

## Excellent Integrated System Limited

Stocking Distributor

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For any questions, you can email us directly:

[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

**SEMTECH**

**RECTIFIER, up to 3kV, 330mA, 2µs**

**M20  
M30**

January 7, 1998

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

**QUICK REFERENCE  
DATA**

- $V_R = 2kV - 3kV$
- $I_F = 330mA$
- $t_{rr} = 2.0\mu S$
- $I_R = 0.25\mu A$

**AXIAL LEADED HERMETICALLY SEALED HIGH  
VOLTAGE STANDARD RECOVERY RECTIFIER DIODE**

- High thermal shock resistance
- Hermetically sealed with Metoxilite fused metal oxide
- Low reverse leakage currents
- Miniature packaging
- Monolithic cavity free

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

	Symbol	M20	M30	Unit
Working reverse voltage	$V_{RWM}$	2000	3000	V
Repetitive reverse voltage	$V_{RRM}$	2000	3000	V
Surge reverse voltage	$V_{RSM}$	2000	3000	V
Average forward current (@ 55°C in oil)	$I_{F(AV)}$	← 330 →		mA
Repetitive surge current (@ 55°C)	$I_{FRM}$	← 1.3 →		A
Non-repetitive surge current ( $t_p = 8.3mS$ , @ $V_R$ & $T_{jmax}$ )	$I_{FSM}$	← 7.0 →		A
Storage temperature range	$T_{STG}$	-65 to +175		°C
Operating temperature range	$T_{OP}$	-65 to +175		°C

**MECHANICAL**

G66

DIM #	DIMENSIONS				NOTE
	MM		INCHES		
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 = 0.01oz

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**CHARACTERISTICS** (@ 25°C unless otherwise specified)

	Symbol	M20	M30	Unit
Average forward current for sine wave - max. pcb mounted; T <sub>A</sub> = 55°C	I <sub>F(AV)</sub>	← 175 →	← 330 →	mA
- max. in unstirred oil	I <sub>F(AV)</sub>	← 330 →	← 330 →	mA
I <sup>2</sup> t for fusing (t = 8.3mS) max.	I <sup>2</sup> t	← 0.2 →	← 0.2 →	A <sup>2</sup> S
Forward voltage drop max. @ I <sub>F</sub> = 125mA, T <sub>j</sub> = 25°C	V <sub>F</sub>	← 5.0 →	← 5.0 →	V
Reverse current max. @ V <sub>RWM</sub> , T <sub>j</sub> = 25°C	I <sub>R</sub>	← 0.25 →	← 0.25 →	μA
@ V <sub>RWM</sub> , T <sub>j</sub> = 100°C	I <sub>R</sub>	← 10 →	← 10 →	μA
Reverse recovery time max. 50mA I <sub>F</sub> to 100mA I <sub>R</sub> . Recover to 25mA I <sub>RR</sub> .	t <sub>rr</sub>	← 2.0 →	← 2.0 →	μS
Junction capacitance typ. @ V <sub>R</sub> = 5V, f = 1MHz	C <sub>j</sub>	← 1.7 →	← 1.7 →	pF
Thermal resistance - junction to oil Unstirred @ 55°C	R <sub>θJO</sub>	← 48 →	← 48 →	°C/W
Stirred @ 55°C	R <sub>θJO</sub>	← 30 →	← 30 →	°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1oz copper.	R <sub>θJA</sub>	← 120 →	← 120 →	°C/W

