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January 7, 1998

AXIAL LEADED HERMETICALLY SEALED FAST RECTIFIER DIODE

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

QUICK REFERENCE DATA

- V_R = 1000V
- I_F = 2.7A
- t_{rr} = 150nS
- I_R = 5μA

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

	Symbol	3PFR0	Unit
Working reverse voltage	V_{RWM}	1000	V
Repetitive reverse voltage	V_{RRM}	1000	V
Surge reverse voltage	V_{RSM}	1100	V
Average forward current (@ 55°C, lead length 0.375")	$I_{F(AV)}$	2.7	A
Repetitive surge current (@ 55°C in free air, lead length 0.375")	I_{FRM}	21	A
Non-repetitive surge current (t_p = 8.3mS, @ V_R & T_{jmax})	I_{FSM}	70	A
Storage temperature range	T_{STG}	-65 to +175	°C
Operating temperature range	T_{OP}	-65 to +175	°C

MECHANICAL

G83

DIM "	MM		INCHES		NOTE
	MIN	MAX	MIN	MAX	
A	-	4.50	-	.177	-
B	28.0	-	1.10	-	-
C	-	5.00	-	.197	-
D	-	1.35	-	.053	-

Weight = 0.04oz

ELECTRICAL CHARACTERISTICS   (@ 25°C unless otherwise specified)

	Symbol	3PFR0	Unit
Average forward current max. (pcb mounted; $T_A = 55^o$C) for sine wave for square wave (d = 0.5)	$I_{F(AV)}$ $I_{F(AV)}$	1.15 1.20	A A
Average forward current max. ($T_L = 55^o$C; L = 3/8") for sine wave for square wave	$I_{F(AV)}$ $I_{F(AV)}$	2.60 2.70	A A
I^2t for fusing (t = 8.3mS) max.	I^2t	20	A^2S
Forward voltage drop max. @ I_F = 2.0A, $T_j = 25^o$C	V_F	1.5	V
Reverse current max. @ V_{RWM}, $T_j = 25^o$C @ V_{RWM}, $T_j = 100^o$C	I_R I_R	5.0 25	μA μA
Reverse recovery time max. 0.5A I_F to 1.0A I_R. Recovers to 0.25A I_{RR}.	t_{rr}	150	nS
Junction capacitance typ. @ V_R = 5V , f = 1MHz	C_j	70	ρF

THERMAL CHARACTERISTICS

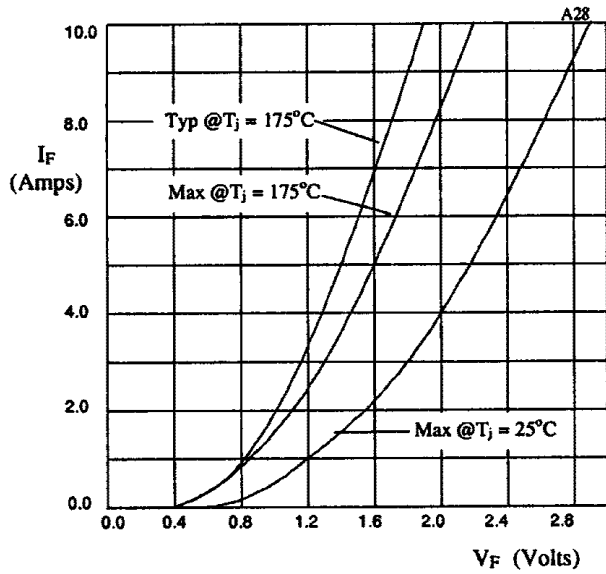|	Symbol	3PFR0	Unit
Thermal resistance - junction to lead Lead length = 0" Lead length = 0.375"	$R_{\theta JL}$ $R_{\theta JL}$	12 26	^{o}C/W ^{o}C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	$R_{\theta JA}$	75	^{o}C/W

