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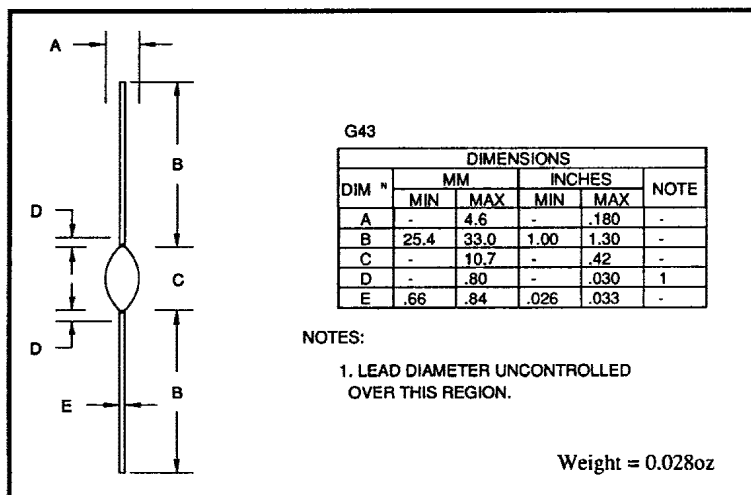## AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE FAST RECTIFIER DIODE

- Low reverse recovery time
- High thermal shock resistance
- Hermetically sealed with Metoxilite metal oxide
- Low switching losses
- Soft, non-snap off, recovery characteristics

QUICK REFERENCE DATA

- V_R = 7.5 -10kV
- I_F = 290mA
- t_{rr} = 300nS
- I_R = 1μA

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

	Symbol	SM75F	SM100F	Unit
Working reverse voltage	V_{RWM}	7500	10000	V
Repetitive reverse voltage	V_{RRM}	7500	10000	V
Average forward current (@ 55°C in oil)	$I_{F(AV)}$	← 0.29 →		A
Repetitive surge current (@ 55°C)	I_{FRM}	← 1.00 →		A
Non-repetitive surge current (t_p = 8.3mS, @ V_R & T_{jmax})	I_{FSM}	← 14.0 →		A
Storage temperature range	T_{STG}	← -65 to +175 →		^{o}C
Operating temperature range	T_{OP}	← -65 to +175 →		^{o}C

### MECHANICAL

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DIM^N	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 = 0.028oz

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CHARACTERISTICS   (@ 25°C unless otherwise specified)

	Symbol	SM75F SM100F	Unit
Average forward current max. (pcb mounted; $T_A = 55°C$)			
for sine wave	$I_{F(AV)}$	⟵— 0.11 —⟶	A
for square wave (d = 0.5)	$I_{F(AV)}$	⟵— 0.12 —⟶	A
Average forward current max. (unstirred oil at 55°C)			
for sine wave	$I_{F(AV)}$	⟵— 0.27 —⟶	A
for square wave	$I_{F(AV)}$	⟵— 0.29 —⟶	A
I^2t for fusing (t = 8.3mS) max.	I^2t	⟵— 0.81 —⟶	A^2S
Forward voltage drop max. @ I_F = 100mA, $T_j = 25°C$	V_F	⟵— 12.0 —⟶	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}	⟵— 300 —⟶	nS
Junction capacitance typ. @ V_R = 5V , f = 1MHz	C_j	⟵— 3.0 —⟶	ρF
Thermal resistance - junction to oil			
Stirred oil	$R_{θJO}$	⟵— 20 —⟶	°C/W
Unstirred oil	$R_{θJO}$	⟵— 28 —⟶	°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1oz copper.	$R_{θJA}$	⟵— 91 —⟶	°C/W

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Fig 1 Junction capacitance against reverse voltage.

C_j (pF)

