

SEMTECH**RECTIFIER, up to 1kV, 1.8A, 300ns****PF8
PF0**

January 7, 1998

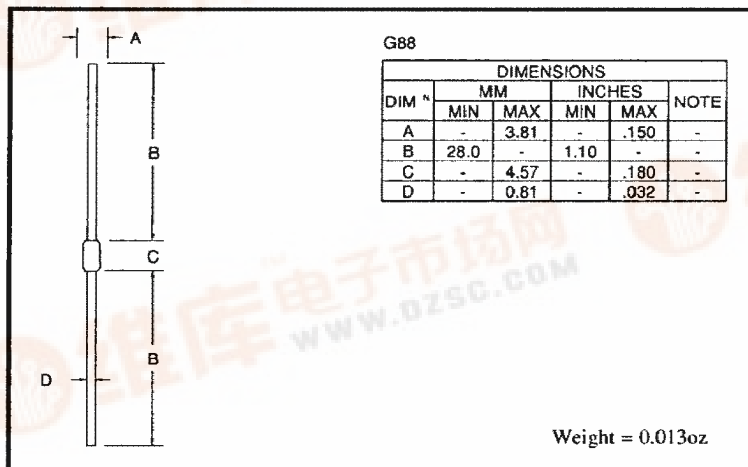
TEL:805-498-2111 FAX:805-498-3804 WEB:<http://www.semtech.com>**AXIAL LEADED HERMETICALLY SEALED
FAST RECTIFIER DIODE****QUICK
REFERENCE DATA**

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

- $V_R = 800 \text{ \& } 1000\text{V}$
- $I_F = 1.8\text{A}$
- $t_{rr} = 300\text{nS}$
- $I_R = 1\mu\text{A}$

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

	Symbol	PF8	PF0	Unit
Working reverse voltage	V_{RWM}	800	1000	V
Repetitive reverse voltage	V_{RRM}	800	1000	V
Surge reverse voltage	V_{RSM}	900	1100	V
Average forward current (@ 55°C, lead length 0.375")	$I_{F(AV)}$	← 1.8 →		A
Repetitive surge current (@ 55°C in free air, lead length 0.375")	I_{FRM}	← 10 →		A
Non-repetitive surge current ($t_p = 8.3\text{mS}$, @ V_R & T_{jmax})	I_{FSM}	← 38 →		A
Storage temperature range	T_{STG}	-65 to +175		°C
Operating temperature range	T_{OP}	-65 to +175		°C

MECHANICAL

These products are available in Europe to DEF STAN 59-61 (PART 80)/043 to F and FX levels.

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ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	PF8	PF0	Unit
Average forward current max. (pcb mounted; T _A = 55°C) for sine wave	I _{F(AV)}	← 0.95 →		A
for square wave (d = 0.5)	I _{F(AV)}	← 1.00 →		A
Average forward current max. (T _L = 55°C; L = 3/8") for sine wave	I _{F(AV)}	← 1.70 →		A
for square wave	I _{F(AV)}	← 1.80 →		A
I ² t for fusing (t = 8.3mS) max.	I ² t	← 6.0 →		A ² S
Forward voltage drop max. @ I _F = 1.5A, T _j = 25°C	V _F	← 1.35 →		V
Reverse current max. @ V _{RWM} , T _j = 25°C	I _R	← 1.0 →		μA
@ V _{RWM} , T _j = 100°C	I _R	← 10 →		μA
Reverse recovery time max. 0.5A I _F to 1.0A I _R . Recovers to 0.25A I _{RR} .	t _{rr}	← 300 →		nS
Junction capacitance typ. @ V _R = 5V, f = 1MHz	C _j	← 18 →		pF

THERMAL CHARACTERISTICS

	Symbol	PF8	PF0	Unit
Thermal resistance - junction to lead Lead length = 0"	R _{θJL}	← 19 →		°C/W
Lead length = 0.375"	R _{θJL}	← 47 →		°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	R _{θJA}	← 100 →		°C/W

