SEMTECH

RECTIFIER, up to 1kV, 2A, 2µs

1N5614 S2M
1N5616 S4M
1N5618 S6M
1N5620 S8M
1N5622 S0M

January 7, 1998

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

QUICK REFERENCE DATA

- V_R = 200 - 1000V
- I_F = 2.0A
- t_{rr} = 2µS
- V_F = 1.1V

AXIAL LEADED HERMETICALLY SEALED STANDARD RECOVERY RECTIFIER DIODE

- Low reverse leakage current
- Hermetically sealed in Metoxilite fused metal oxide
- Good thermal shock resistance
- Low forward voltage drop
- Avalanche capability.

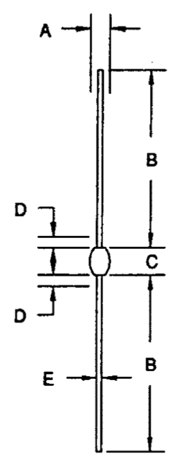
ABSOLUTE MAXIMUM RATINGS (@ 25°C unless otherwise specified)

	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

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.

MECHANICAL



G2

DIM *	MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	1.6	2.8	.065	.110	-
B	25.4	33.0	1.00	1.30	-
C	3.5	4.2	.140	.165	-
D	-	.80	-	.030	1
E	.66	.84	.026	.033	-

NOTES:

1. LEAD DIAMETER UNCONTROLLED OVER THIS REGION.

Weight = 0.013oz

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CHARACTERISTICS (@ 25°C unless otherwise specified)

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

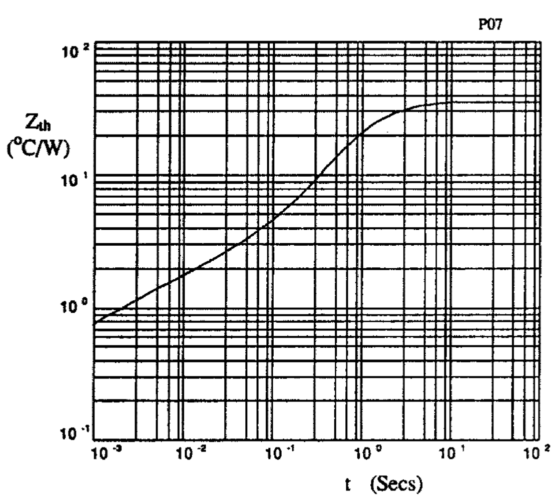

Fig 1. Transient thermal impedance characteristic.

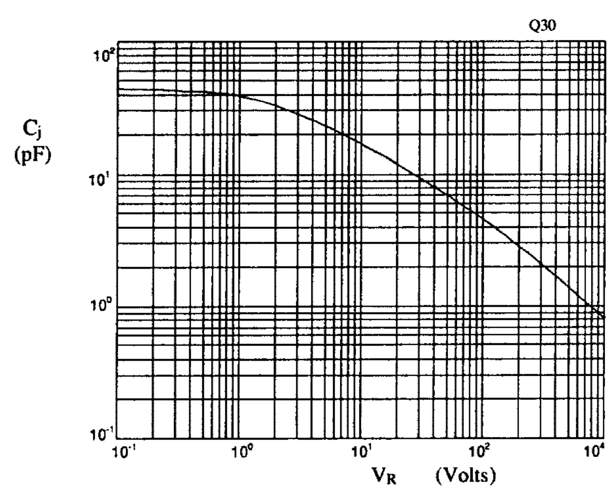

Fig 2. Typical junction capacitance as a function of reverse voltage.

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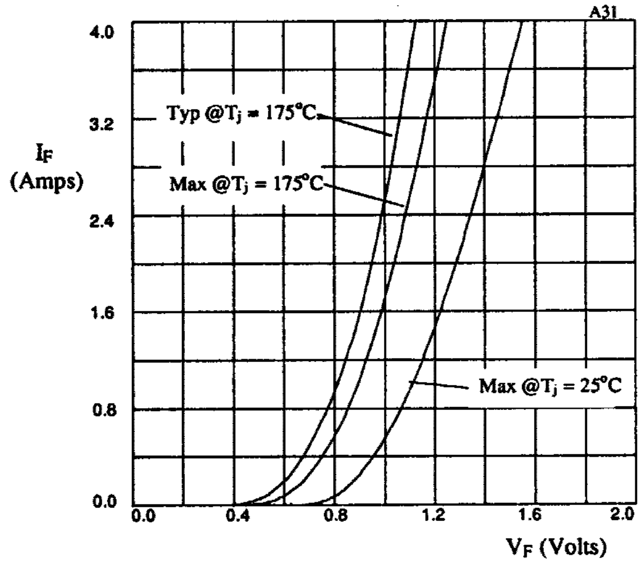

Fig 3. Forward voltage drop as a function of forward current.

