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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 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 Metoxillite fused metal oxide
- Good thermal shock resistance
- Low forward voltage drop
- Avalanche capability.

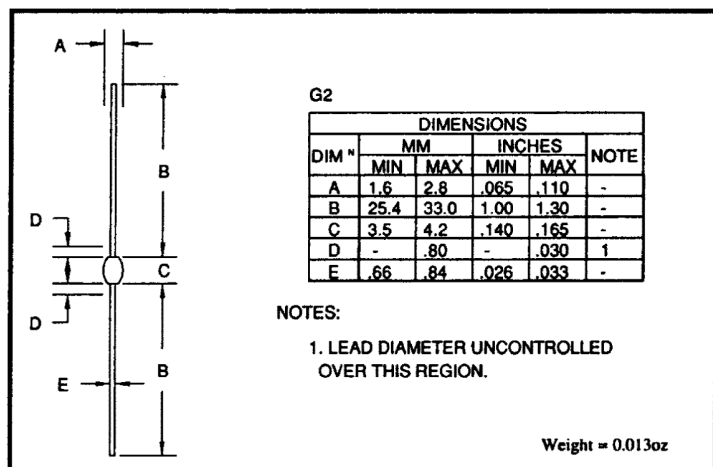
ABSOLUTE MAXIMUM RATINGS (@ 25°C unless otherwise specified)

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



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CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	1N5614	1N5616	1N5618	1N5620	1N5622	Unit	
		S2M	S4M	S6M	S8M	S0M		
Average forward current (sine wave) - max. pcb mounted; T _A = 55°C - max. L = 3/8"; T _L = 55°C	I _{F(AV)}	←----- 1.0 -----→						A
I ² t for fusing (t = 8.3mS) max.	I ² t	←----- 2.0 -----→						A
Forward voltage drop max. @ I _F = 1.0A, T _j = 25°C	V _F	←----- 5.0 -----→						A ² S
Reverse current max. @ V _{RWM} , T _j = 25°C @ V _{RWM} , T _j = 100°C	I _R	←----- 1.1 -----→						V
Reverse recovery time max. 0.5A I _F to 1.0A I _R . Recovers to 0.25A I _{RR} .	t _{rr}	←----- 0.5 -----→						μA
Junction capacitance typ. @ V _R = 5V, f = 1MHz	C _j	←----- 25 -----→						μA
Thermal resistance - junction to lead Lead length = 0.375"	R _{θJL}	←----- 2.0 -----→						μS
Lead length = 0"	R _{θJL}	←----- 23 -----→						ρF
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	R _{θJA}	←----- 36 -----→						°C/W
		←----- 7 -----→						°C/W
		←----- 95 -----→						°C/W

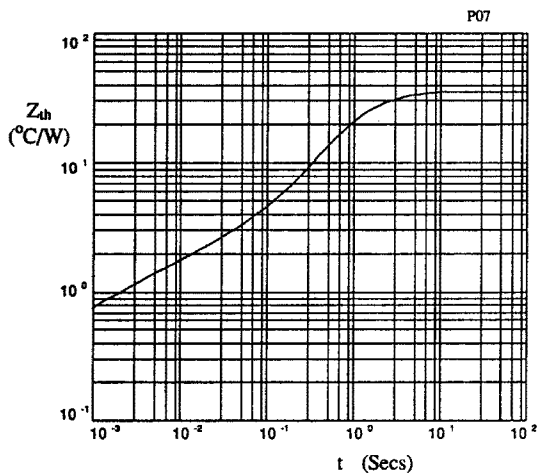


Fig 1. Transient thermal impedance characteristic.

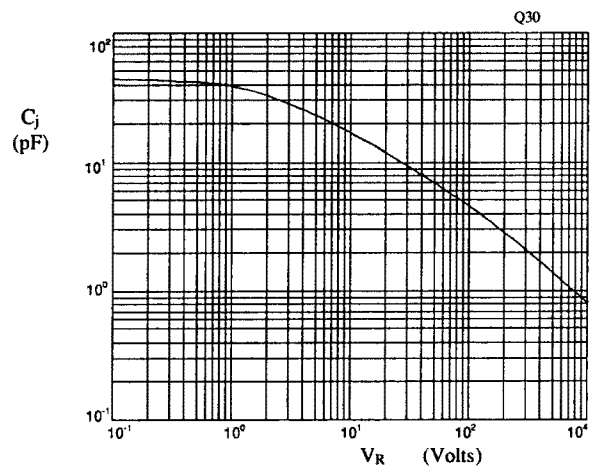


Fig 2. Typical junction capacitance as a function of reverse voltage.

