

January 7, 1998

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

**QUICK REFERENCE DATA**

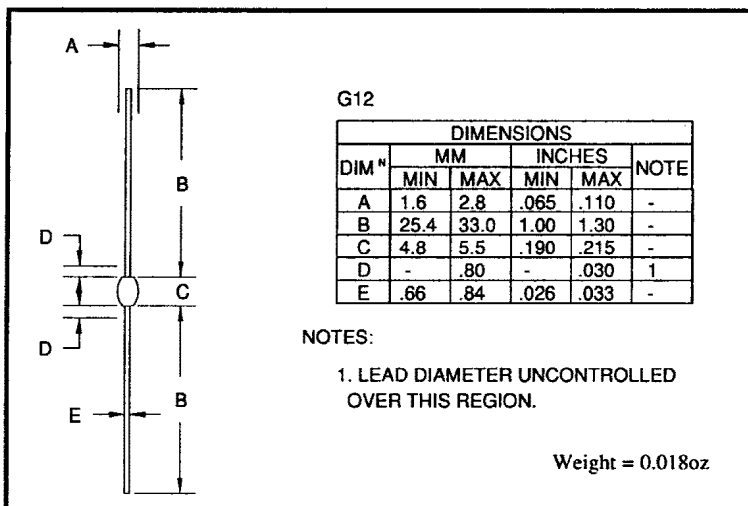
- Low reverse recovery time
- High thermal shock resistance
- Hermetically sealed with Metoxillite metal oxide
- Low switching losses
- Soft, non-snap off, recovery characteristics

- $V_R = 1500 - 2500V$
- $I_F = 0.5A$
- $t_{rr} = 300ns$
- $I_R = 1\mu A$

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

	Symbol	S15F	S20F	S25F	Unit
Working reverse voltage	$V_{RWM}$	1500	2000	2500	V
Repetitive reverse voltage	$V_{RRM}$	1500	2000	2500	V
Average forward current (@ 55°C in oil)	$I_{F(AV)}$	← 0.5 →			A
Repetitive surge current (@ 55°C in oil)	$I_{FRM}$	← 2.5 →			A
Non-repetitive surge current ( $t_p = 8.3ms$ , @ $V_R$ & $T_{jmax}$ )	$I_{FSM}$	← 10.0 →			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	S15F	S20F	S25F	Unit
Average forward current max. (pcb mounted; T <sub>A</sub> = 55°C) for sine wave	I <sub>F(AV)</sub>	← 0.23 →			A
	I <sub>F(AV)</sub>	← 0.24 →			A
Average forward current max. (unstirred oil at 55°C) for sine wave	I <sub>F(AV)</sub>	← 0.50 →			A
	I <sub>F(AV)</sub>	← 0.50 →			A
I <sup>2</sup> t for fusing (t = 8.3mS) max.	I <sup>2</sup> t	← 0.4 →			A <sup>2</sup> S
Forward voltage drop max. @ I <sub>F</sub> = 0.10A, T <sub>j</sub> = 25°C	V <sub>F</sub>	← 5.0 →			V
Reverse current max. @ V <sub>RRM</sub> , T <sub>j</sub> = 25°C	I <sub>R</sub>	← 1.0 →			μA
	I <sub>R</sub>	← 25 →			μA
Reverse recovery time max. 50mA I <sub>F</sub> , 100mA I <sub>R</sub> , Recover to 25mA I <sub>RR</sub> .	t <sub>rr</sub>	← 300 →			nS
Junction capacitance typ. @ V <sub>R</sub> = 5V, f = 1MHz	C <sub>j</sub>	← 4.0 →			pF
Thermal resistance - junction to oil Stirred oil	R <sub>θJO</sub>	← 18 →			°C/W
	R <sub>θJO</sub>	← 30 →			°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1oz copper.	R <sub>θJA</sub>	← 90 →			°C/W

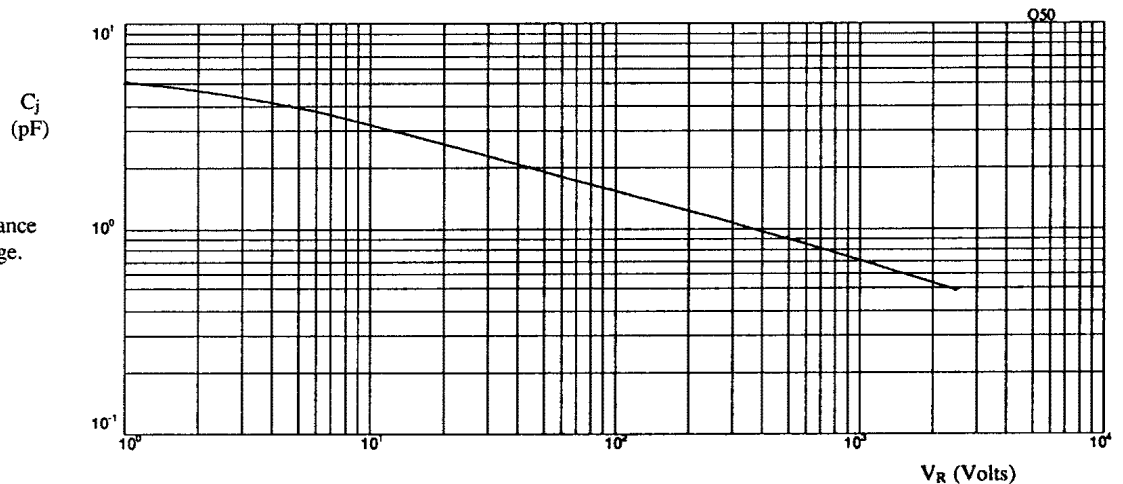


Fig 1 Junction capacitance against reverse voltage.



