SEMTECH

RECTIFIER, up to 1kV, 5A, 2µs

1N5550 3SM2
1N5551 3SM4
1N5552 3SM6
1N5553 3SM8
1N5554 3SM0

January 7, 1998

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

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

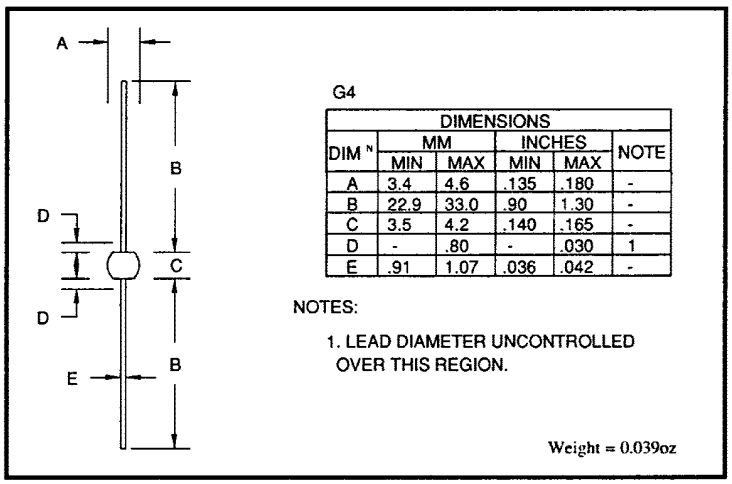
QUICK REFERENCE DATA

- V_R = 200 - 1000V
- I_F = 5.0A
- t_{rr} = 2µS
- V_F = 1.0V

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

	Symbol	1N5550 3SM2	1N5551 3SM4	1N5552 3SM6	1N5553 3SM8	1N5554 3SM0	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")	$I_{F(AV)}$	← 5.0 →					A
Repetitive surge current (@ 55°C in free air, lead length 0.375")	I_{FRM}	← 25 →					A
Non-repetitive surge current (t_p = 8.3mS, @ V_R & T_{jmax})	I_{FSM}	← 100 →					A
(t_p = 8.3mS, @ V_R & 25°C)	I_{FSM}	← 150 →					A
Storage temperature range	T_{STG}	← -65 to +175 →					°C
Operating temperature range	T_{OP}	← -65 to +175 →					°C

MECHANICAL



G4

DIM	DIMENSIONS MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	3.4	4.6	.135	.180	-
B	22.9	33.0	.90	1.30	-
C	3.5	4.2	.140	.165	-
D	-	.80	-	.030	1
E	.91	1.07	.036	.042	-

NOTES:

1. LEAD DIAMETER UNCONTROLLED OVER THIS REGION.

Weight = 0.039oz

These products are qualified to MIL-S-19500/420 and are preferred parts as listed in MIL-STD-701.
They can be supplied fully released as JAN, JANTX, and JANTXV versions.

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

652 MITCHELL ROAD NEWBURY PARK CA 91320

January 7, 1998

CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	1N5550 1N5551 1N5552 1N5553 1N5554 3SM2 3SM4 3SM6 3SM8 3SM0	Unit
Average forward current (sine wave) - max. T_A = 55°C - max. L = 3/8"; T_L = 55°C	 $I_{F(AV)}$ $I_{F(AV)}$	 3.0 5.0	 A A
I^2t for fusing (t = 8.3mS) max.	I^2t	42	A^2S
Forward voltage drop max. @ I_F = 3.0A, T_j = 25°C	V_F	1.0	V
Reverse current max. @ V_{RWM}, T_j = 25°C @ V_{RWM}, T_j = 100°C	 I_R I_R	 1.0 20	 µA 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	92	ρF
Thermal resistance - junction to lead Lead length = 0.375" Lead length = 0"	 $R_{\theta JL}$ $R_{\theta JL}$	 20 4	 °C/W °C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	$R_{\theta JA}$	75	°C/W

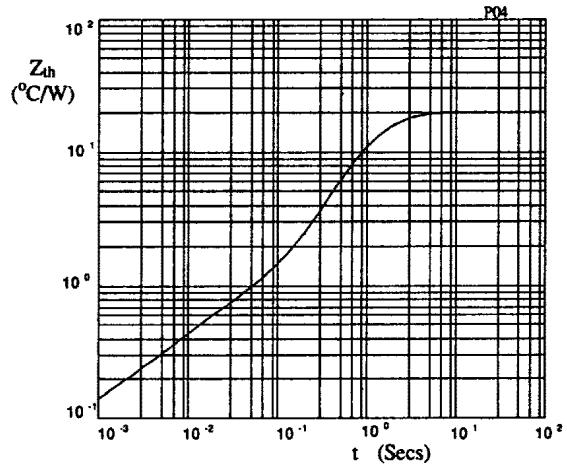


Fig 1. Transient thermal impedance characteristic.

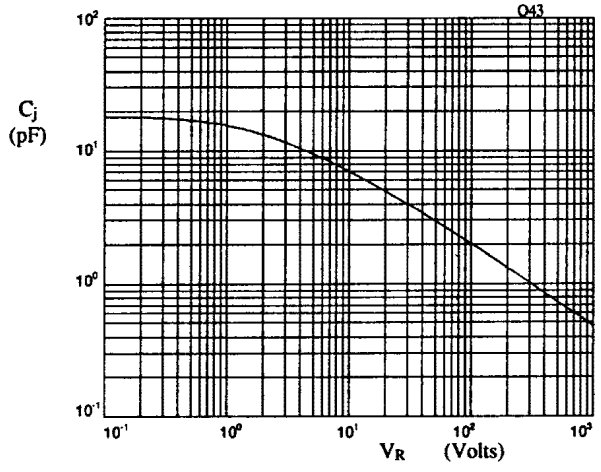


Fig 2. Typical junction capacitance as a function of reverse voltage.

