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

### AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE FAST RECTIFIER DIODE

### QUICK REFERENCE DATA

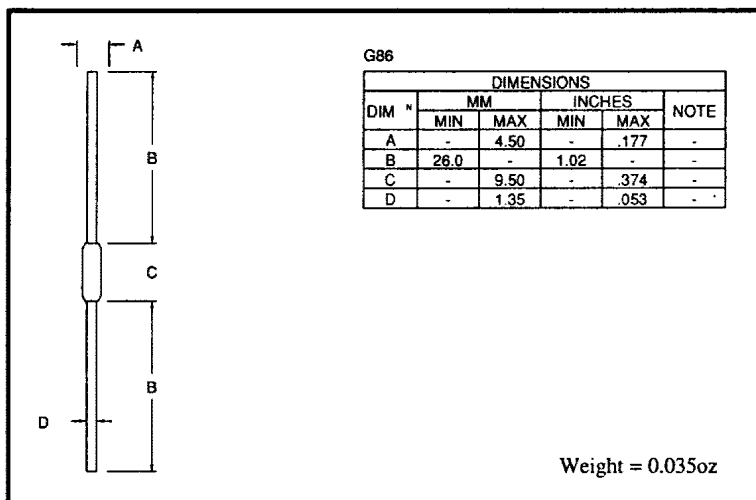
- Very low reverse recovery time
- High thermal shock resistance
- Glass passivated for hermetic sealing
- Low switching losses
- Soft, non-snap off, recovery characteristics

- $V_R = 12kV$
- $I_F = 225mA$
- $t_{rr} = 350ns$
- $I_R = 5\mu A$

### 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



### NOTE

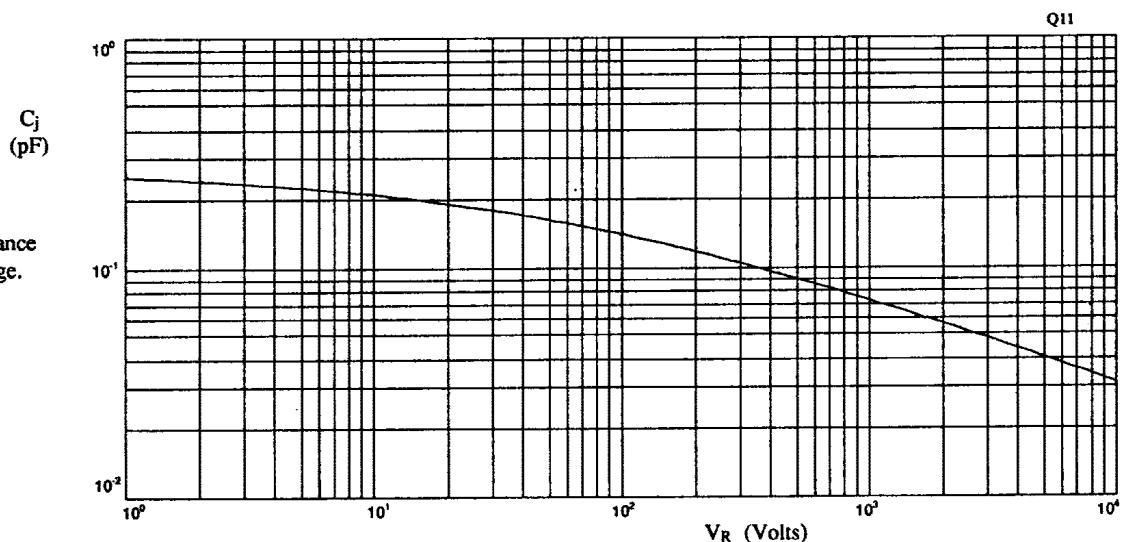
Due to their small size these devices must be used in a suitable insulating medium (resin, oil, etc) for operation at maximum voltage ratings.

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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 <sup>2</sup> S
Forward voltage drop max. @ $I_F = 1.0A$ , $T_j = 25^\circ C$	$V_F$	25.0	V
Reverse current max. @ $V_{RWM}$ , $T_j = 25^\circ C$	$I_R$	5.0	μA
@ $V_{RWM}$ , $T_j = 100^\circ C$	$I_R$	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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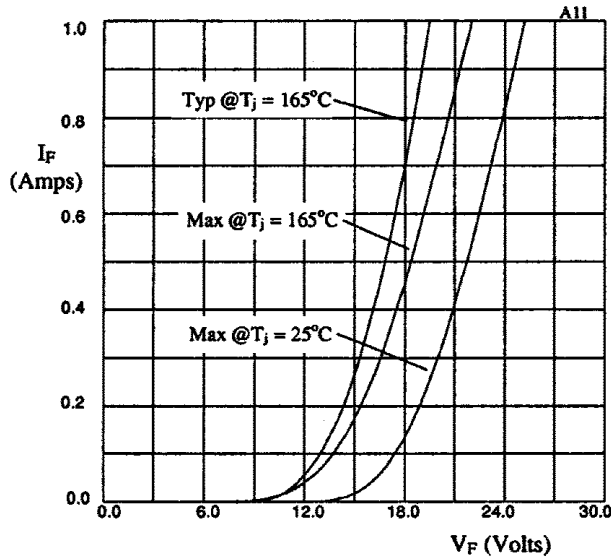


