

January 7, 1998

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

### QUICK REFERENCE DATA AXIAL LEADED HERMETICALLY SEALED STANDARD RECOVERY RECTIFIER DIODE

- $V_R = 200 - 1000V$
- $I_F = 2.0A$
- $t_{rr} = 2\mu s$
- $V_F = 1.1V$
- Low reverse leakage current
- Hermetically sealed in Metoxilite fused metal oxide
- Good thermal shock resistance
- Low forward voltage drop
- Avalanche capability.

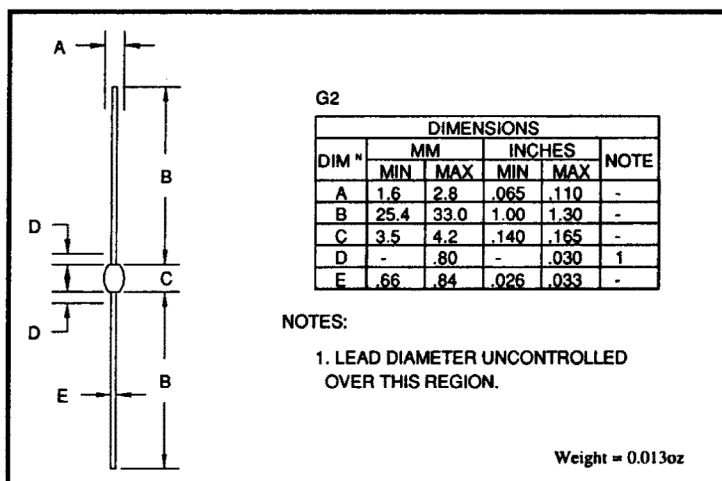
### ABSOLUTE MAXIMUM RATINGS (@ 25°C unless otherwise specified)

	Symbol	1N5614 S2M	1N5616 S4M	1N5618 S6M	1N5620 S8M	1N5622 S0M	Unit
Working reverse voltage	$V_{RWM}$	200	400	600	800	1000	V
Repetitive reverse voltage	$V_{RRM}$	200	400	600	800	1000	V
Average forward current (@ 55°C, lead length 0.375")	$I_{F(AV)}$	← 2.0 →					A
Repetitive surge current (@ 55°C in free air, lead length 0.375")	$I_{FRM}$	← 10 →					A
Non-repetitive surge current ( $t_p = 8.3ms$ , @ $V_R$ & $T_{jmax}$ )	$I_{FSM}$	← 30 →					A
Storage temperature range	$T_{STG}$	← -65 to +175 →					°C
Operating temperature range	$T_{OP}$	← -65 to +175 →					°C

### MECHANICAL

These products are qualified to MIL-PRF-19500/427 and are preferred parts as listed in MIL-STD-701. They can be supplied fully released as JAN, JANTX, JANTXV and JANS versions.

These products are available in Europe to DEF STAN 59-61 (PART 80)/029 to F and FX levels.



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

	Symbol	1N5614 S2M	1N5616 S4M	1N5618 S6M	1N5620 S8M	1N5622 S0M	Unit
Average forward current (sine wave) - max. pcb mounted; $T_A = 55^\circ\text{C}$ - max. $L = 3/8"$ ; $T_L = 55^\circ\text{C}$	$I_F(\text{AV})$ $I_F(\text{AV})$	←		1.0	→		A A
$I^2t$ for fusing ( $t = 8.3\text{ms}$ ) max.	$I^2t$	←		5.0	→		$\text{A}^2\text{S}$
Forward voltage drop max. @ $I_F = 1.0\text{A}$ , $T_j = 25^\circ\text{C}$	$V_F$	←		1.1	→		V
Reverse current max. @ $V_{\text{RWM}}$ , $T_j = 25^\circ\text{C}$ @ $V_{\text{RWM}}$ , $T_j = 100^\circ\text{C}$	$I_R$ $I_R$	←		0.5 25	→		μA μA
Reverse recovery time max. 0.5A $I_F$ to 1.0A $I_R$ . Recovers to 0.25A $I_{\text{RR}}$ .	$t_{\text{rr}}$	←		2.0	→		μS
Junction capacitance typ. @ $V_R = 5\text{V}$ , $f = 1\text{MHz}$	$C_j$	←		23	→		pF
Thermal resistance - junction to lead Lead length = 0.375"	$R_{\theta\text{JL}}$	←		36	→		$^\circ\text{C/W}$
Lead length = 0"	$R_{\theta\text{JL}}$	←		7	→		$^\circ\text{C/W}$
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	$R_{\theta\text{JA}}$	←		95	→		$^\circ\text{C/W}$