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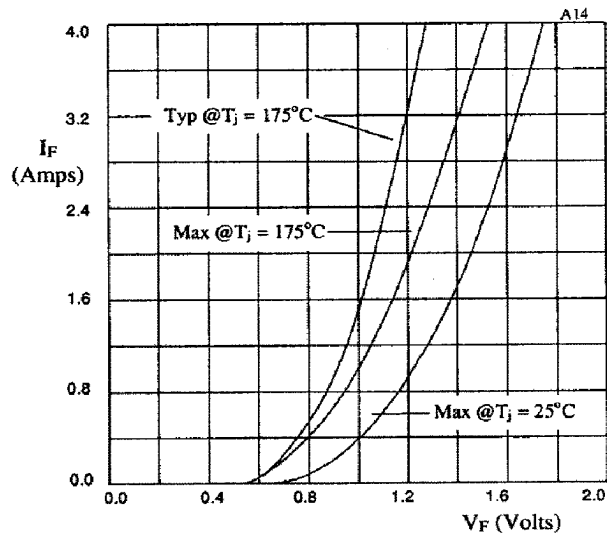


Fig 1. Forward voltage drop as a function of forward current.

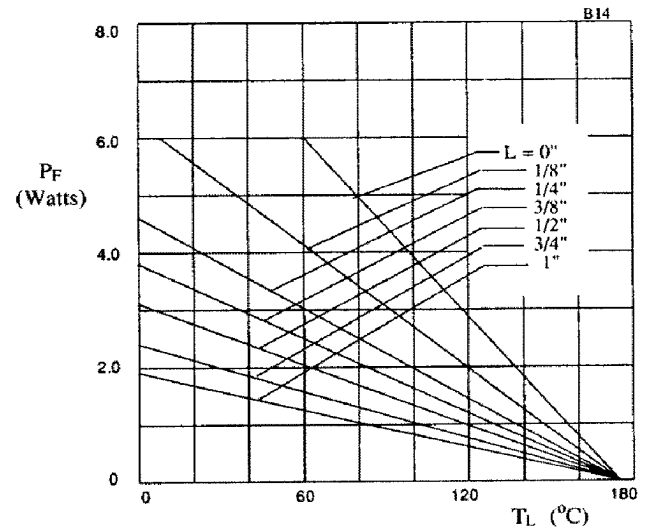


Fig 2. Maximum power versus lead temperature.

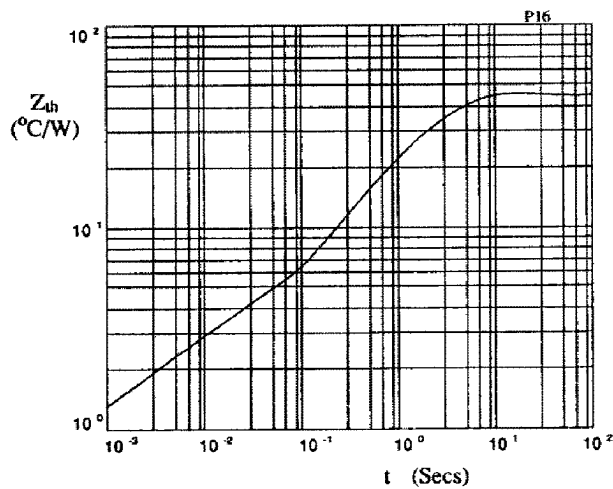


Fig 3. Transient thermal impedance characteristic.

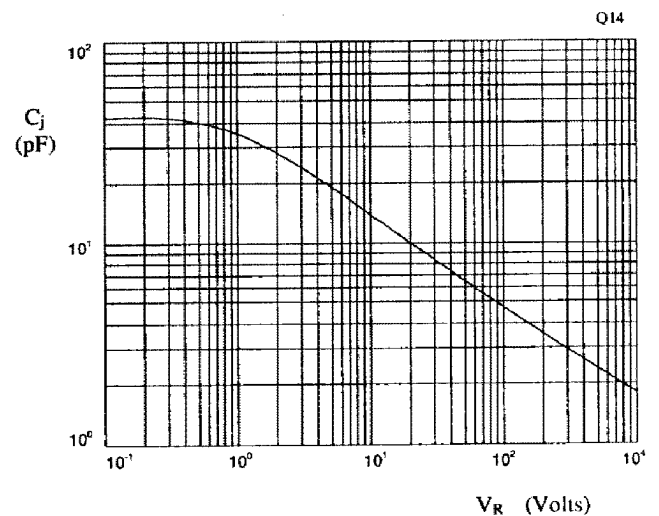


Fig 4. Typical junction capacitance as a function of reverse voltage.

