

SEMTECH

**RECTIFIER, up to 1kV, 1.25A,
30-75ns**

**PFF2
PFF6**

**PFF4
PFF8**

PFF0

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

**AXIAL LEADED HERMETICALLY SEALED
SUPERFAST RECTIFIER DIODE**

**QUICK
REFERENCE DATA**

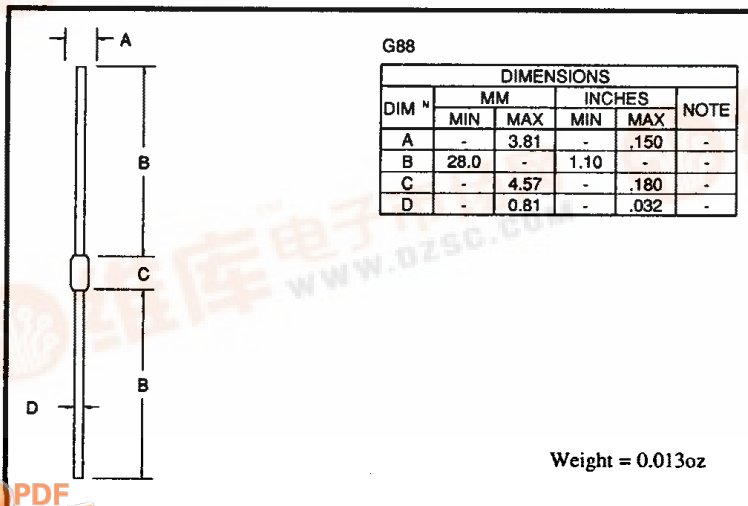
- Very low reverse recovery time
- Glass passivated for hermetical sealing
- Low switching losses
- Avalanche capability
- Soft, non-snap off, recovery characteristics

- $V_R = 200 - 1000V$
- $I_F = 1.25A$
- $t_{rr} = 30 - 75ns$
- $I_R = 1\mu A$

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

	Symbol	PFF2	PFF4	PFF6	PFF8	PFF0	Unit
Working reverse voltage	V_{RWM}	200	400	600	800	1000	V
Repetitive reverse voltage	V_{RRM}	200	400	600	800	1000	V
Average forward current (@ 55°C, lead length = 0.375")	$I_{F(AV)}$	←		1.25	→		A
Repetitive surge current (@ 55°C in free air, lead length 0.375")	I_{FRM}	←		4.25	→		A
Non-repetitive surge current ($t_p = 8.3ms$, @ V_R & T_{jmax})	I_{FSM}	←		22.0	→		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	PFF2	PFF4	PFF6	PFF8	PFF0	Unit
Average forward current max. (pcb mounted; T _A = 55°C) for sine wave	I _{F(AV)}	←————— 0.7 —————→					A
	I _{F(AV)}	←————— 0.75 —————→					A
Average forward current max. (T _L = 55°C; L = 3/8") for sine wave	I _{F(AV)}	←————— 1.15 —————→					A
	I _{F(AV)}	←————— 1.25 —————→					A
I ² t for fusing (t = 8.3mS) max.	I ² t	←————— 2.00 —————→					A ² S
Forward voltage drop max. @ I _F = 1.0A, T _j = 25°C	V _F	←————— 2.50 —————→					V
Reverse current max. @ V _{RWM} , T _j = 25°C	I _R	←————— 1.0 —————→					μA
	I _R	←————— 10.0 —————→					μA
Reverse recovery time max. 0.5A I _F to 1.0A I _R . Recovers to 0.25A I _{RR} .	t _{rr}	30	30	30	75	75	nS
Junction capacitance typ. @ V _R = 5V, f = 1MHz	C _j	←————— 30 —————→					ρF

THERMAL CHARACTERISTICS

	Symbol	PFF2	PFF4	PFF6	PFF8	PFF0	Unit
Thermal resistance - junction to lead Lead length = 0.375"	R _{θJL}	←————— 47 —————→					°C/W
	R _{θJL}	←————— 19 —————→					°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	R _{θJA}	←————— 100 —————→					°C/W

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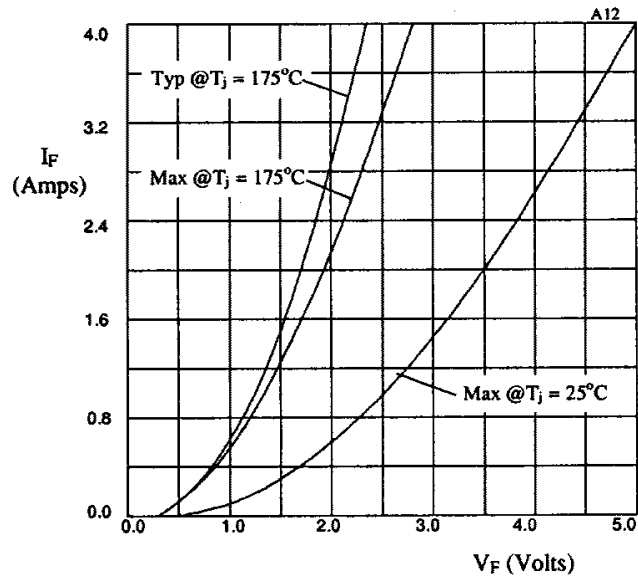