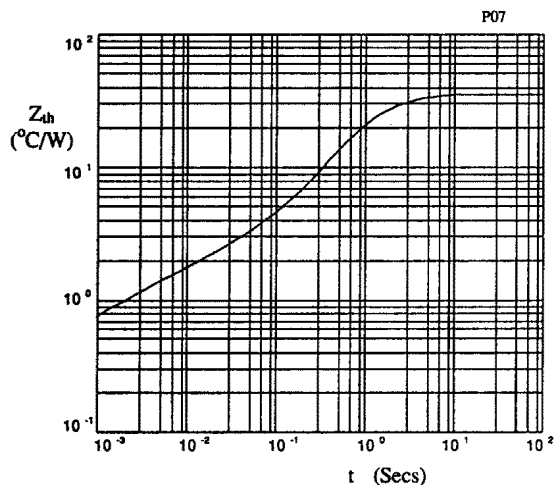


Fig 1. Transient thermal impedance characteristic.

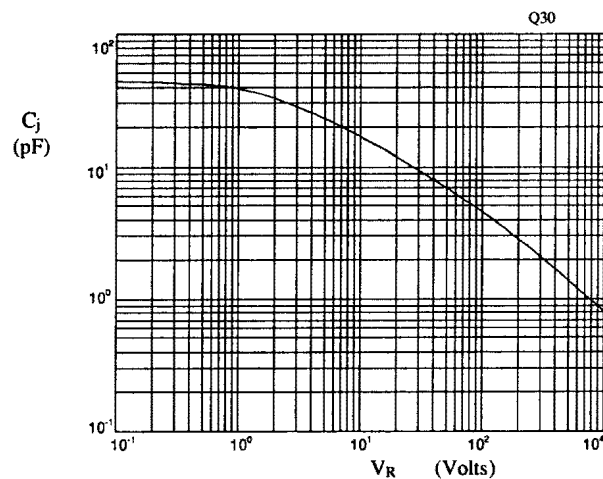


Fig 2. Typical junction capacitance as a function of reverse voltage.

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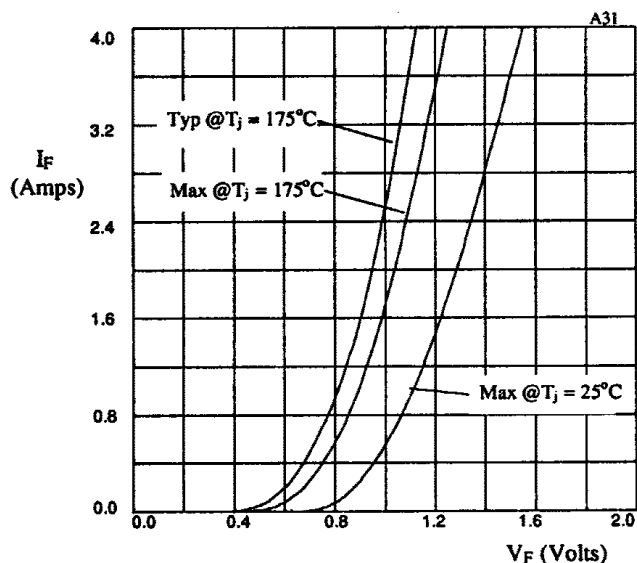


Fig 3. Forward voltage drop as a function of forward current.

