

January 7, 1998

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

### AXIAL LEADED HERMETICALLY SEALED SUPERFAST RECTIFIER DIODE

### QUICK REFERENCE DATA

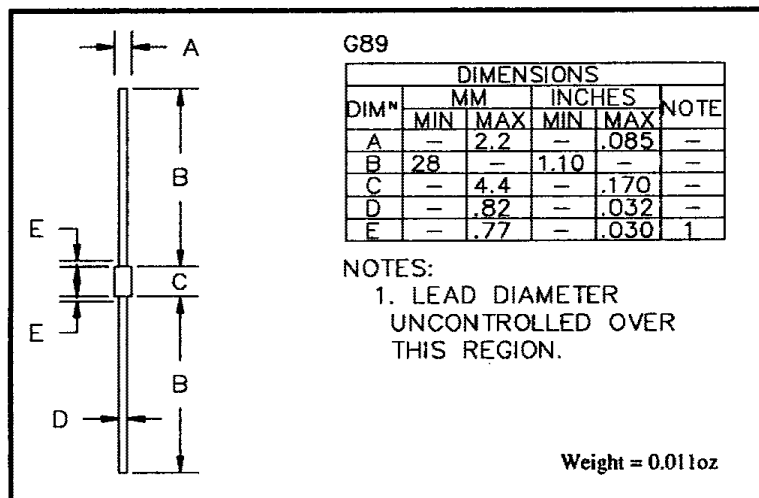
- Very low reverse recovery time
- Glass passivated for hermetic sealing
- Low switching losses
- Soft, non-snap off, recovery characteristics
- Avalanche capability

- $V_R = 400V$
- $I_F = 1.7A$
- $t_{rr} = 50nS$
- $I_R = 1\mu A$

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

	Symbol	IPFF4	Unit
Working reverse voltage	$V_{RWM}$	400	V
Repetitive reverse voltage	$V_{RRM}$	400	V
Average forward current (@ 55°C, lead length = 0.375")	$I_{F(AV)}$	1.7	A
Repetitive surge current (@ 55°C in free air, lead length 0.375")	$I_{FRM}$	13.0	A
Non-repetitive surge current ( $t_p = 8.3mS$ , @ $V_R$ & $T_{jmax}$ )	$I_{FSM}$	27.0	A
Storage temperature range	$T_{STG}$	-65 to +175	°C
Operating temperature range	$T_{OP}$	-65 to +175	°C

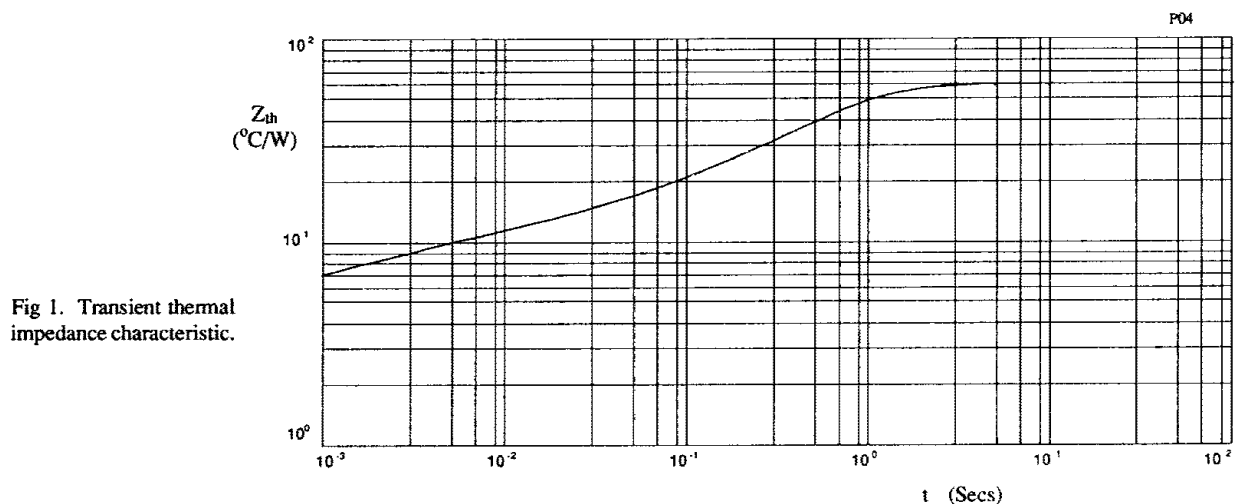
### MECHANICAL



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### CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	IPFF4	Unit
Average forward current max. (pcb mounted; $T_A = 55^\circ\text{C}$ ) for sine wave	$I_{F(AV)}$	1.0	A
	$I_{F(AV)}$	1.1	A
Average forward current max. ( $T_L = 55^\circ\text{C}$ ; $L = 3/8"$ ) for sine wave	$I_{F(AV)}$	1.6	A
	$I_{F(AV)}$	1.7	A
$I^2t$ for fusing ( $t = 8.3\text{ms}$ ) typ.	$I^2t$	3.0	$\text{A}^2\text{S}$
Forward voltage drop max. @ $I_F = 1.0\text{A}$ , $T_j = 25^\circ\text{C}$	$V_F$	1.05	V
Reverse current max. @ $V_{RWM}$ , $T_j = 25^\circ\text{C}$	$I_R$	1.0	$\mu\text{A}$
	$I_R$	10	$\mu\text{A}$
Reverse recovery time max. 0.5A $I_F$ to 1.0A $I_R$ . Recovers to 0.25A $I_{RR}$ .	$t_{rr}$	50	nS
Junction capacitance typ. @ $V_R = 5\text{V}$ , $f = 1\text{MHz}$	$C_j$	20	$\rho\text{F}$
Thermal resistance Junction to lead - lead length = 0.375" Junction to amb. on 0.06" thick pcb 1oz copper.	$R_{\theta JL}$	60	$^\circ\text{C/W}$
	$R_{\theta JA}$	120	$^\circ\text{C/W}$