Fig 1. Forward voltage drops as a function of forward current

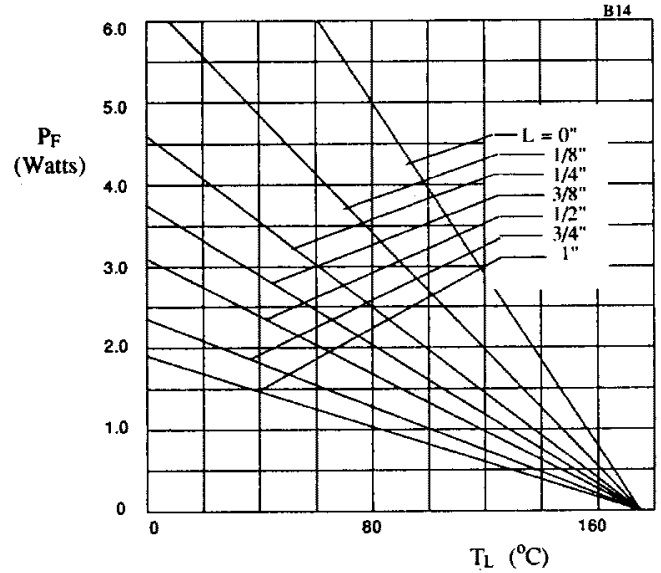


Fig 2. Maximum power versus lead temperature.

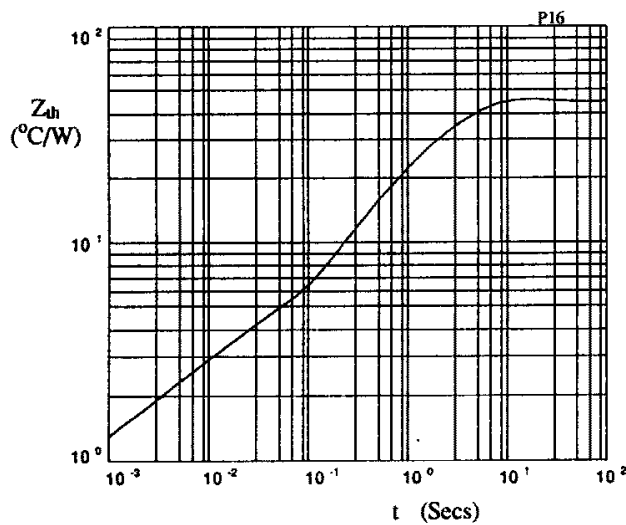


Fig 3. Transient thermal impedance characteristic.

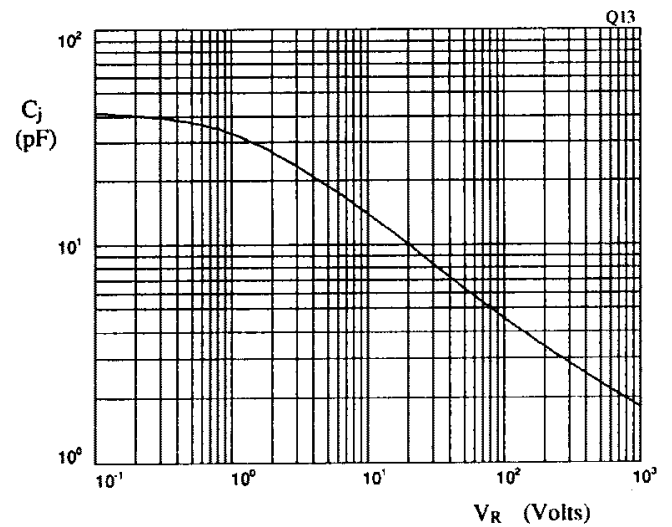


Fig 4. Typical junction capacitance as a function of reverse voltage.

