January 7, 1998 TEL:805-498-2111 FAX:805-498-3804 WEB:http://www.semtech.com

QUICK REFERENCE DATA

- V_R = 4kV - 10kV
- I_F = 300mA
- t_{rr} = 2.5µS
- I_R = 1.0µA

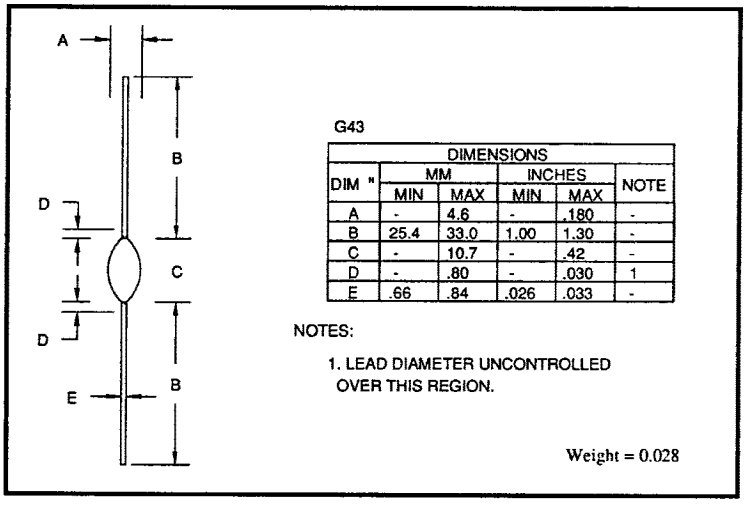
AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE STANDARD RECOVERY RECTIFIER DIODE

- Low reverse currents
- Hermetically sealed with Metoxilite fused metal oxide
- Good thermal shock resistance
- Monolythic 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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DIMENSIONS					
DIM "	MM		INCHES		NOTE
	MIN	MAX	MIN	MAX	
A	-	4.6	-	.180	-
B	25.4	33.0	1.00	1.30	-
C	-	10.7	-	.42	-
D	-	.80	-	.030	1
E	.66	.84	.026	.033	-

NOTES:

1. LEAD DIAMETER UNCONTROLLED OVER THIS REGION.

Weight = 0.028

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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^2t for fusing (t = 8.3mS) max.	I^2t	←	2.6	→		A^2S
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	→		µA
@ V_{RWM}, T_j = 100°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 = 5V , f = 1MHz	C_j	←	3.2	→		pF
Thermal resistance - junction to oil						
Unstirred @ 55°C	$R_{\theta JO}$	←	28	→		°C/W
Stirred @ 55°C	$R_{\theta JO}$	←	20	→		°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1oz copper.	$R_{\theta JA}$	←	91	→		°C/W

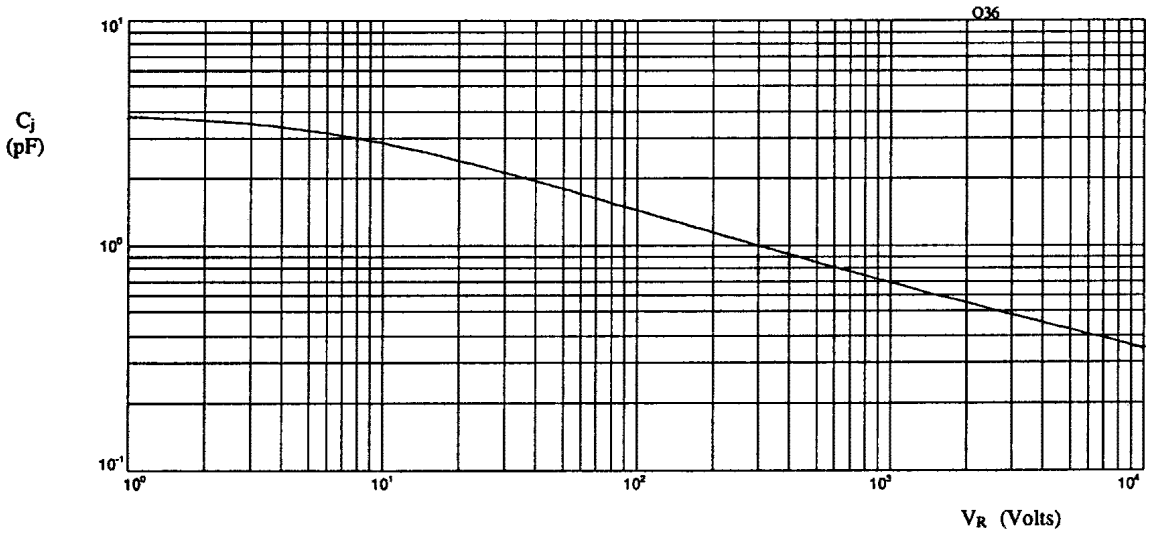

Fig 1. Typical junction capacitance as a function of reverse voltage.