Fig 2. Forward voltage drop as a function of forward current.

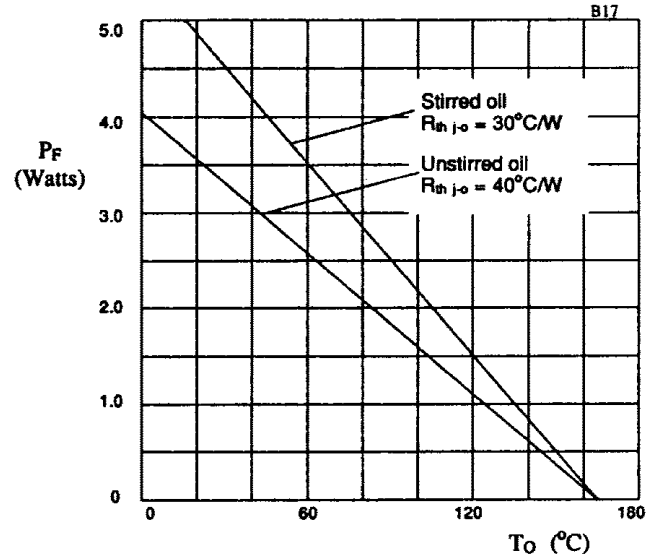


Fig 3. Power derating when in oil.

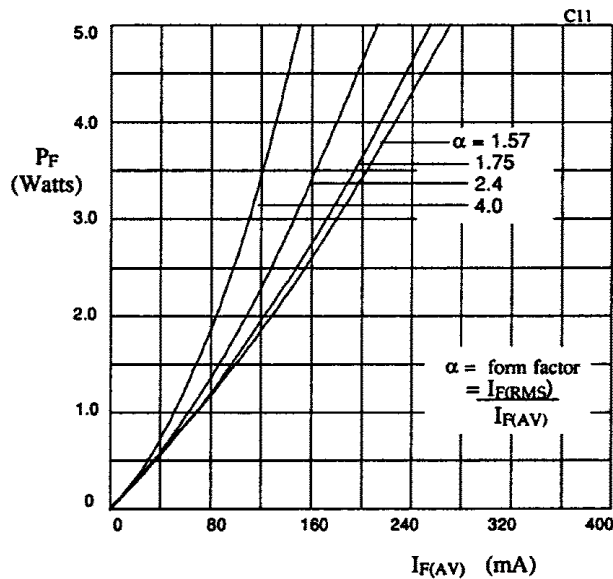


Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

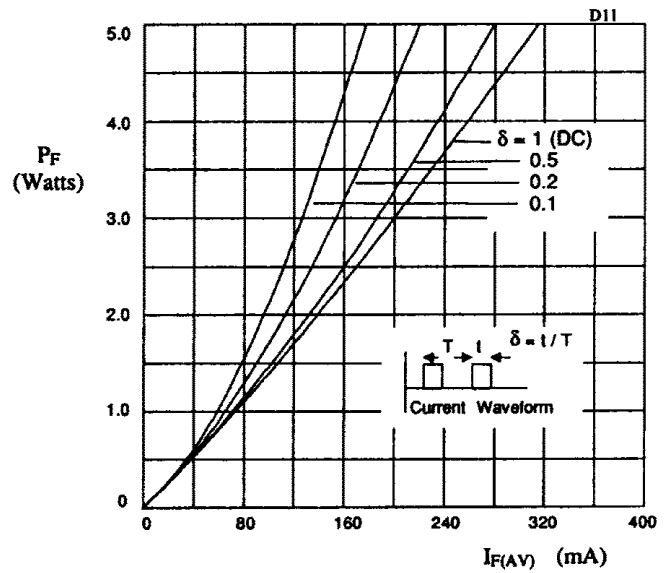


Fig 5. Forward power dissipation as a function of forward current, for square wave operation.