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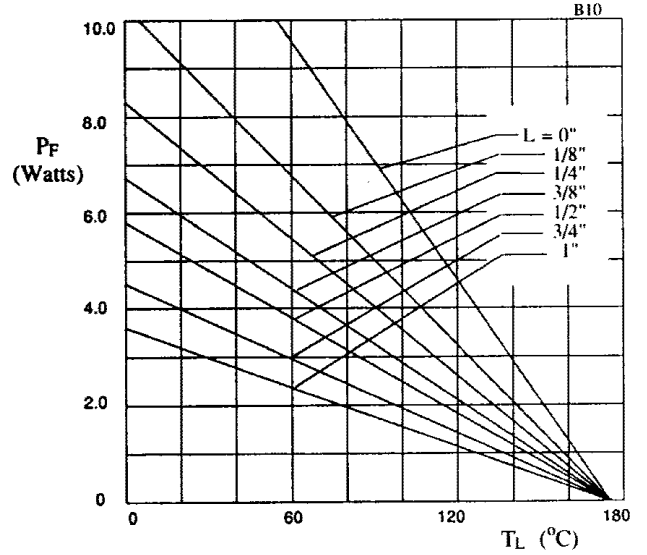of forward current.

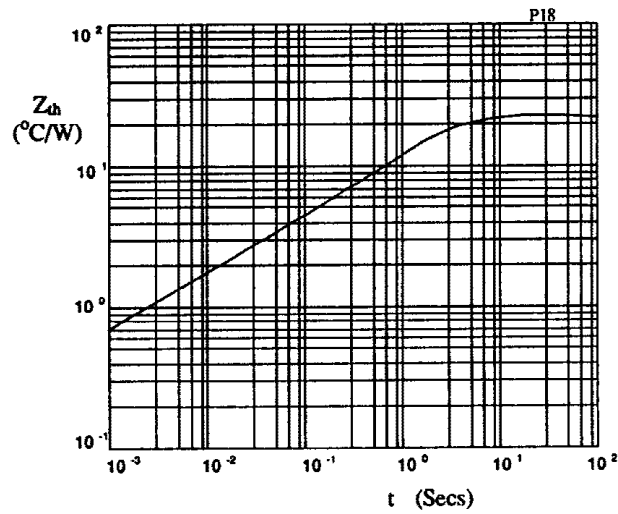Fig 2. Maximum power versus lead temperature.

Fig 3. Transient thermal impedance characteristic.
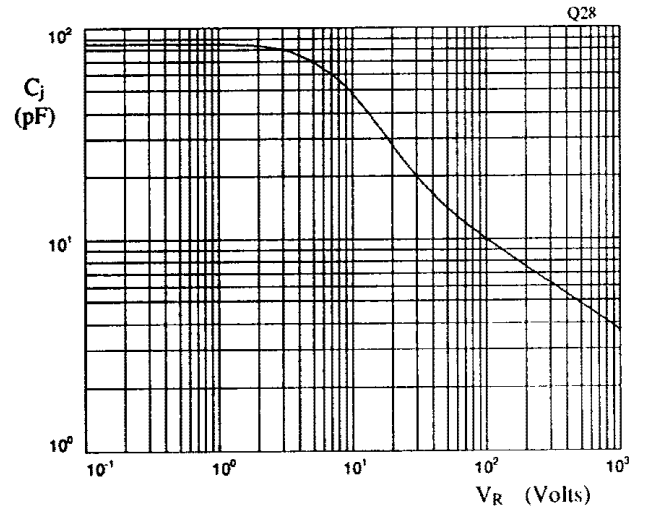

Fig 4. Typical junction capacitance as a function of
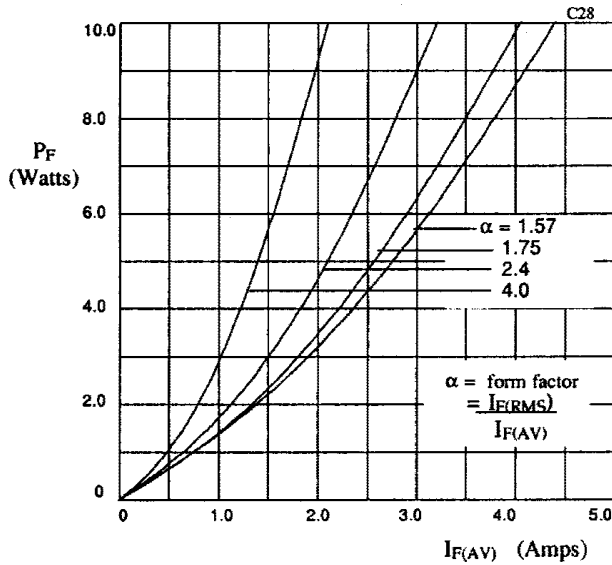reverse voltage.