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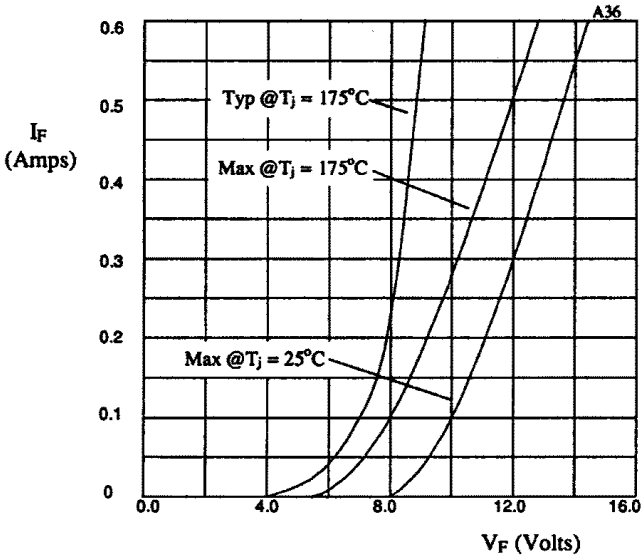

Fig 2. Forward voltage drop as a function of forward current.

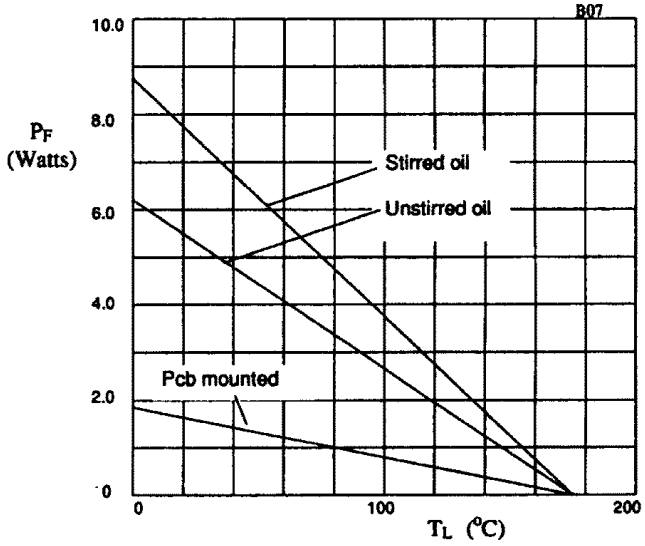

Fig 3. Power derating in air and oil.

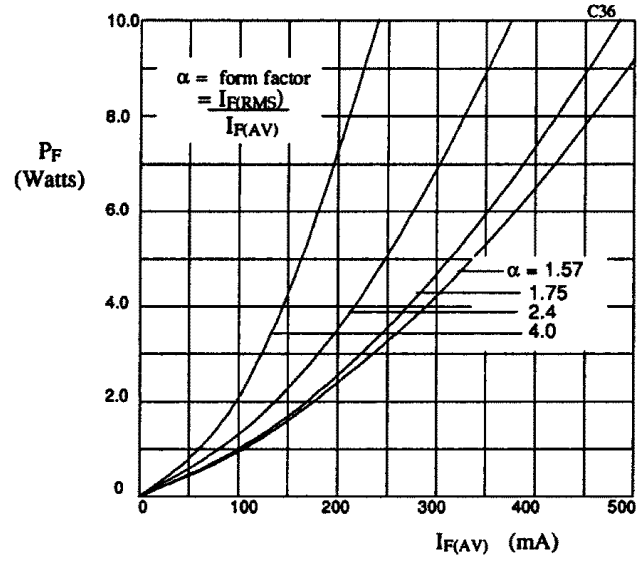

Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

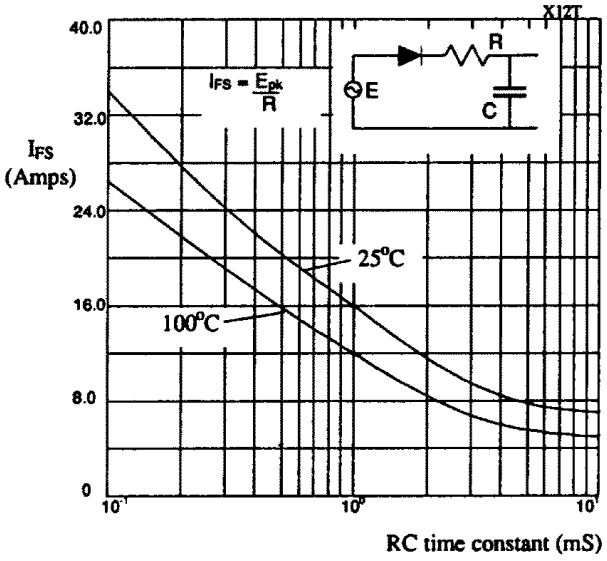

Fig 5. Maximum ratings for capacitive loads.

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