January 7, 1998

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

QUICK REFERENCE DATA

- V_R = 1500 - 3000V
- I_F = 0.35A
- t_{rr} = 250nS
- I_R = 0.25µA

AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE FAST RECTIFIER DIODE

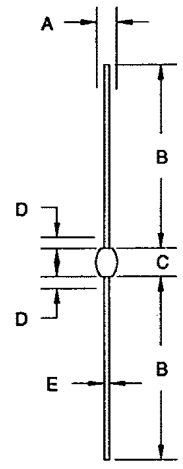
- Low reverse recovery time
- High thermal shock resistance
- Hermetically sealed with Metoxilite metal oxide
- Low switching losses
- Soft, non-snap off, recovery characteristics

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

	Symbol	F15	F20	F25	F30	Unit
Working reverse voltage	V_{RWM}	1500	2000	2500	3000	V
Repetitive reverse voltage	V_{RRM}	1500	2000	2500	3000	V
Average forward current (@ 55°C in oil)	$I_{F(AV)}$	← 0.35 →				A
Repetitive surge current (@ 55°C)	I_{FRM}	← 1.25 →				A
Non-repetitive surge current (t_p = 8.3mS, @ V_R & T_{jmax})	I_{FSM}	← 5.0 →				A
Storage temperature range	T_{STG}	← -65 to +175 →				°C
Operating temperature range	T_{OP}	← -65 to +175 →				°C

These products are available in Europe to DEF STAN 59-61 (PART 80)/034 to F and FX levels.

MECHANICAL



G66

DIM	DIMENSIONS MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	-	2.3	-	.09	-
B	25.4	33.0	1.00	1.30	-
C	4.6	5.3	.18	.21	-
D	-	.80	-	.030	1
E	.53	.66	.021	.026	-

NOTES:

1. LEAD DIAMETER UNCONTROLLED OVER THIS REGION.

Weight = 0.011oz

© 1997 SEMTECH CORP.

January 7, 1998

CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	F15 F20 F25 F30	Unit
Average forward current max. (pcb mounted; T_A = 55°C)			
for sine wave	$I_{F(AV)}$	0.16	A
for square wave (d = 0.5)	$I_{F(AV)}$	0.20	A
Average forward current max. (unstirred oil at 55°C)			
for sine wave	$I_{F(AV)}$	0.33	A
for square wave	$I_{F(AV)}$	0.35	A
I^2t for fusing (t = 8.3mS) max.	I^2t	0.10	A^2S
Forward voltage drop max. @ I_F = 0.10A, T_j = 25°C	V_F	5.00	V
Reverse current max.			
@ V_{RWM}, T_j = 25°C	I_R	0.25	µA
@ V_{RWM}, T_j = 100°C	I_R	10	µA
Reverse recovery time max. 50mA I_F to 100mA I_R. Recover to 25mA I_{RR}.	t_{rr}	250	nS
Junction capacitance typ. @ V_R = 5V , f = 1MHz	C_j	2.5	pF
Thermal resistance - junction to oil			
Stirred oil	$R_{\theta JO}$	30	°C/W
Unstirred oil	$R_{\theta JO}$	48	°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1oz copper.	$R_{\theta JA}$	120	°C/W

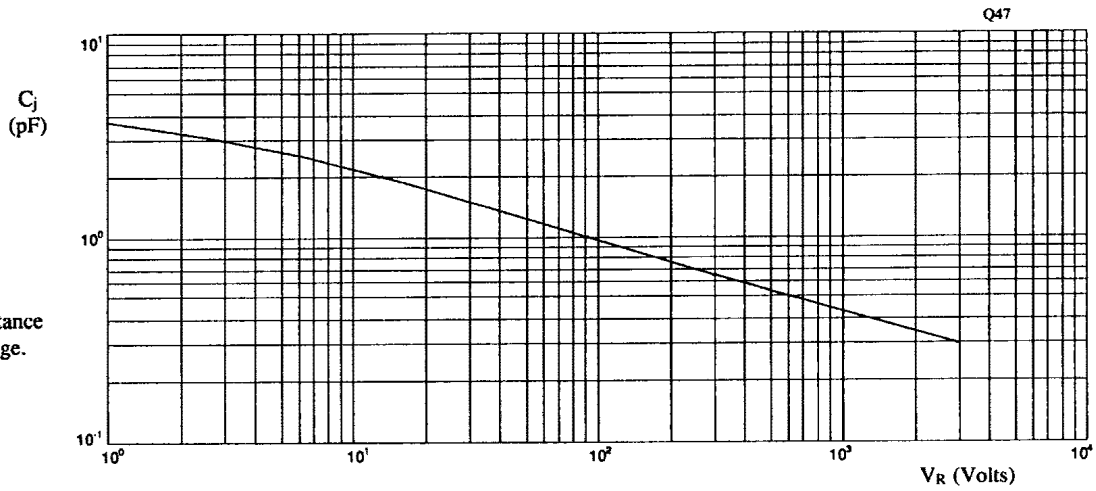


Fig 1. Junction capacitance against reverse voltage.

© 1997 SEMTECH CORP.