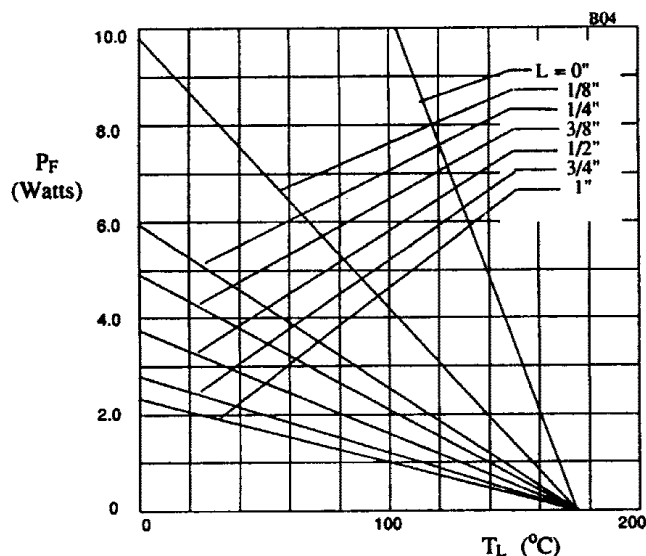


Fig 4. Maximum power versus lead temperature.

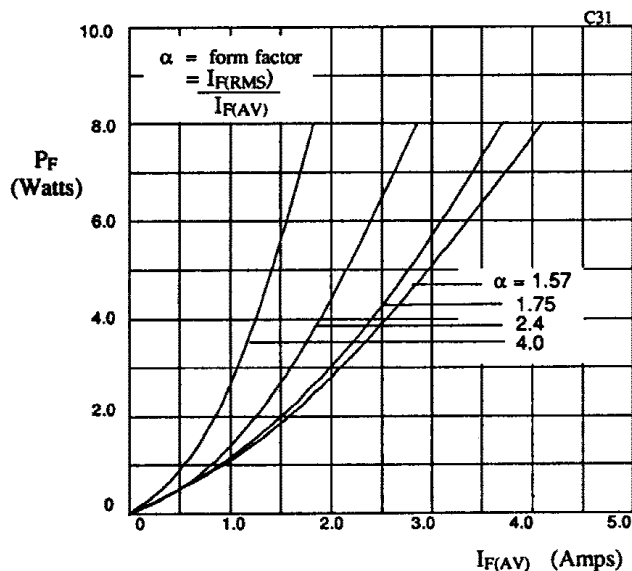


Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

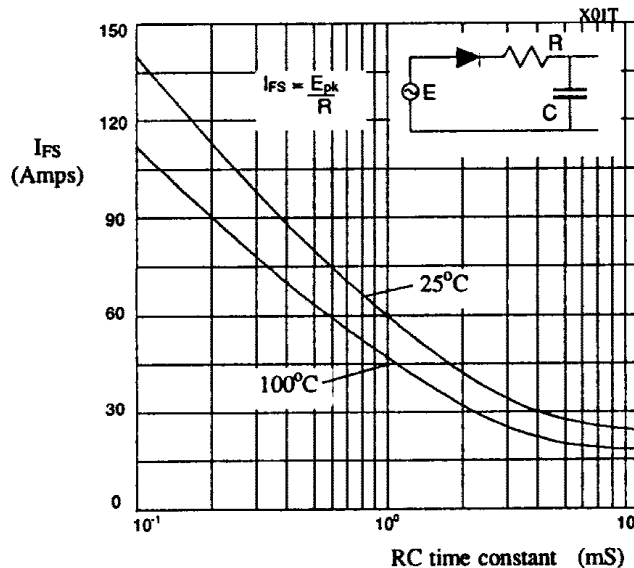


Fig 6. Maximum ratings for capacitive loads.