January 7, 1998

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AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE FAST RECTIFIER DIODE

- Low reverse recovery time
- Very low leakage current
- Glass passivated for hermetic sealing
- Avalanche capability
- Soft, non-snap off, recovery characteristics

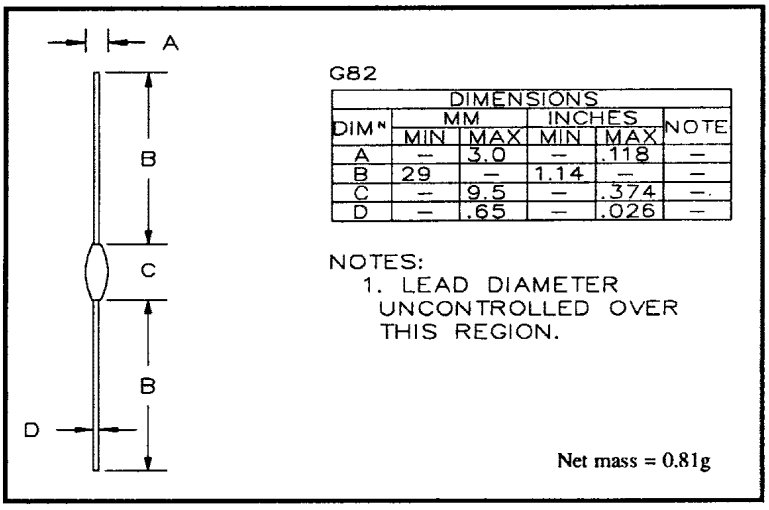
QUICK REFERENCE DATA

- V_R = 5 - 7.5kV
- I_F = 92mA
- t_{rr} = 250nS
- I_R = 0.03µA

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

	Symbol	PFM50	PFM75	Unit
Working reverse voltage	V_{RWM}	5000	7500	V
Repetitive reverse voltage	V_{RRM}	5650	8500	V
Surge reverse voltage	V_{RSM}	5650	8500	V
Average forward current (@ 55°C in oil)	$I_{F(AV)}$	← 92 →		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}	← 2.0 →		A
Storage temperature range	T_{STG}	← -65 to +150 →		°C
Operating temperature range	T_{OP}	← -65 to +150 →		°C

MECHANICAL



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DIMENSIONS					
DIM	MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	—	3.0	—	.118	—
B	29	—	1.14	—	—
C	—	9.5	—	.374	—
D	—	.65	—	.026	—

NOTES:
1. LEAD DIAMETER UNCONTROLLED OVER THIS REGION.

Net mass = 0.81g

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CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	PFM50 PFM75	Unit
Average forward current max. (pcb mounted; T_A = 55°C)			
for sine wave	$I_{F(AV)}$	← 47 →	mA
for square wave (d = 0.5)	$I_{F(AV)}$	← 50 →	mA
Average forward current max. (unstirred oil at 55°C)			
for sine wave	$I_{F(AV)}$	← 84 →	mA
for square wave	$I_{F(AV)}$	← 92 →	mA
I^2t for fusing (t = 8.3mS) max.	I^2t	← 0.017 →	A^2S
Forward voltage drop max. @ I_F = 25mA, T_j = 25°C	V_F	← 12.5 →	V
Reverse current max.			
@ V_{RWM}, T_j = 25°C	I_R	← 0.03 →	µA
@ V_{RWM}, T_j = 100°C	I_R	← 3.00 →	µA
Reverse recovery time max. 50mA I_F, 100mA I_R, 25mA I_{RR}.	t_{rr}	← 250 →	nS
Junction capacitance typ. @ V_R = 5V , f = 1MHz	C_j	← 0.75 →	pF
Thermal resistance - junction to oil			
Stirred oil	$R_{\theta JO}$	← 48 →	°C/W
Unstirred oil	$R_{\theta JO}$	← 64 →	°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1oz copper.	$R_{\theta JA}$	← 160 →	°C/W

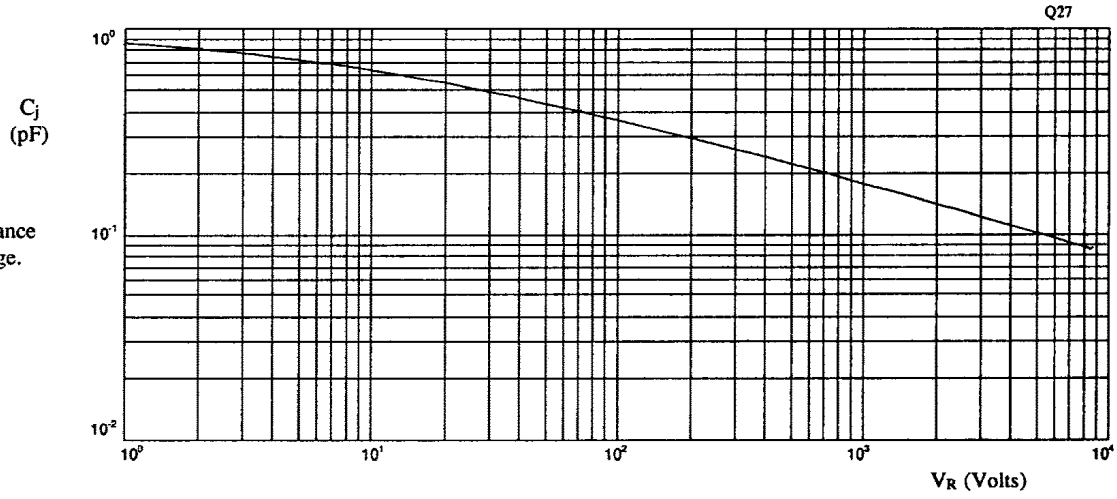

Fig 1 Junction capacitance against reverse voltage.