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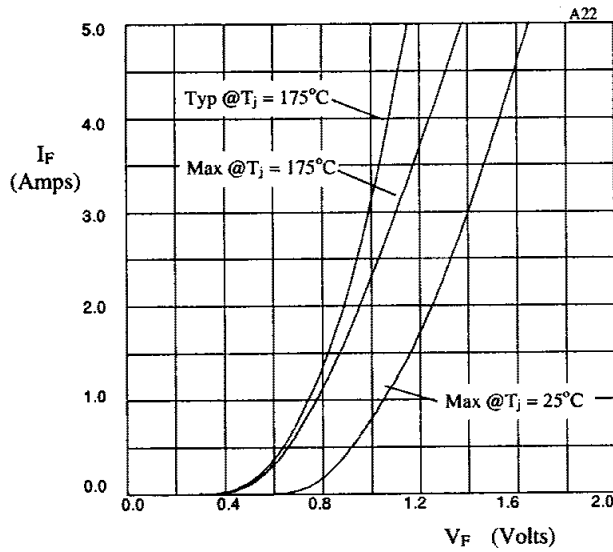


Fig 2. Forward voltage drop as a function of forward current.

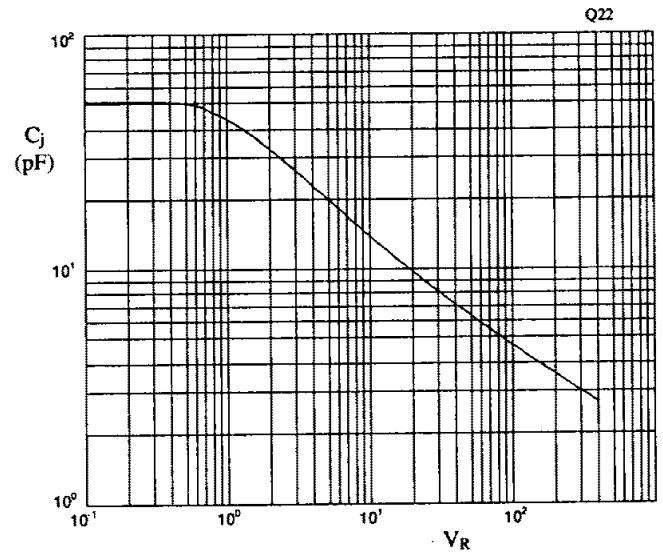


Fig 3. Typical junction capacitance as a function of reverse voltage.

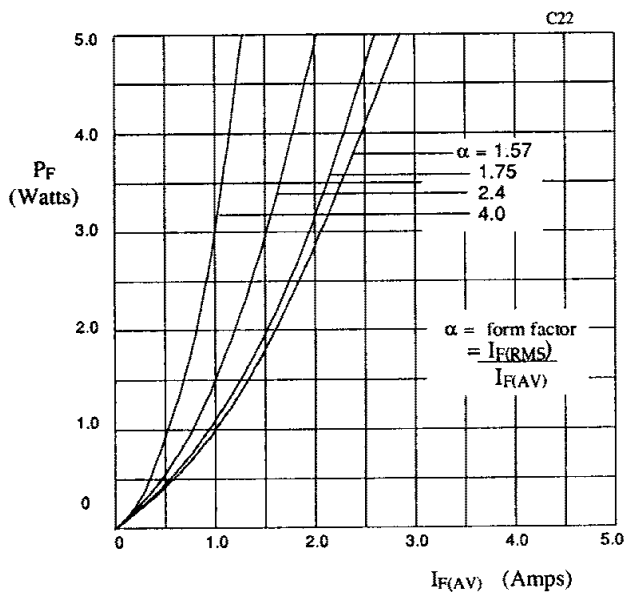


Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

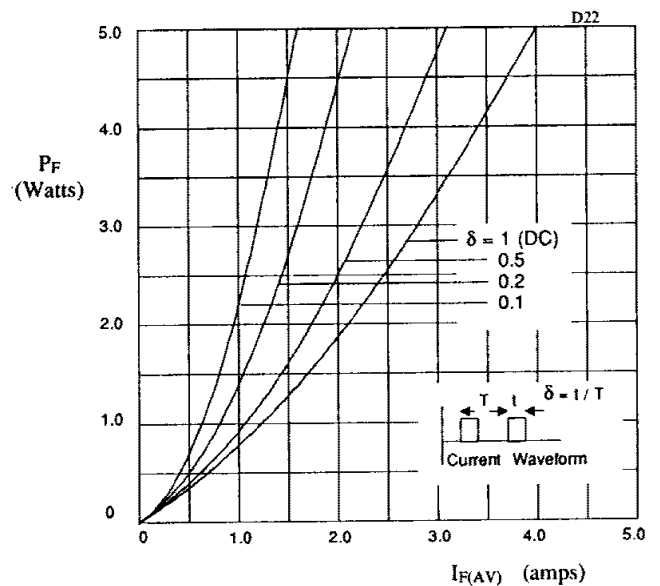


Fig 5. Forward power dissipation as a function of forward current, for square wave operation.