

January 7, 1998

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AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE SUPERFAST RECTIFIER DIODE

QUICK REFERENCE DATA

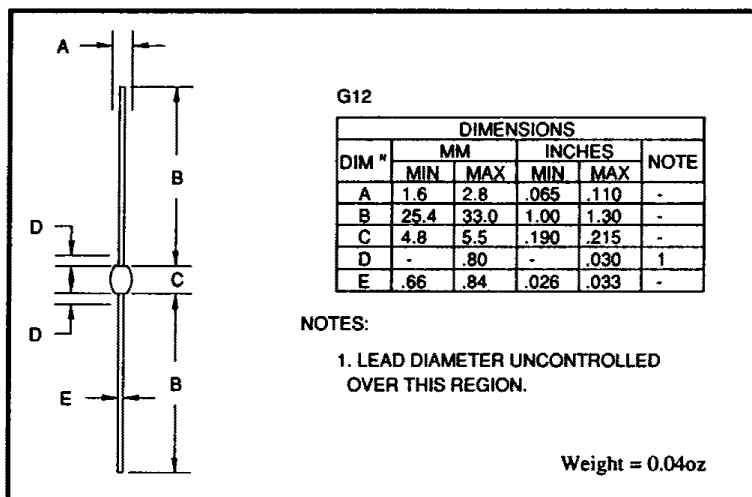
- Very low reverse recovery time
- High thermal shock resistance
- Hermetically sealed with Metoxilite metal oxide
- Low switching losses
- Soft, non-snap off, recovery characteristics

- $V_R = 3000V$
- $I_F = 0.36A$
- $t_{rr} = 50ns$
- $I_R = 1\mu A$

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

	Symbol	SFF30	Unit
Working reverse voltage	V_{RWM}	3000	V
Repetitive reverse voltage	V_{RRM}	3000	V
Average forward current (@ 55°C, in oil)	$I_{F(AV)}$	0.36	A
Repetitive surge current (@ 55°C in oil)	I_{FRM}	1.0	A
Non-repetitive surge current ($t_p = 8.3ms$, @ V_R & T_{jmax})	I_{FSM}	10.0	A
Storage temperature range	T_{STG}	-65 to +175	°C
Operating temperature range	T_{OP}	-65 to +175	°C

MECHANICAL



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ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	SFF30	Unit
Average forward current max. (pcb mounted; $T_A = 55^\circ\text{C}$) for sine wave	$I_{F(AV)}$	0.16	A
for square wave ($d = 0.5$)	$I_{F(AV)}$	0.17	A
Average forward current max. (oil at 55°C) for sine wave	$I_{F(AV)}$	0.33	A
for square wave	$I_{F(AV)}$	0.36	A
I^2t for fusing ($t = 8.3\text{mS}$) max.	I^2t	0.42	A^2S
Forward voltage drop max. @ $I_F = 0.175\text{A}$, $T_j = 25^\circ\text{C}$	V_F	7.00	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	25	μA
Reverse recovery time max. 50mA I_F , 100mA I_R , 25mA I_{RR} .	t_{rr}	50	nS
Junction capacitance typ. @ $V_R = 5\text{V}$, $f = 1\text{MHz}$	C_j	6.5	pF

THERMAL CHARACTERISTICS

	Symbol	SFF30	Unit
Thermal resistance - junction to oil Stirred oil	$R_{\theta JO}$	18	$^\circ\text{C/W}$
Unstirred oil	$R_{\theta JO}$	30	$^\circ\text{C/W}$
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	$R_{\theta JA}$	90	$^\circ\text{C/W}$

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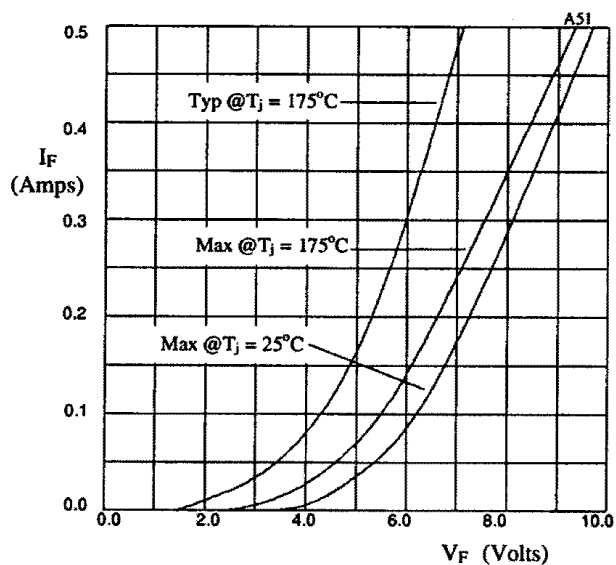


Fig 1. Forward voltage drop as a function of forward current.

