

January 7, 1998

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### AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE SUPERFAST RECTIFIER DIODE

### QUICK REFERENCE DATA

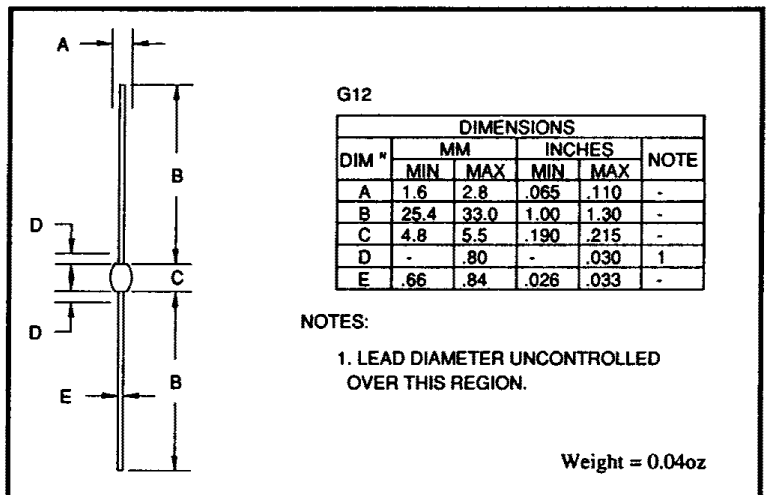
- Very low reverse recovery time
- High thermal shock resistance
- Hermetically sealed with Metoxilite metal oxide
- Low switching losses
- Soft, non-snap off, recovery characteristics

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

### 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 <sub>A</sub> = 55°C) for sine wave	I <sub>F(AV)</sub>	0.16	A
	I <sub>F(AV)</sub>	0.17	A
Average forward current max. (oil at 55°C) for sine wave	I <sub>F(AV)</sub>	0.33	A
	I <sub>F(AV)</sub>	0.36	A
I <sup>2</sup> t for fusing (t = 8.3mS) max.	I <sup>2</sup> t	0.42	A <sup>2</sup> S
Forward voltage drop max. @ I <sub>F</sub> = 0.175A, T <sub>j</sub> = 25°C	V <sub>F</sub>	7.00	V
Reverse current max. @ V <sub>RWM</sub> , T <sub>j</sub> = 25°C	I <sub>R</sub>	1.0	μA
	I <sub>R</sub>	25	μA
Reverse recovery time max. 50mA I <sub>F</sub> , 100mA I <sub>R</sub> ., 25mA I <sub>RR</sub> .	t <sub>rr</sub>	50	nS
Junction capacitance typ. @ V <sub>R</sub> = 5V, f = 1MHz	C <sub>j</sub>	6.5	pF

**THERMAL CHARACTERISTICS**

	Symbol	SFF30	Unit
Thermal resistance - junction to oil Stirred oil	R <sub>θJO</sub>	18	°C/W
	R <sub>θJO</sub>	30	°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	R <sub>θJA</sub>	90	°C/W

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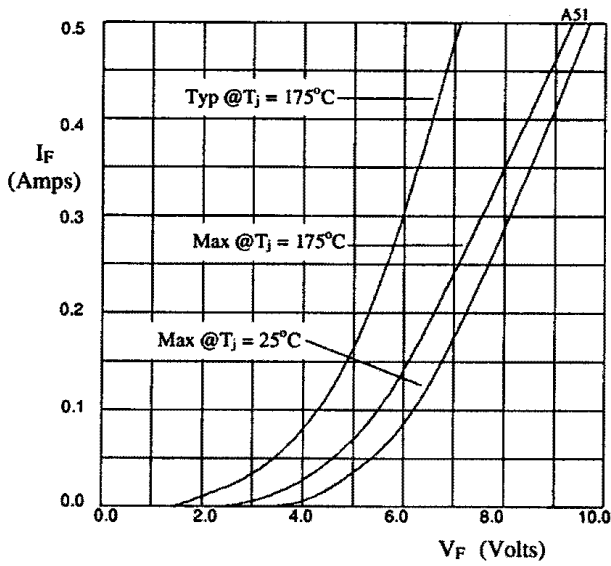


Fig 1. Forward voltage drop as a function of forward current.

