January 7, 1998

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

AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE FAST RECTIFIER DIODE

- Very low reverse recovery time
- High thermal shock resistance
- Glass passivated for hermetic sealing
- Low switching losses
- Soft, non-snap off, recovery characteristics

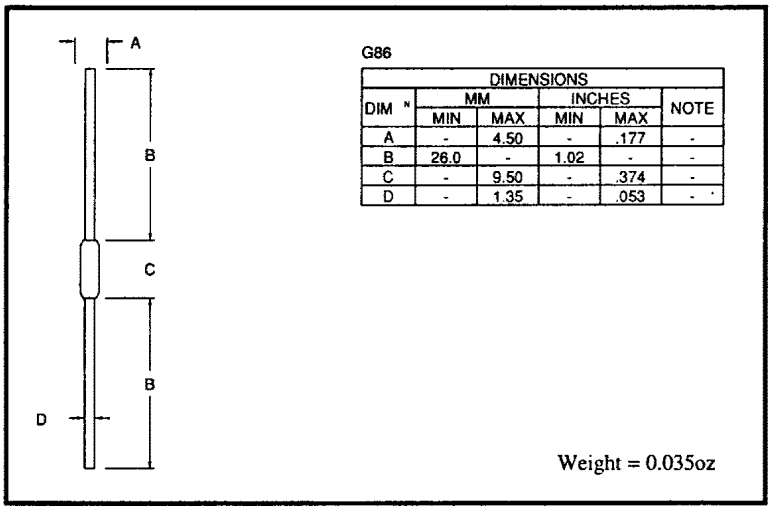
QUICK REFERENCE DATA

- V_R = 12kV
- I_F = 225mA
- t_{rr} = 350nS
- I_R = 5µA

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

	Symbol	2PF140	Unit
Working reverse voltage	V_{RWM}	12000	V
Repetitive reverse voltage	V_{RRM}	14000	V
Surge reverse voltage	V_{RSM}	15000	V
Average forward current (@ 55°C in oil)	$I_{F(AV)}$	225	mA
Repetitive surge current (@ 55°C in oil, lead length 0.375")	I_{FRM}	5.0	A
Non-repetitive surge current (t_p = 8.3mS, @ V_R & T_{jmax})	I_{FSM}	16	A
Storage temperature range	T_{STG}	-65 to +165	°C
Operating temperature range	T_{OP}	-65 to +165	°C

MECHANICAL



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DIM	DIMENSIONS MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	-	4.50	-	.177	-
B	26.0	-	1.02	-	-
C	-	9.50	-	.374	-
D	-	1.35	-	.053	-

Weight = 0.035oz

NOTE
Due to their small size these devices must be used in a suitable insulating medium (resin, oil, etc) for operation at maximum voltage ratings.

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CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	2PF140	Unit
Average forward current max. (oil at 55°C)			
for sine wave (unstirred oil)	$I_{F(AV)}$	168	mA
for square wave (stirred oil)	$I_{F(AV)}$	225	mA
for square wave (unstirred oil)	$I_{F(AV)}$	174	mA
I^2t for fusing (t = 8.3mS) max.	I^2t	1.0	A^2S
Forward voltage drop max. @ I_F = 1.0A, T_j = 25°C	V_F	25.0	V
Reverse current max.			
@ V_{RWM}, T_j = 25°C	I_R	5.0	µA
@ V_{RWM}, T_j = 100°C	I_R	50	µA
Reverse recovery time max. 50mA I_F, 100mA I_R, 25mA I_{RR}.	t_{rr}	350	nS
Junction capacitance typ. @ V_R = 5V , f = 1MHz	C_j	0.23	pF
Thermal resistance - junction to oil			
Stirred oil	$R_{\theta JO}$	30	°C/W
Unstirred oil	$R_{\theta JO}$	40	°C/W

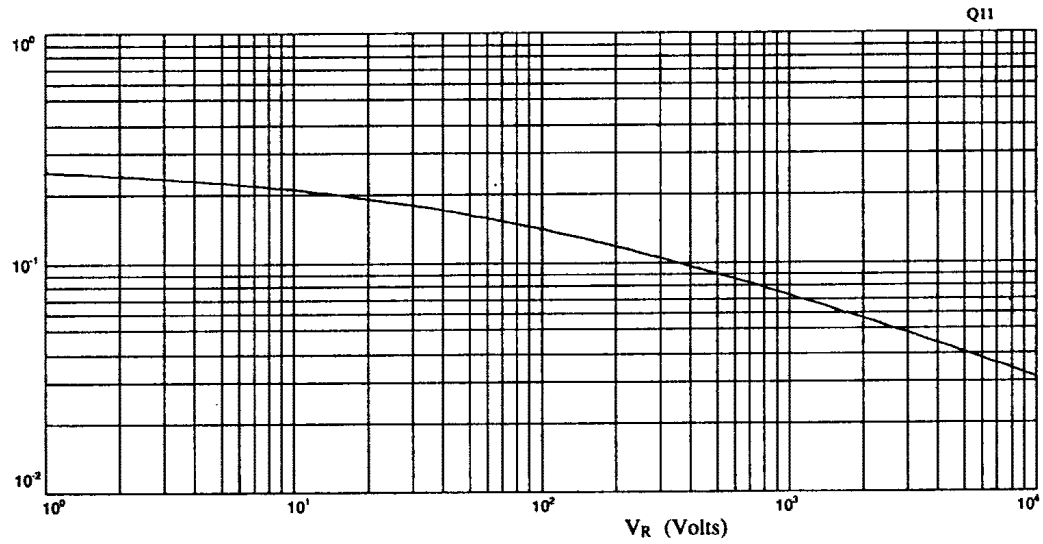

Fig 1 Junction capacitance against reverse voltage.