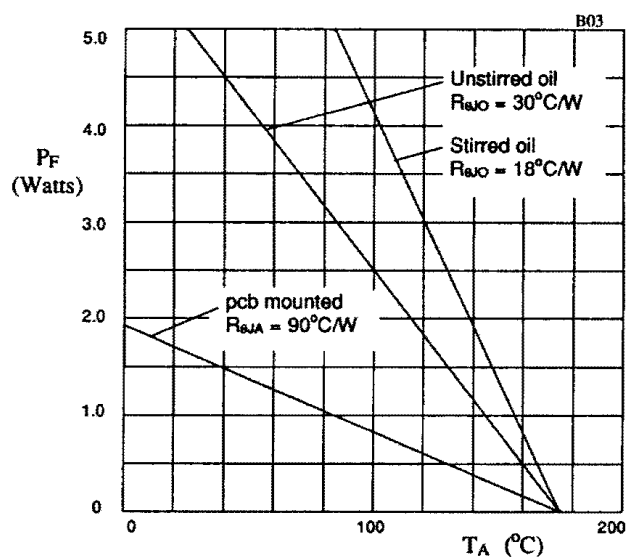


Fig 2. Power derating in air and oil.

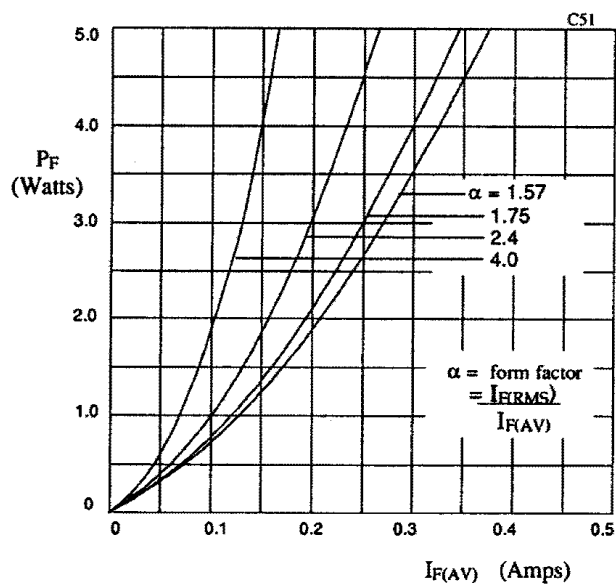


Fig 3. Forward power dissipation as a function of forward current, for sinusoidal operation.

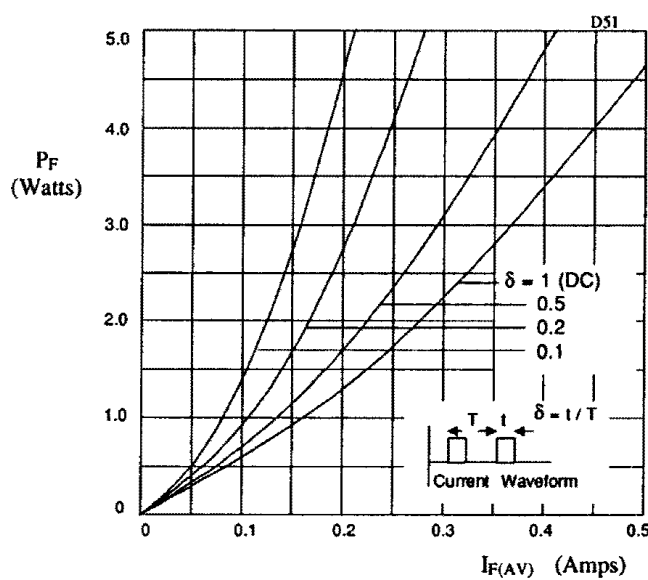


Fig 4. Forward power dissipation as a function of forward current, for square wave operation.