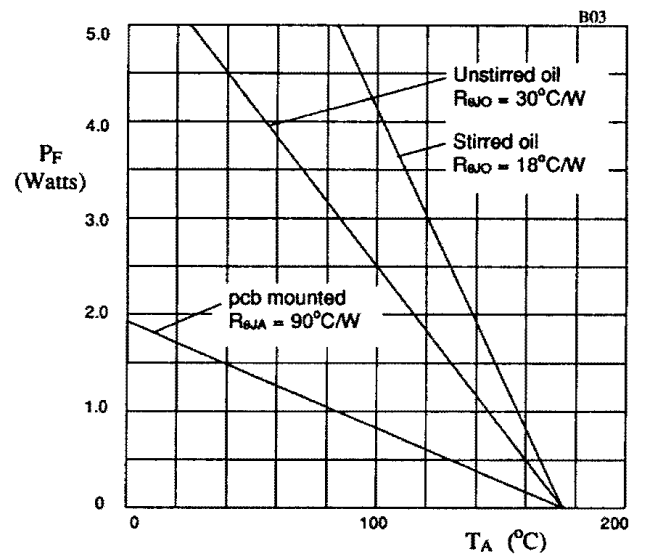


Fig 2. Power derating in air and oil.

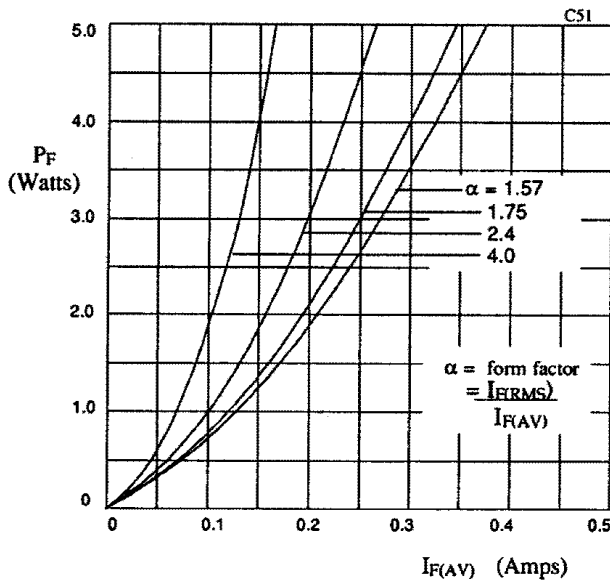


Fig 3. Forward power dissipation as a function of forward current, for sinusoidal operation.

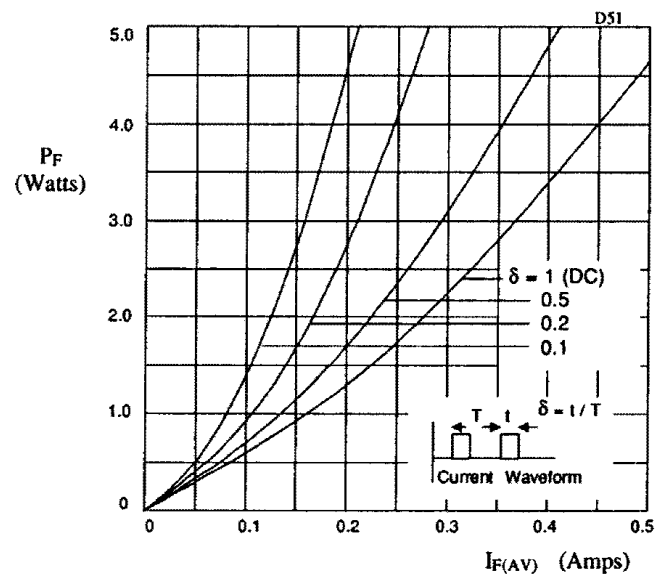


Fig 4. Forward power dissipation as a function of forward current, for square wave operation.