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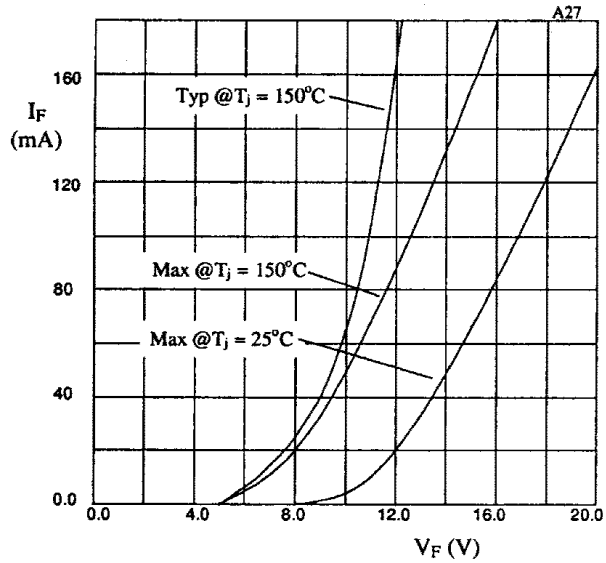

Fig 2. Forward voltage drop as a function of forward current.

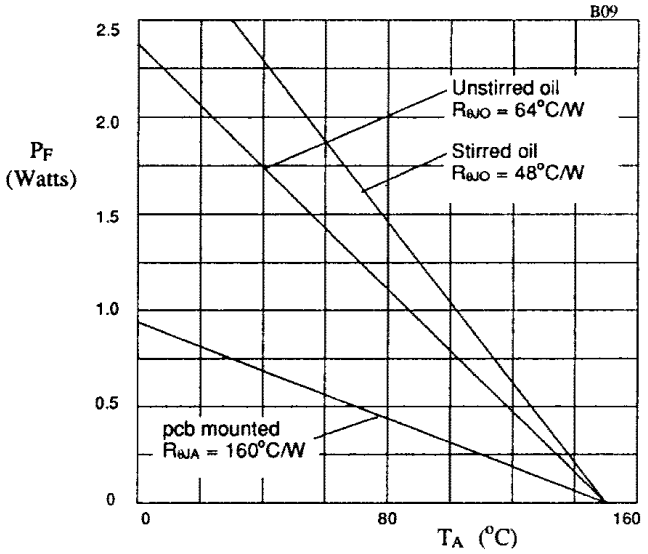

Fig 3. Power derating in air and oil.

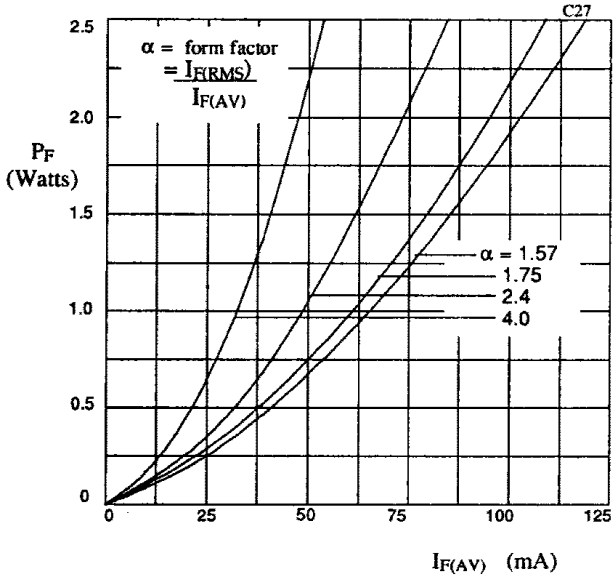

Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

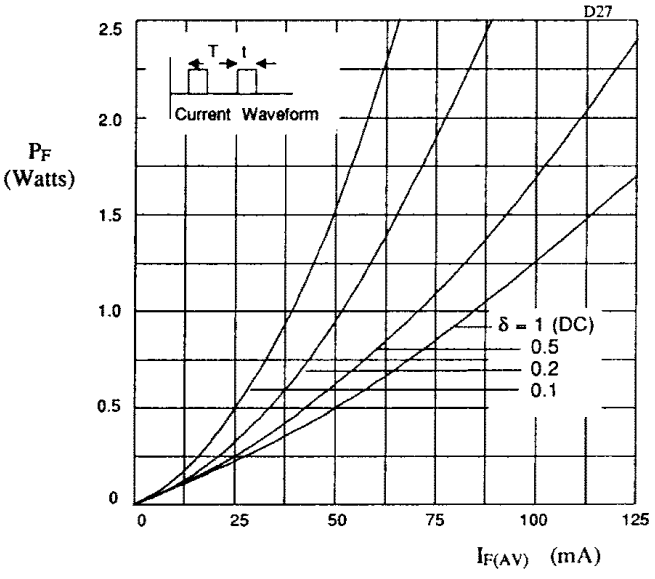

Fig 5. Forward power dissipation as a function of forward current, for square wave operation.