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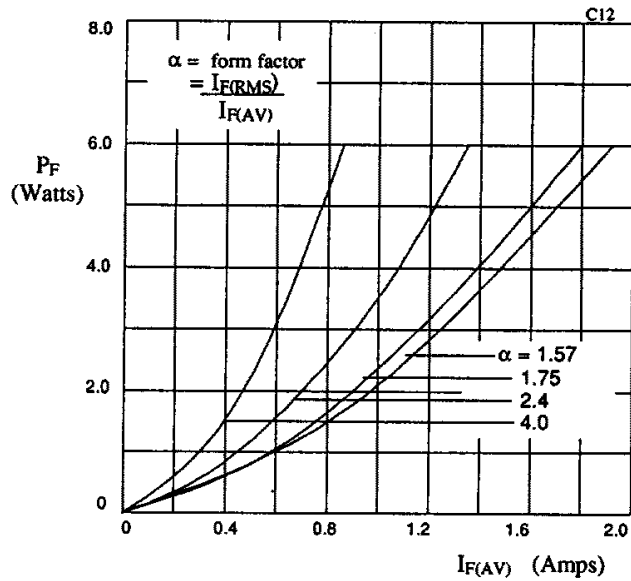


Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

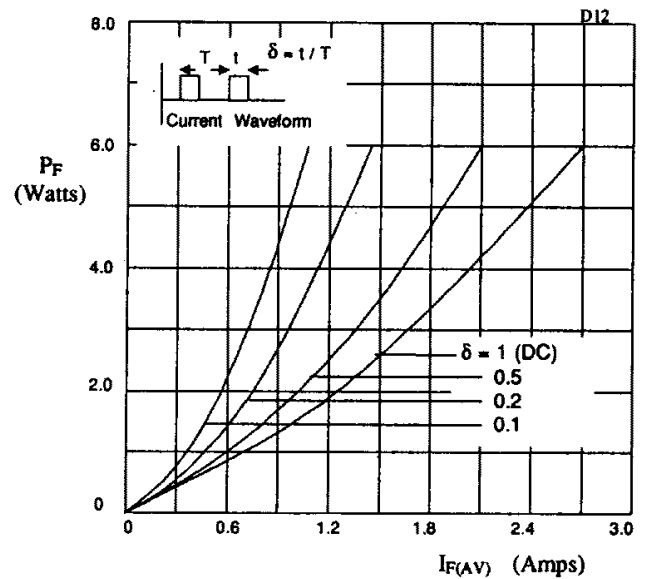


Fig 6. Forward power dissipation as a function of forward current, for square wave operation.

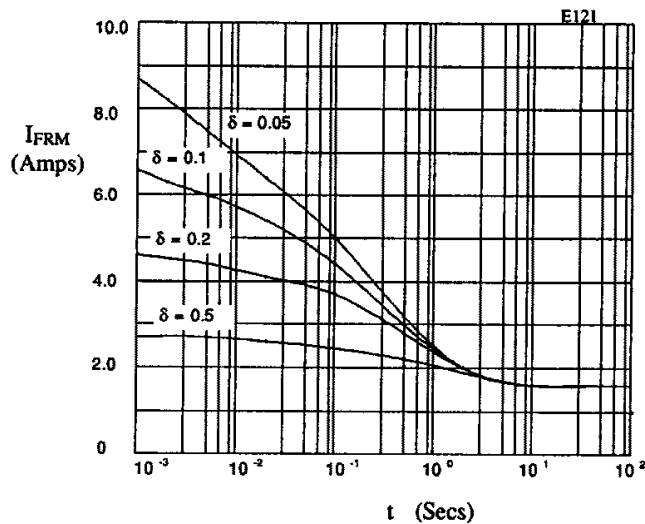


Fig 7. Typical repetitive forward current as a function of pulse time at 55°C ; $R_{\theta JL} = 45^\circ\text{C/W}$; V_{RWM} during $1 - \delta$.

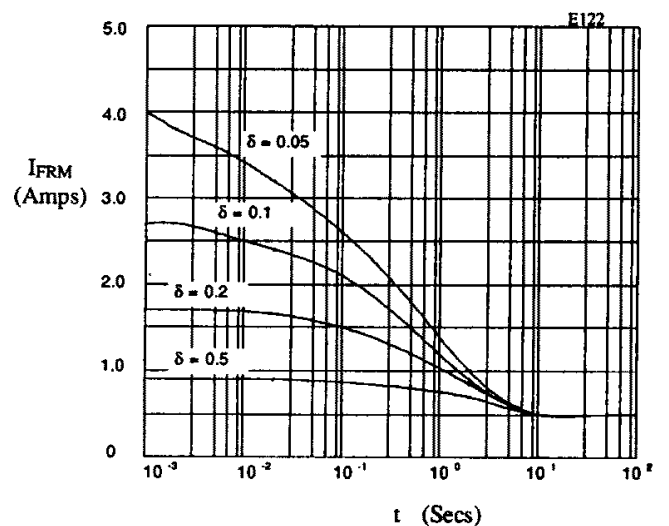


Fig 8. Typical repetitive forward current as a function of pulse time at 100°C ; $R_{\theta JL} = 100^\circ\text{C/W}$; V_{RWM} during $1 - \delta$.