

January 7, 1998

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

QUICK REFERENCE DATA

- $V_R = 1500 - 3000V$
- $I_F = 0.35A$
- $t_{rr} = 250ns$
- $I_R = 0.25\mu A$

AXIAL LEADED HERMETICALLY SEALED HIGH VOLTAGE FAST RECTIFIER DIODE

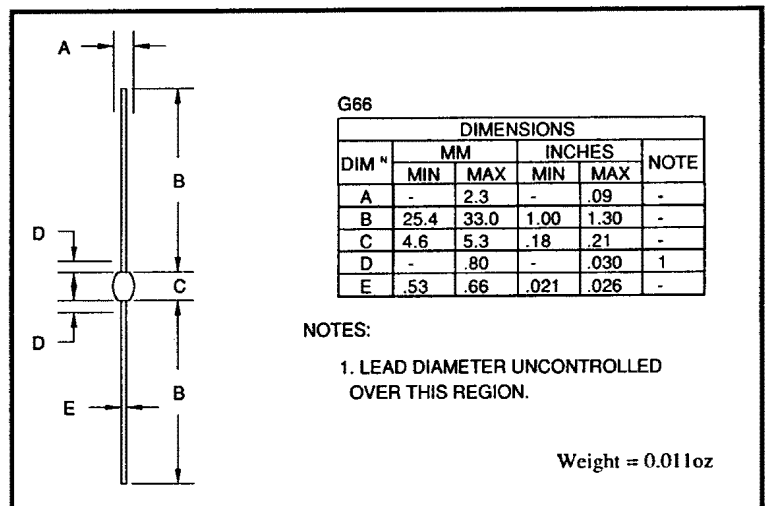
- Low reverse recovery time
- High thermal shock resistance
- Hermetically sealed with Metoxilite metal oxide
- Low switching losses
- Soft, non-snap off, recovery characteristics

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

MECHANICAL

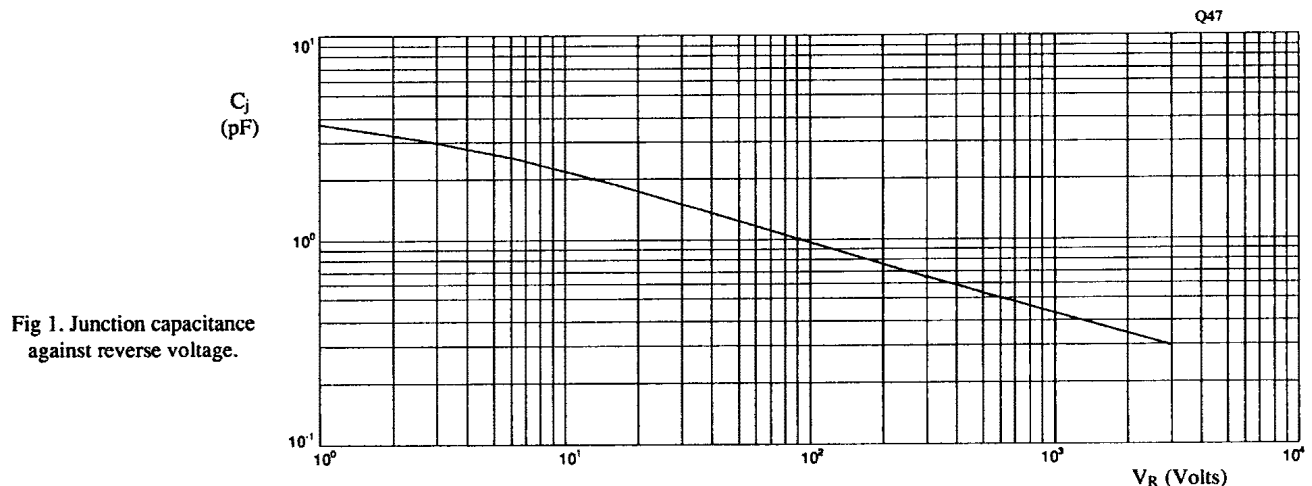
These products are available in Europe to DEF STAN 59-61 (PART 80)/034 to F and FX levels.



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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
	I _{F(AV)}	← 0.20 →				A
Average forward current max. (unstirred oil at 55°C) for sine wave	I _{F(AV)}	← 0.33 →				A
	I _{F(AV)}	← 0.35 →				A
I ² t for fusing (t = 8.3mS) max.	I ² t	← 0.10 →				A ² S
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
	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 →				ρF
Thermal resistance - junction to oil Stirred oil	ReJO	← 30 →				°C/W
	ReJO	← 48 →				°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1oz copper.	ReJA	← 120 →				°C/W