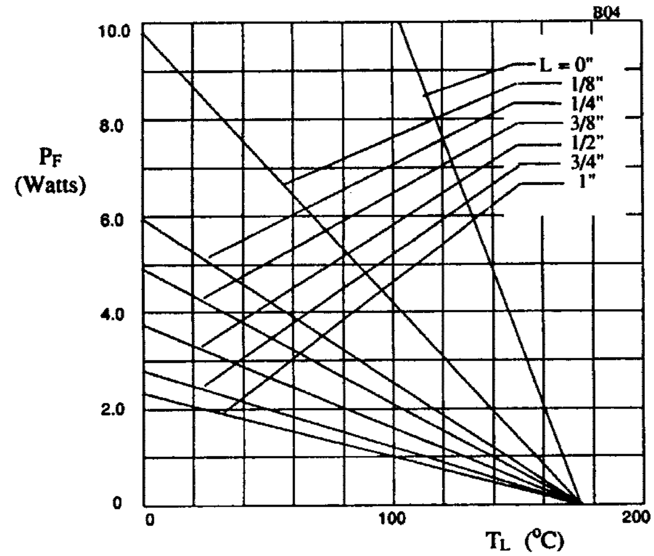

Fig 4. Maximum power versus lead temperature.

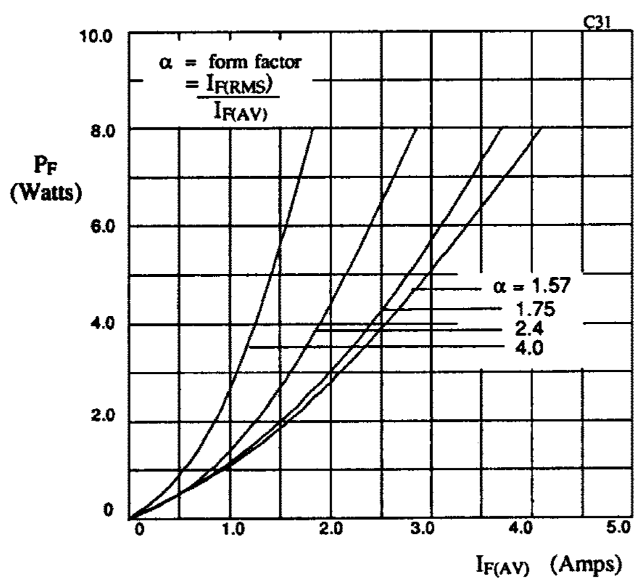

Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

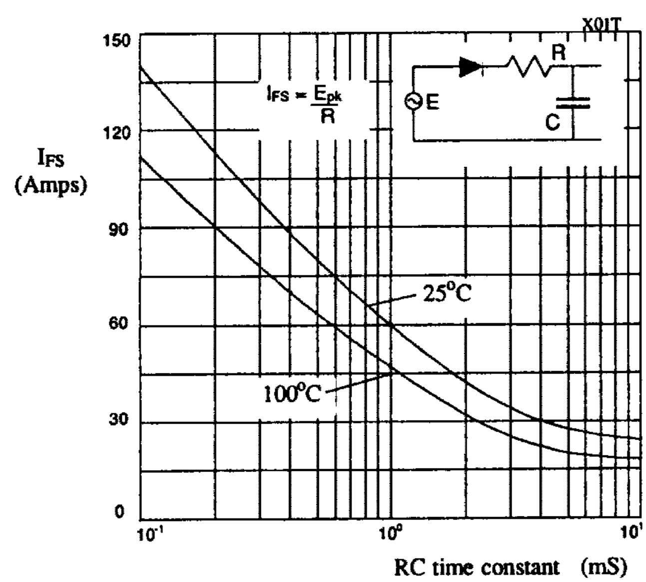

Fig 6. Maximum ratings for capacitive loads.

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