

January 7, 1998

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AXIAL LEADED HERMETICALLY SEALED STANDARD RECOVERY RECTIFIER DIODE

QUICK REFERENCE DATA

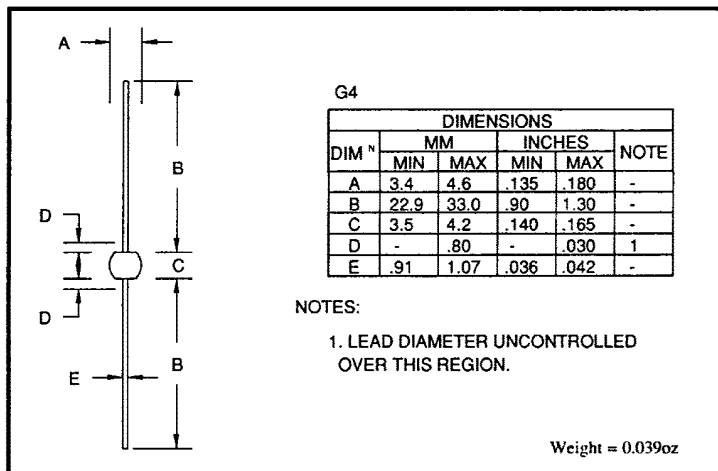
- low reverse leakage current
- Hermetically sealed in Metoxilite fused metal oxide
- Good thermal shock resistance
- Low forward voltage drop
- Avalanche capability

- $V_R = 200 - 1000V$
- $I_F = 5.0A$
- $t_{rr} = 2\mu S$
- $V_F = 1.0V$

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
Non-repetitive surge current ($t_p = 8.3mS$, @ 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



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.

January 7, 1998

CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	1N5550 3SM2	1N5551 3SM4	1N5552 3SM6	1N5553 3SM8	1N5554 3SM0	Unit	
Average forward current (sine wave) - max. $T_A = 55^\circ\text{C}$ - max. $L = 3/8"$; $T_L = 55^\circ\text{C}$	$I_{F(AV)}$	←----- 3.0 -----→						A
I^2t for fusing ($t = 8.3\text{mS}$) max.	I^2t	←----- 42 -----→						A ² S
Forward voltage drop max. @ $I_F = 3.0\text{A}$, $T_j = 25^\circ\text{C}$	V_F	←----- 1.0 -----→						V
Reverse current max. @ V_{RWM} , $T_j = 25^\circ\text{C}$ @ V_{RWM} , $T_j = 100^\circ\text{C}$	I_R	←----- 1.0 -----→						μA
	I_R	←----- 20 -----→						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. @ $V_R = 5\text{V}$, $f = 1\text{MHz}$	C_j	←----- 92 -----→						pF
Thermal resistance - junction to lead Lead length = 0.375"	$R_{\theta JL}$	←----- 20 -----→						°C/W
Lead length = 0"	$R_{\theta JL}$	←----- 4 -----→						°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	$R_{\theta JA}$	←----- 75 -----→						°C/W

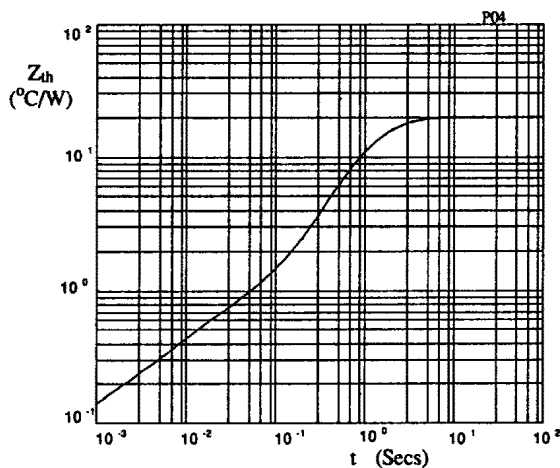


Fig 1. Transient thermal impedance characteristic.

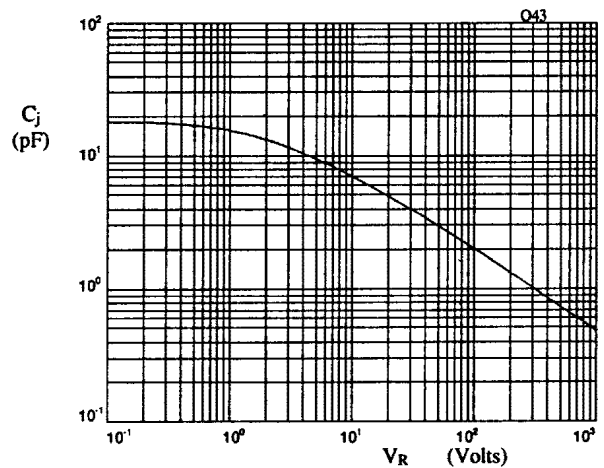


Fig 2. Typical junction capacitance as a function of reverse voltage.