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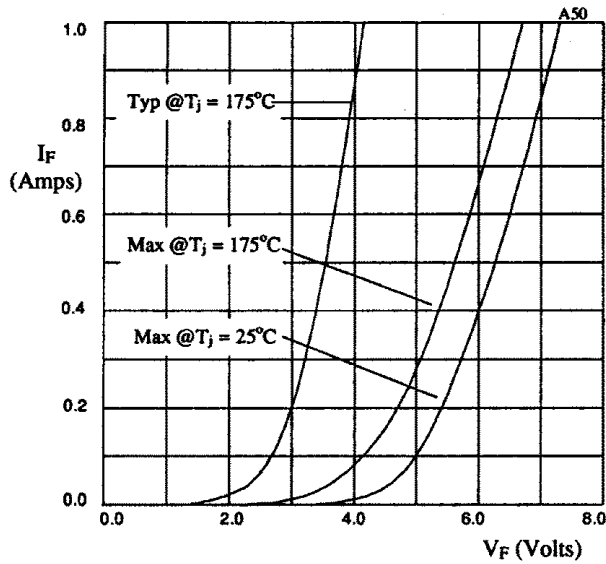


Fig 1. Forward voltage drop as a function of forward current.

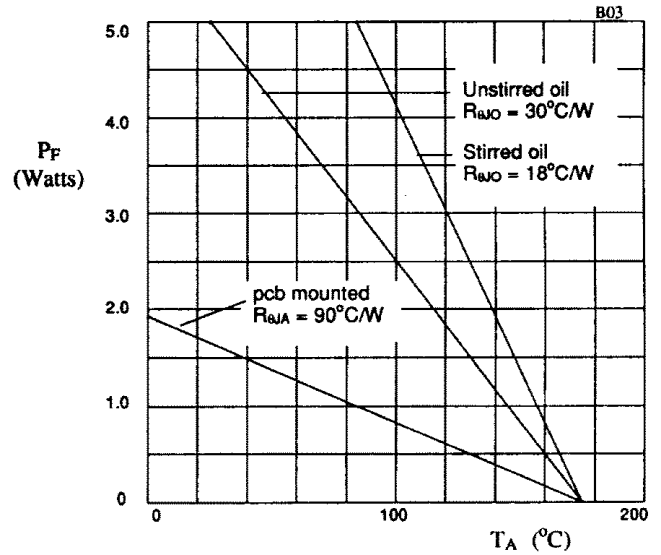


Fig 2. Power derating in air and oil.

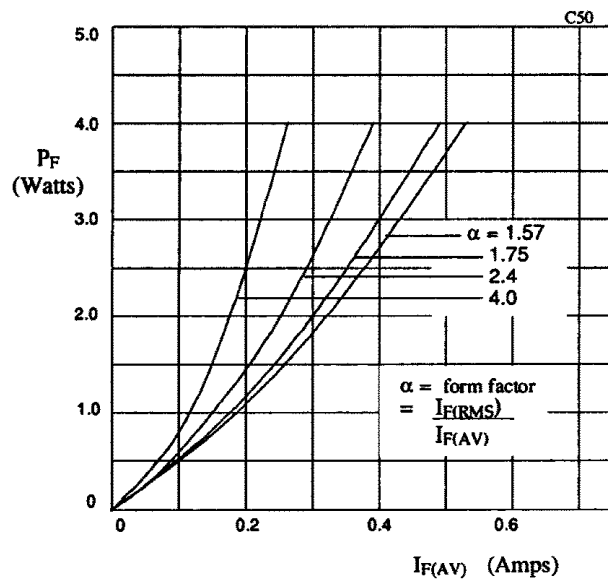


Fig 3. Forward power dissipation as a function of forward current, for sinusoidal operation.

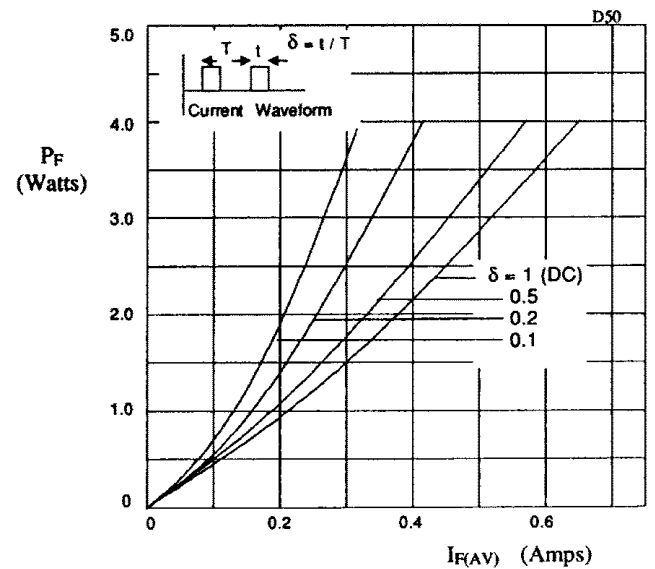


Fig 4. Forward power dissipation as a function of forward current, for square wave operation.