January 7, 1998

TEL:805-498-2111 FAX:805-498-3804 WEB:http://www.semtech.com

AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE SUPERFAST RECTIFIER DIODE

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

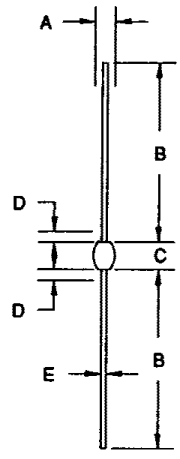
QUICK REFERENCE DATA

- V_R = 3000V
- I_F = 0.36A
- t_{rr} = 50nS
- I_R = 1µA

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



G12

DIM "	DIMENSIONS MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	1.6	2.8	.065	.110	-
B	25.4	33.0	1.00	1.30	-
C	4.8	5.5	.190	.215	-
D	-	.80	-	.030	1
E	.66	.84	.026	.033	-

NOTES:

1. LEAD DIAMETER UNCONTROLLED OVER THIS REGION.

Weight = 0.04oz

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ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	SFF30	Unit
Average forward current max. (pcb mounted; T_A = 55°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 = 8.3mS) max.	I^2t	0.42	A^2S
Forward voltage drop max. @ I_F = 0.175A, T_j = 25°C	V_F	7.00	V
Reverse current max.			
@ V_{RWM}, T_j = 25°C	I_R	1.0	µA
@ V_{RWM}, T_j = 100°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 = 5V , f = 1MHz	C_j	6.5	pF

THERMAL CHARACTERISTICS

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

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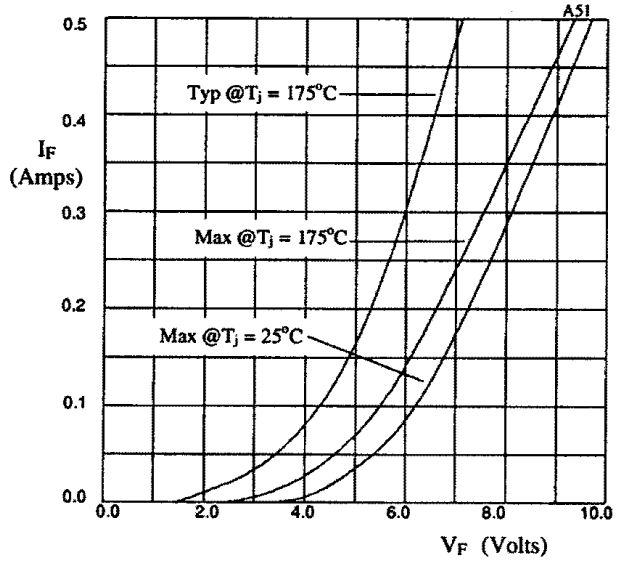

Fig 1. Forward voltage drop as a function of forward current.

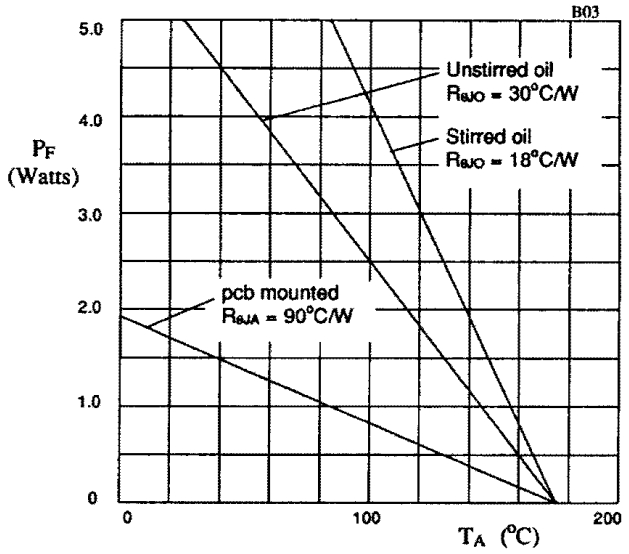

Fig 2. Power derating in air and oil.

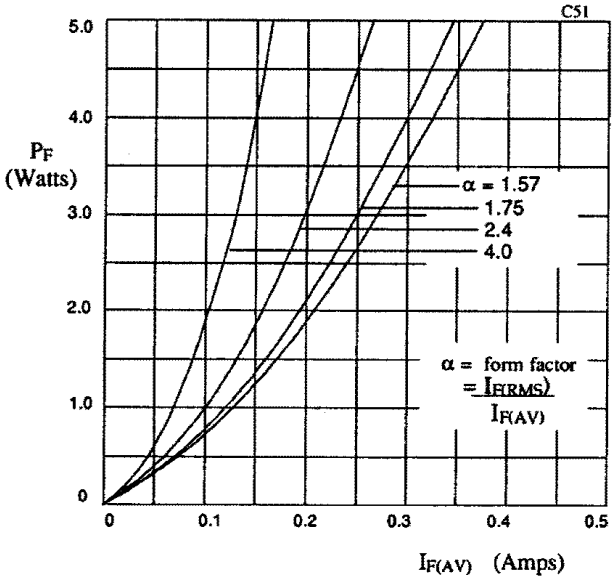

Fig 3. Forward power dissipation as a function of forward current, for sinusoidal operation.

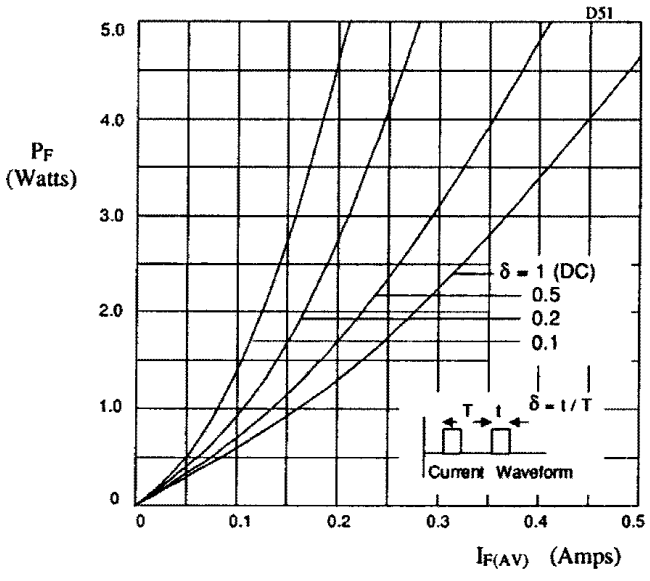

Fig 4. Forward power dissipation as a function of forward current, for square wave operation.

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