January 7, 1998

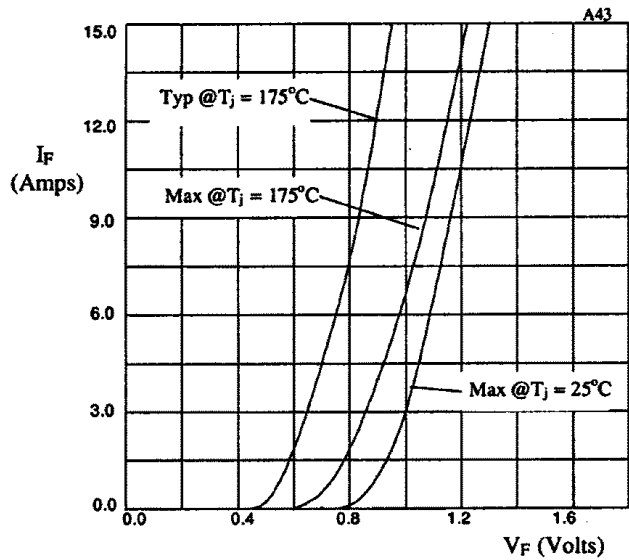


Fig 3. Forward voltage drop as a function of forward current.

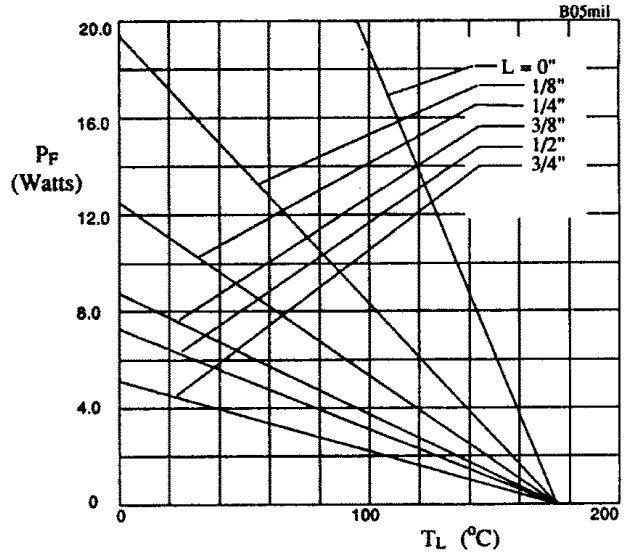


Fig 4. Maximum power versus lead temperature.

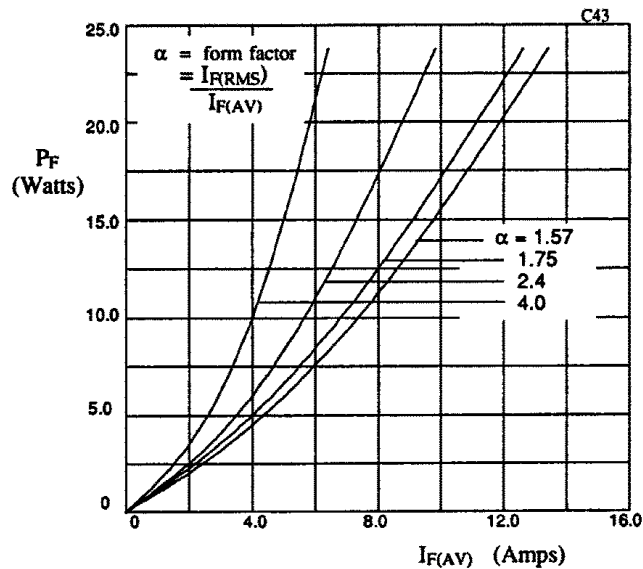


Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

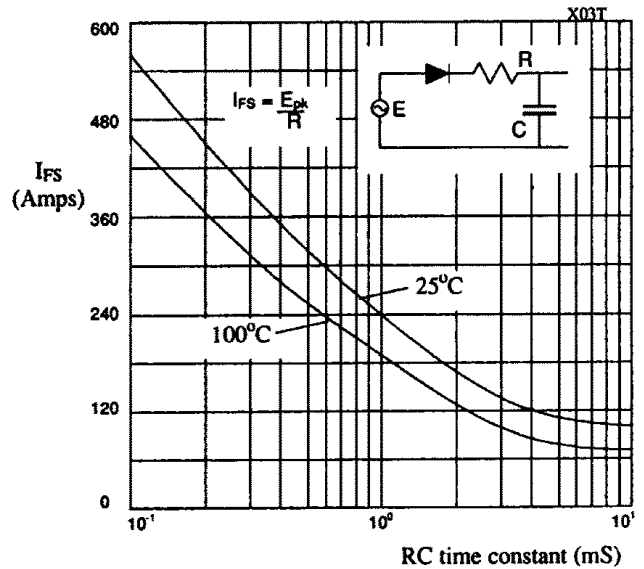


Fig 6. Maximum ratings for capacitive loads.