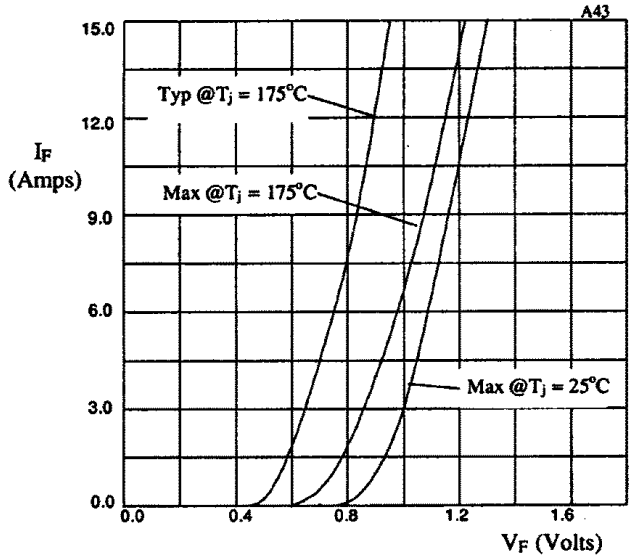


Fig 3. Forward voltage drop as a function of forward current.

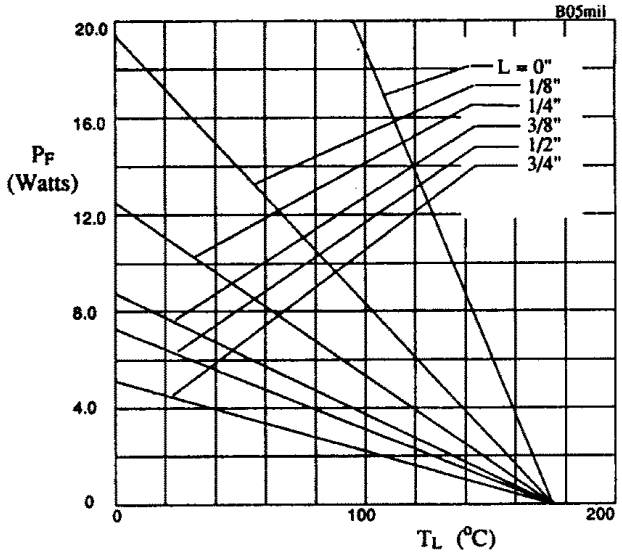


Fig 4. Maximum power versus lead temperature.

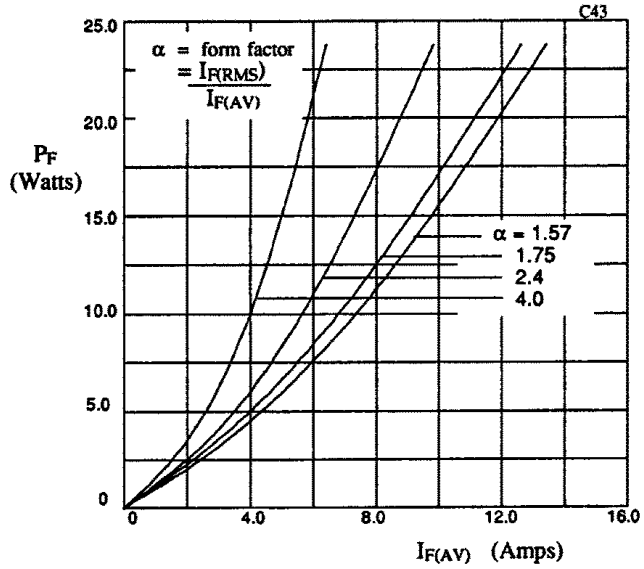


Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

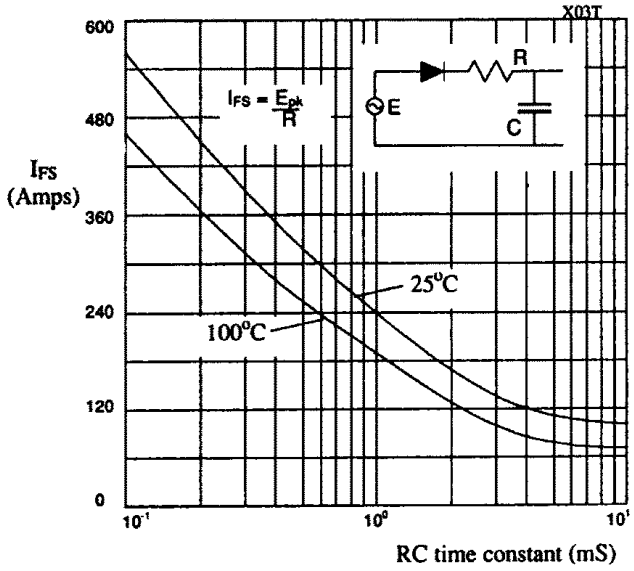


Fig 6. Maximum ratings for capacitive loads.