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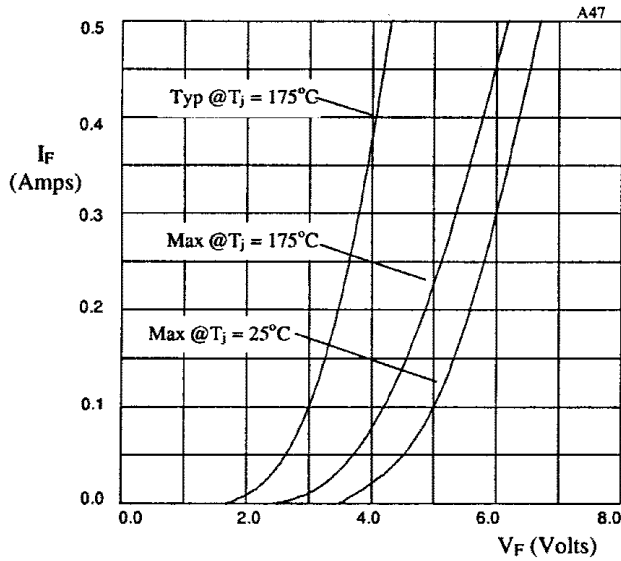


Fig 2. Forward voltage drop as a function of forward current.

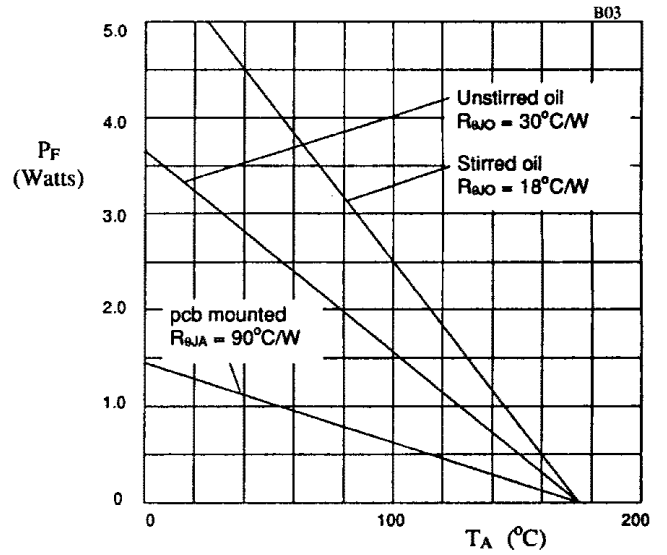


Fig 3. Power derating in air and oil.

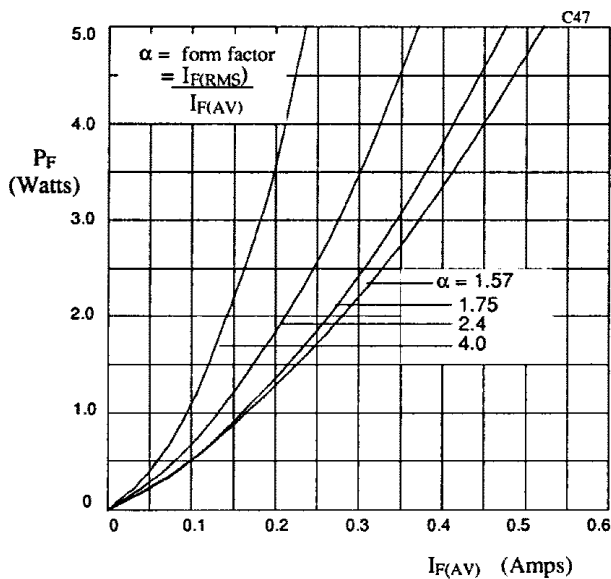


Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.

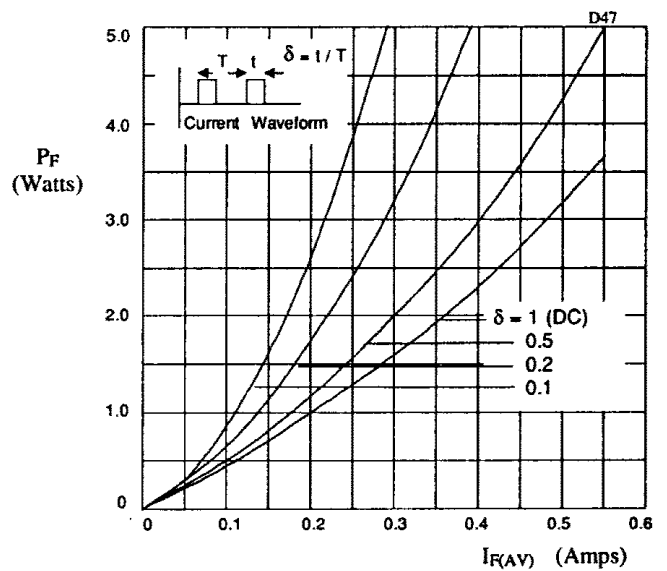


Fig 5. Forward power dissipation as a function of forward current, for square wave operation.