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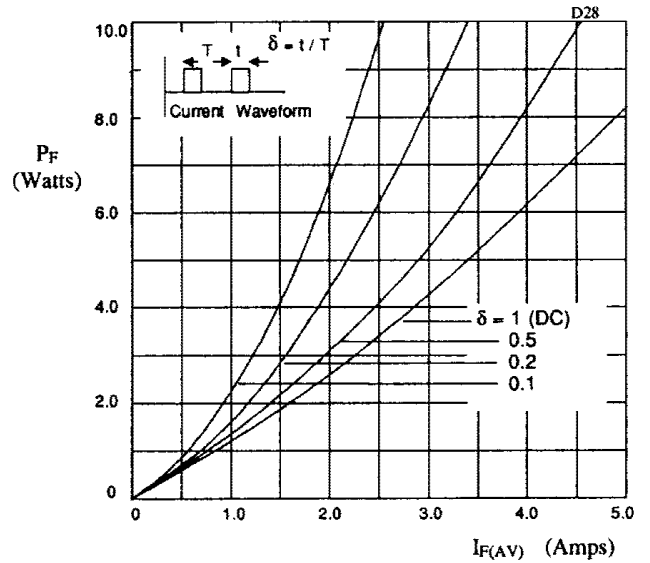Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

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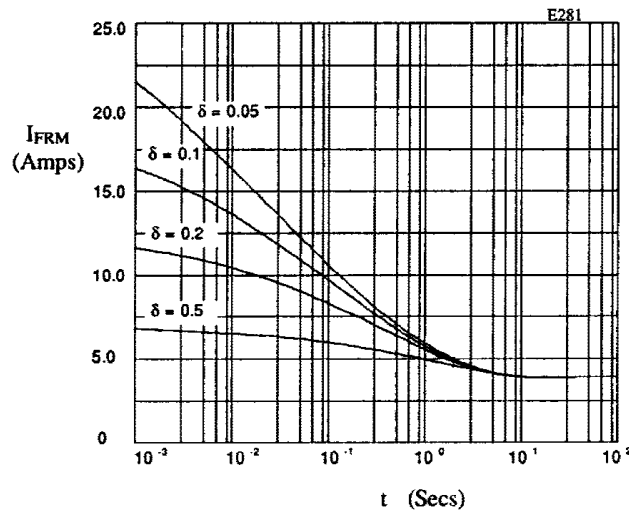

Fig 7. Typical repetitive forward current as a function of pulse width at 55°C; $R_{\theta JL}$ = 22 °C/W; V_{RWM} during 1 - δ.

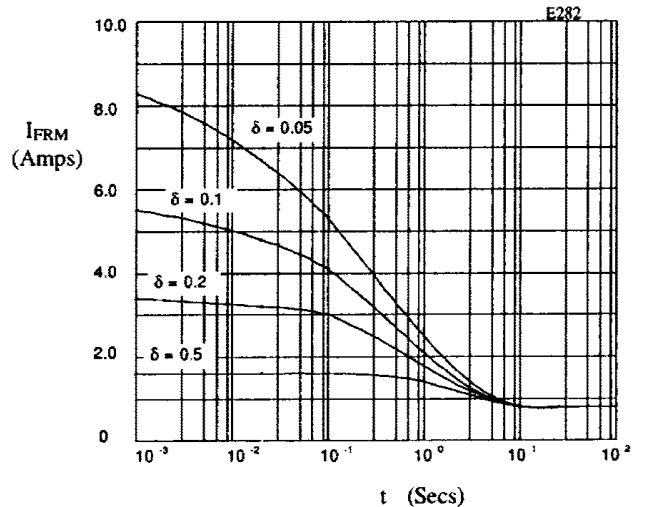Fig 8. Typical repetitive forward current as a function of pulse width at 100°C; $R_{\theta JL}$ = 75 °C/W; V_{RWM} during 1 - δ.