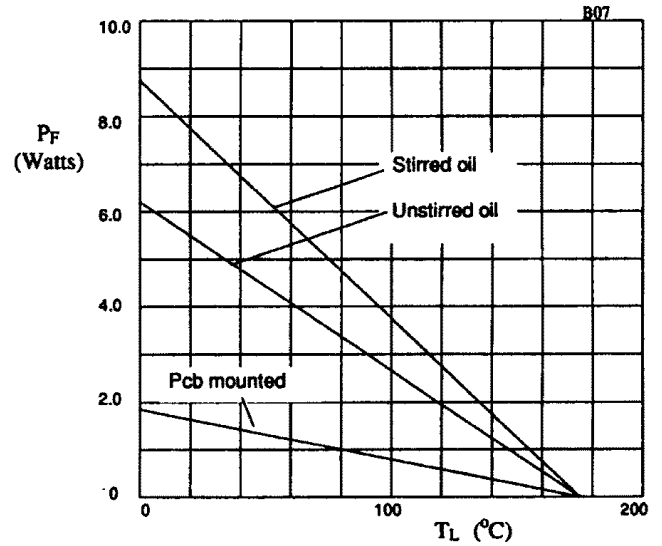


Fig 3. Power derating in air and oil.

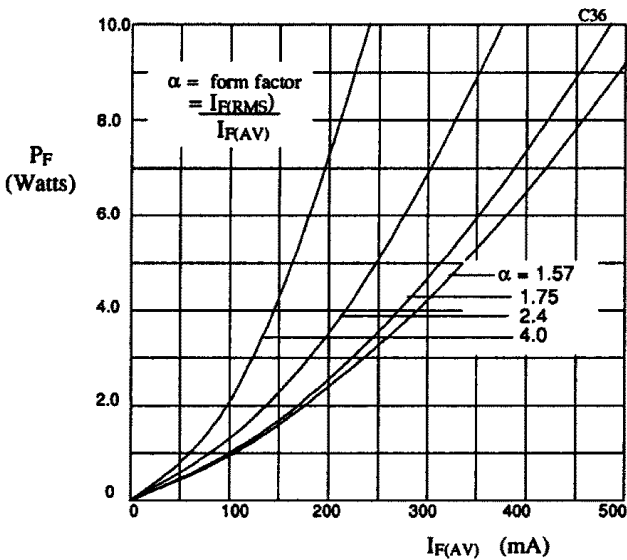


Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

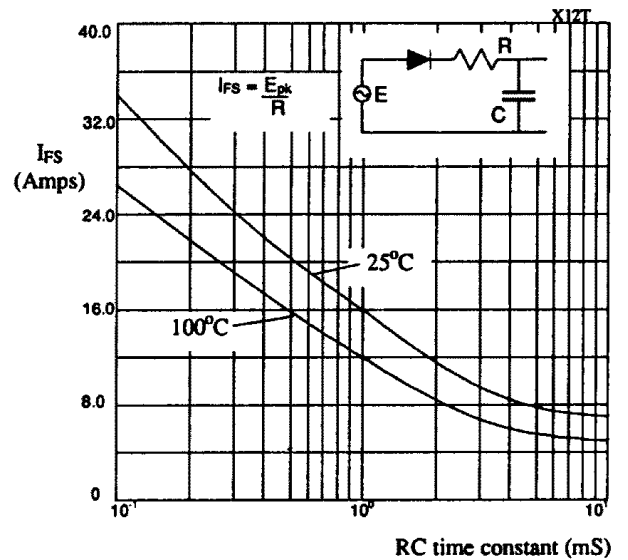


Fig 5. Maximum ratings for capacitive loads.