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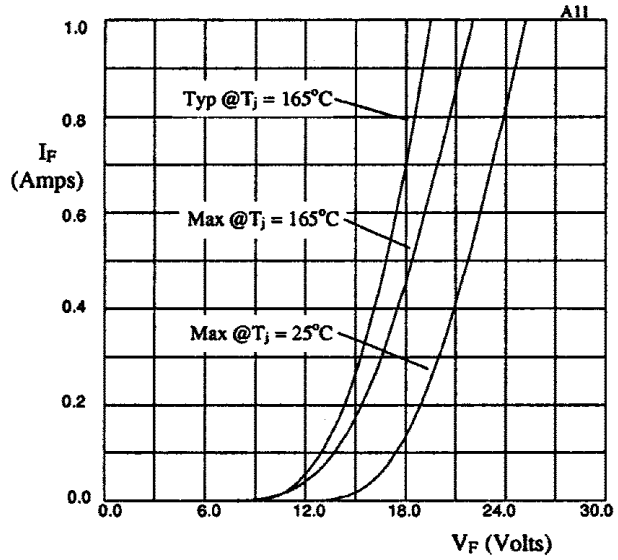

Fig 2. Forward voltage drop as a function of forward current.

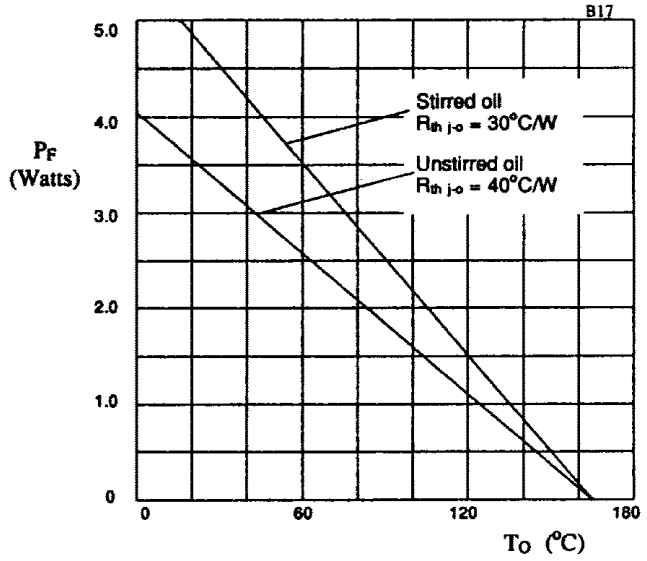

Fig 3. Power derating when in oil.

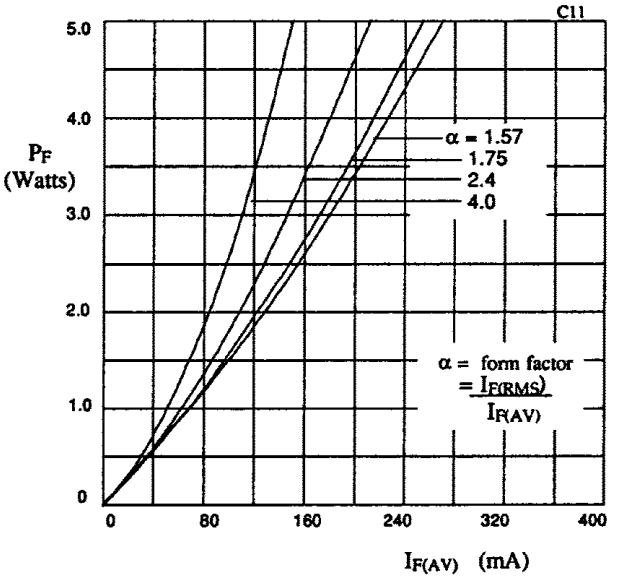

Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

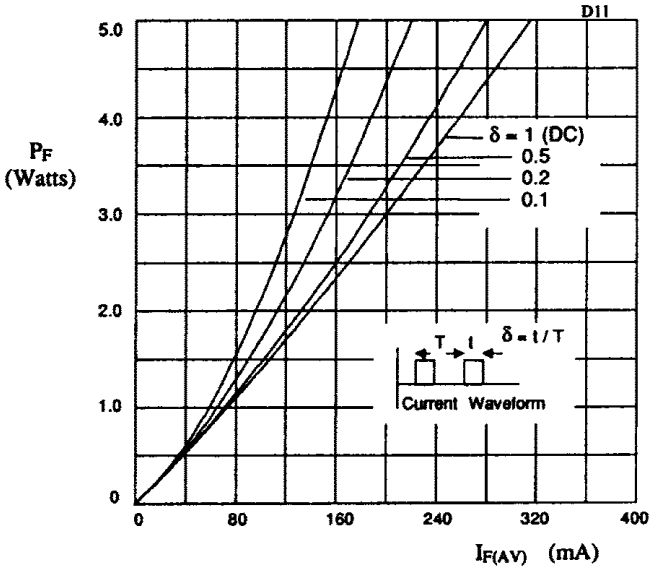

Fig 5. Forward power dissipation as a function of forward current, for square wave operation.