January 7, 1998

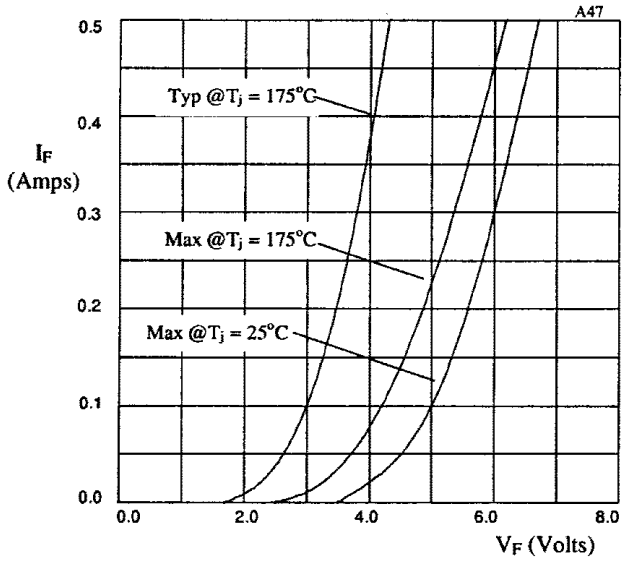


Fig 2. Forward voltage drop as a function of forward current.

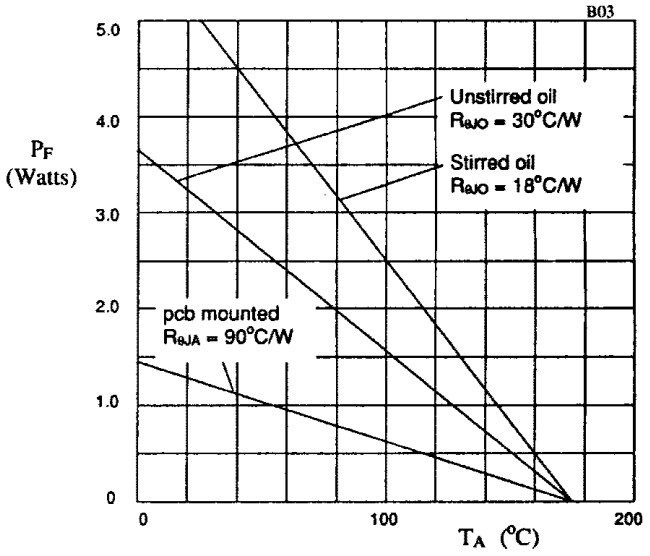


Fig 3. Power derating in air and oil.

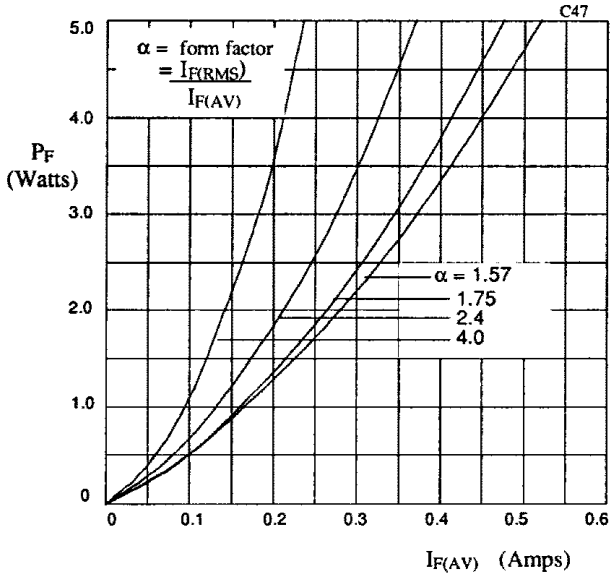


Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

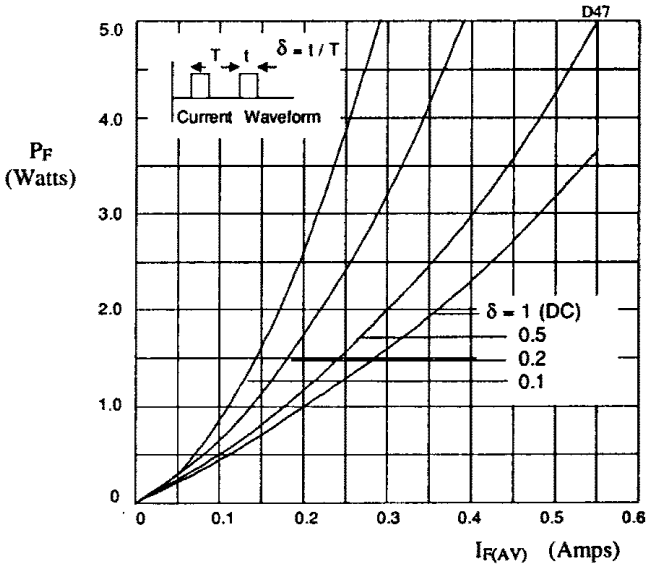


Fig 5. Forward power dissipation as a function of forward current, for square wave operation.

© 1997 SEMTECH CORP.