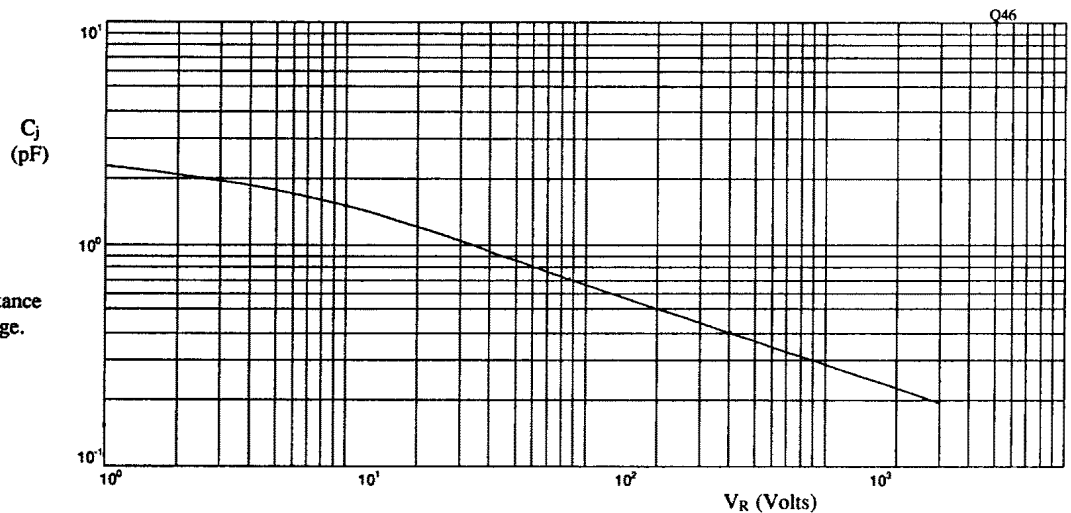


Fig 1. Junction capacitance against reverse voltage.

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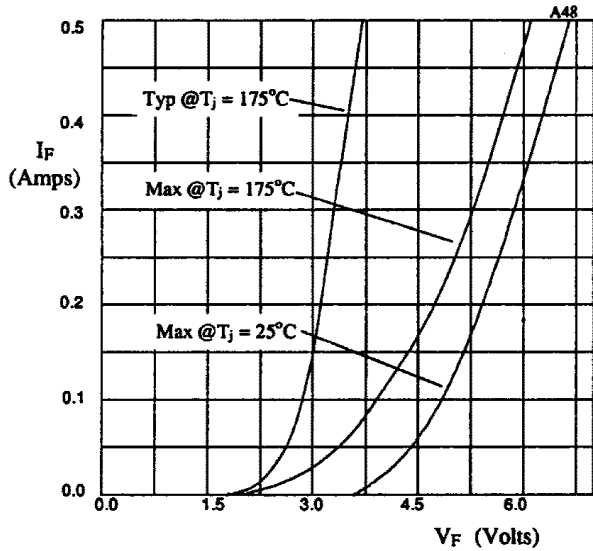


Fig 2. Forward voltage drop as a function of forward current.

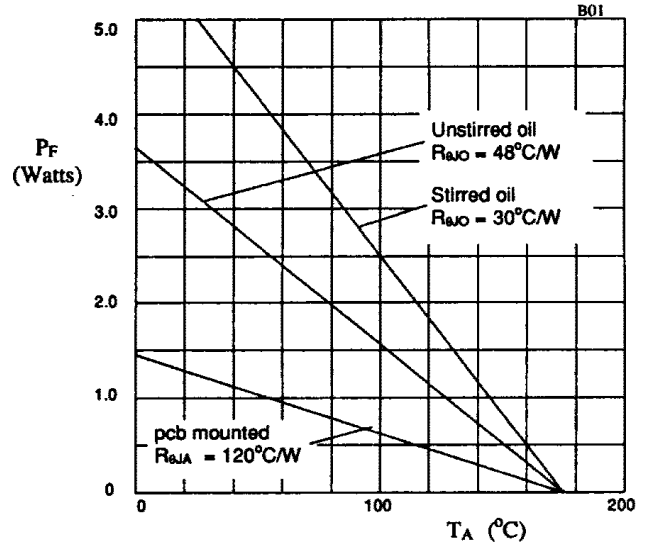


Fig 3. Power derating in air and oil.

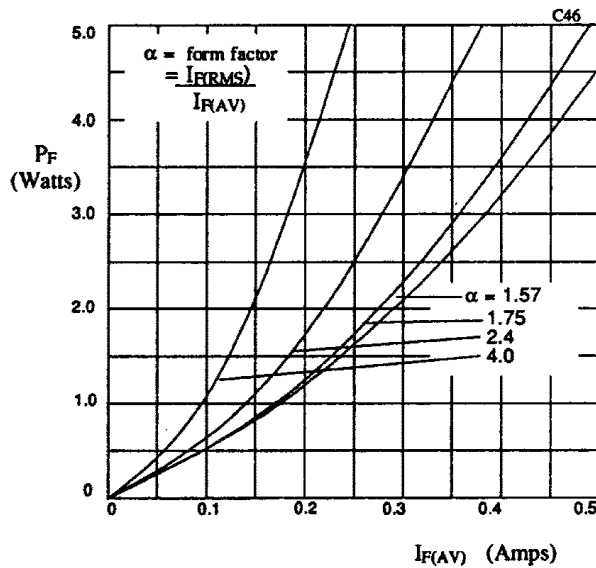


Fig 4. Forward power dissipation as a function of forward current, for sinusoidal operation.