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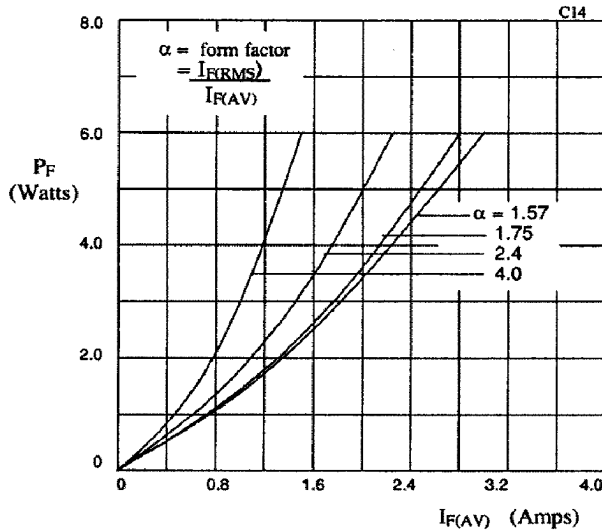


Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

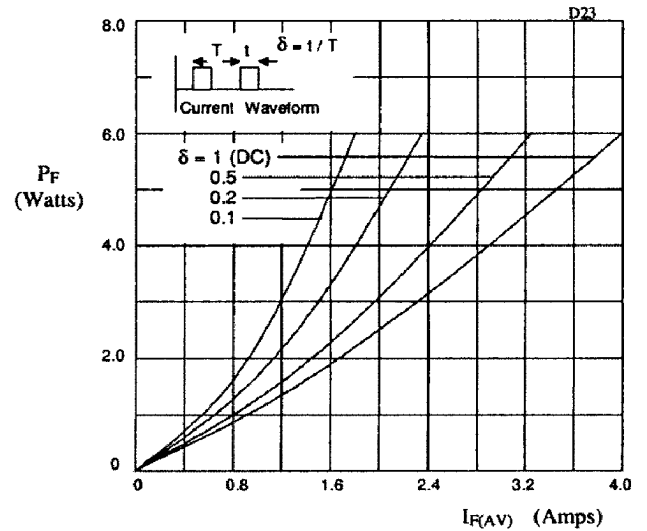


Fig 6. Forward power dissipation as a function of forward current, for square wave operation.

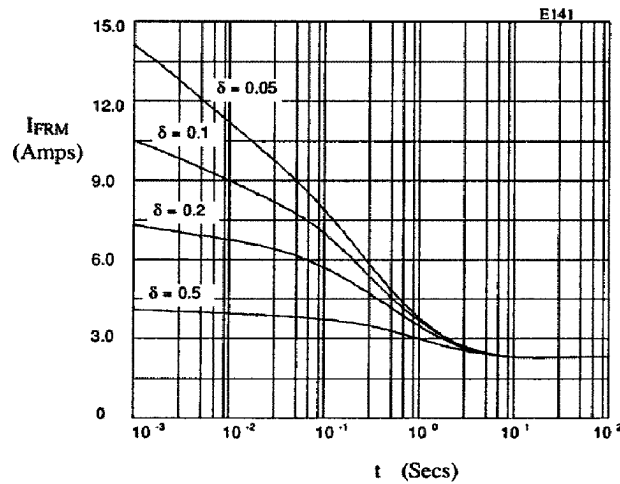


Fig 7. Typical repetitive forward current as a function of pulse width at 55°C; $R_{\theta JL} = 45$ °C/W; V_{RWM} during $1 - \delta$.

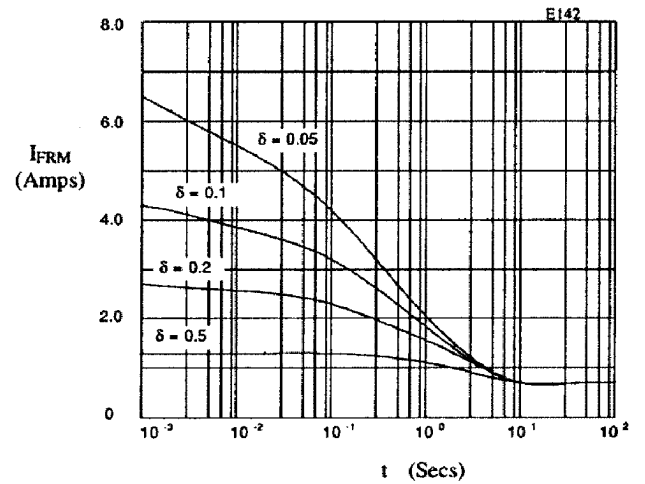


Fig 8. Typical repetitive forward current as a function of pulse width at 100°C; $R_{\theta JL} = 100$ °C/W; V_{RWM} during $1 - \delta$.