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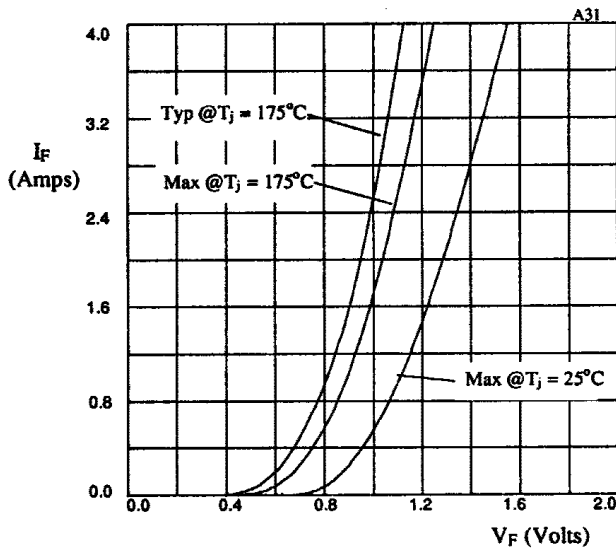


Fig 3. Forward voltage drop as a function of forward current.

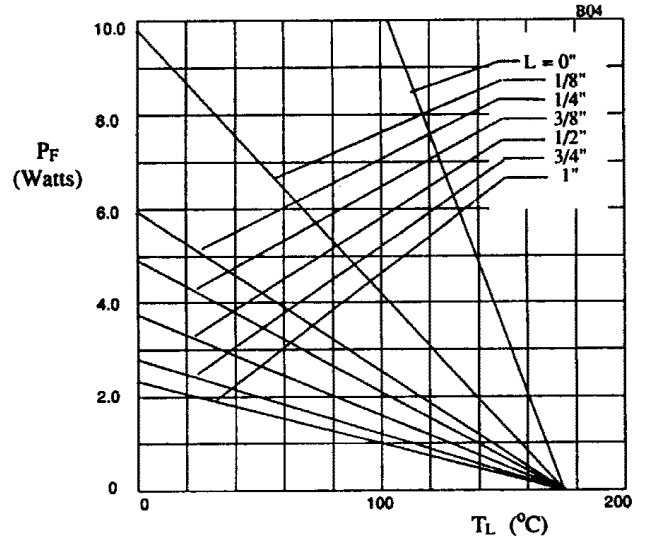


Fig 4. Maximum power versus lead temperature.

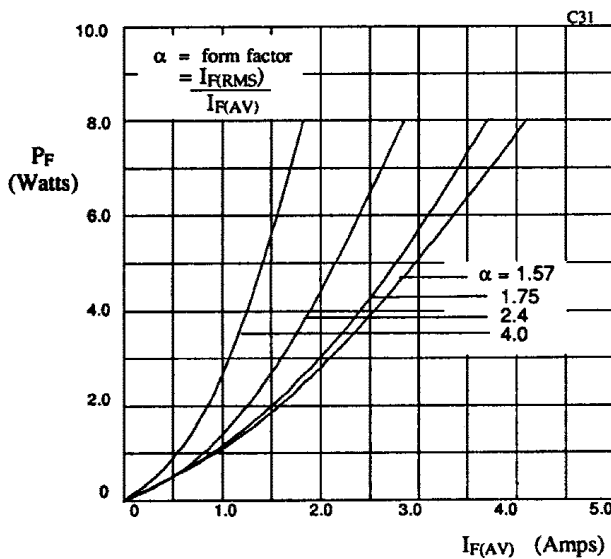


Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

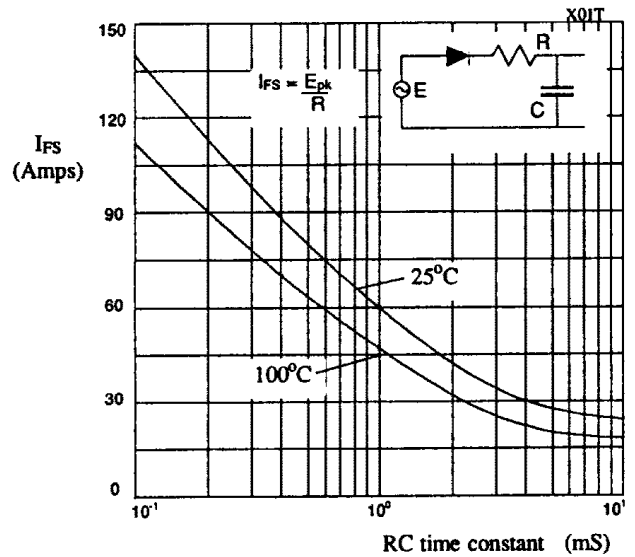


Fig 6. Maximum ratings for capacitive loads.