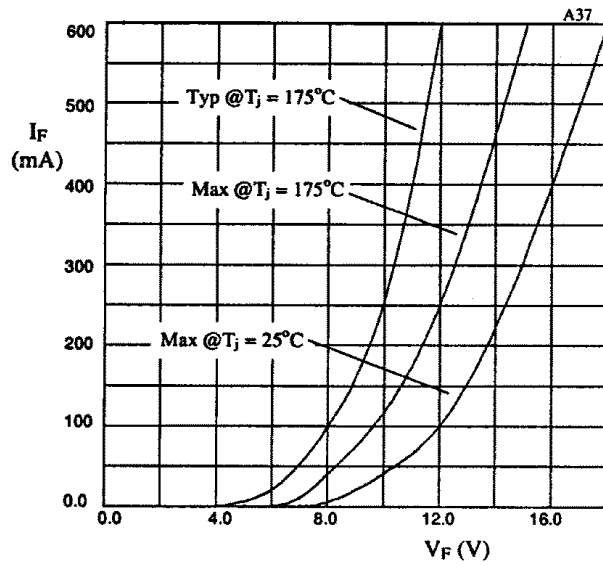V_R (volts)
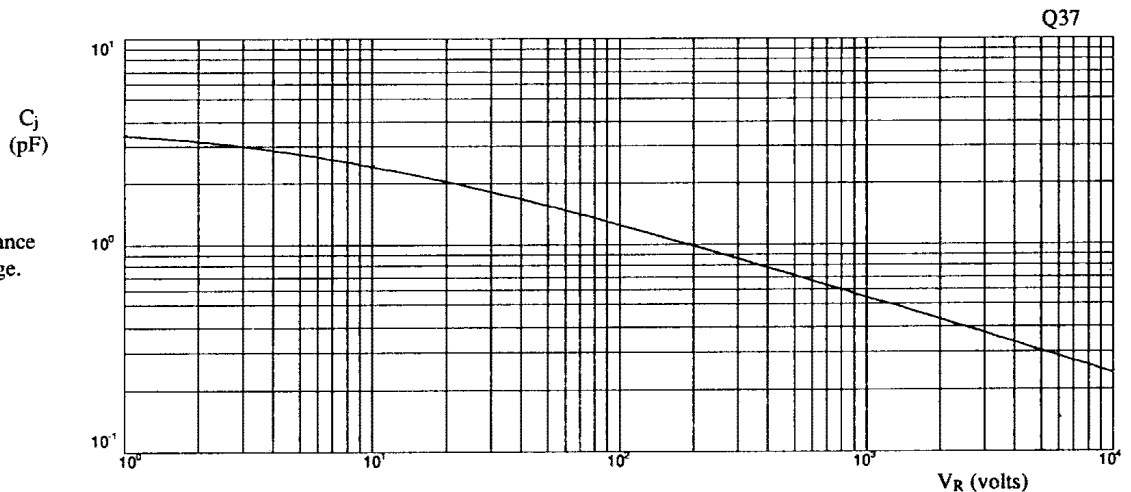
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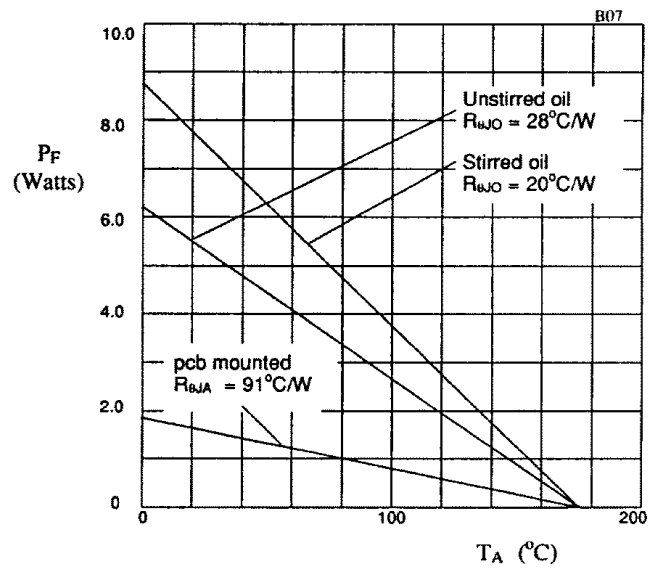Fig 2. Forward voltage drop as a function of forward current.
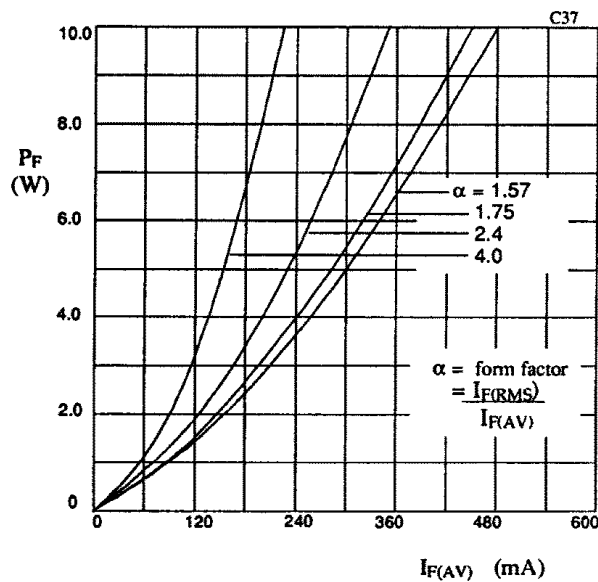

Fig 3. Power derating in air and oil.

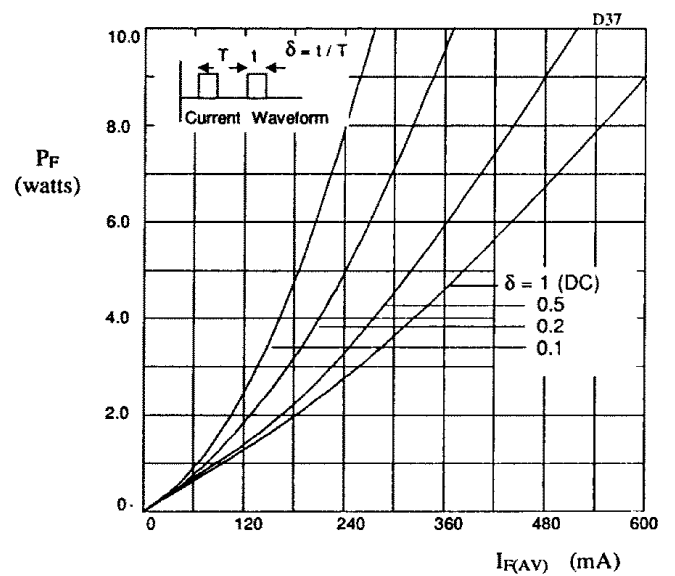Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

Fig 5. Forward power dissipation as a function of forward current, for square wave operation.