

AXIAL LEADED HERMETICALLY SEALED FAST RECTIFIER DIODE

QUICK REFERENCE DATA

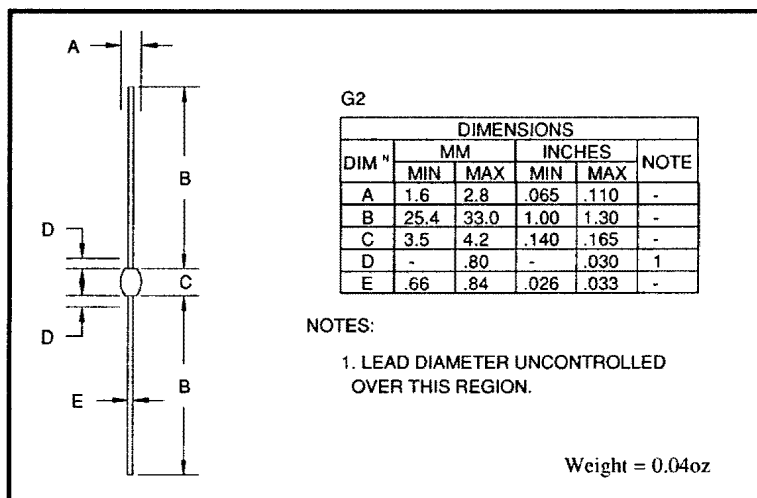
- Low reverse recovery time
- Hermetically sealed in Metoxilite fused metal oxide
- Low switching losses
- Low forward voltage drop
- Soft, non-snap off, recovery characteristics

- $V_R = 200 - 1000V$
- $I_F = 2.00A$
- $t_{rr} = 150 - 500ns$
- $I_R = 0.5\mu A$

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

	Symbol	1N5615 S2F	1N5617 S4F	1N5619 S6F	1N5621 S8F	1N5623 S0F	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}	← 6.0 →					A
Non-repetitive surge current ($t_p = 8.3ms$, @ V_R & T_{jmax})	I_{FSM}	← 25 →					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-19500/429 and are preferred parts as listed in MIL-STD-701. They can be supplied fully released as JAN, JANTX, JANTXV and JANS version. These products are qualified in Europe to DEF STAN 59-61 (PART 80)/029.

ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	1N5615 S2F	1N5617 S4F	1N5619 S6F	1N5621 S8F	1N5623 S0F	Unit
Average forward current max. (pcb mounted; $T_A = 55^\circ\text{C}$) for sine wave	$I_F(\text{AV})$	← 1.00 →					A
for square wave ($d = 0.5$)	$I_F(\text{AV})$	← 1.05 →					A
Average forward current max. ($T_L = 55^\circ\text{C}$; $L = 3/8"$) for sine wave	$I_F(\text{AV})$	← 1.95 →					A
for square wave	$I_F(\text{AV})$	← 2.00 →					A
I^2t for fusing ($t = 8.3\text{mS}$) max.	I^2t	← 2.5 →					A ² S
Forward voltage drop max. @ $I_F = 1.0\text{A}$, $T_j = 25^\circ\text{C}$	V_F	← 1.2 →					V
Reverse current max. @ V_{RWM} , $T_j = 25^\circ\text{C}$	I_R	← 0.5 →					μA
@ V_{RWM} , $T_j = 100^\circ\text{C}$	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}	150	150	250	300	500	nS
Junction capacitance typ. @ $V_R = 5\text{V}$, $f = 1\text{MHz}$	C_j	27	27	27	18	18	pF

THERMAL CHARACTERISTICS

	Symbol	1N5615 S2F	1N5617 S4F	1N5619 S6F	1N5621 S8F	1N5623 S0F	Unit
Thermal resistance - junction to lead Lead length = 0.375"	$R_{\theta\text{JL}}$	← 38 →					°C/W
Lead length = 0.0"	$R_{\theta\text{JL}}$	← 7 →					°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	$R_{\theta\text{JA}}$	← 95 →					°C/W

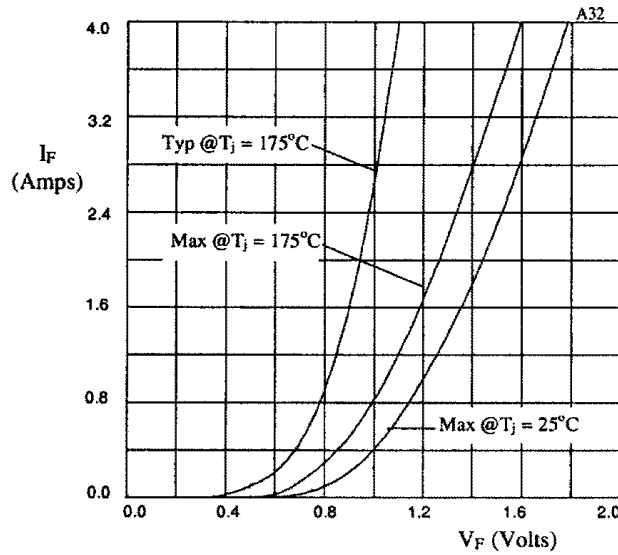


Fig 1. Forward voltage drop as a function of forward current.

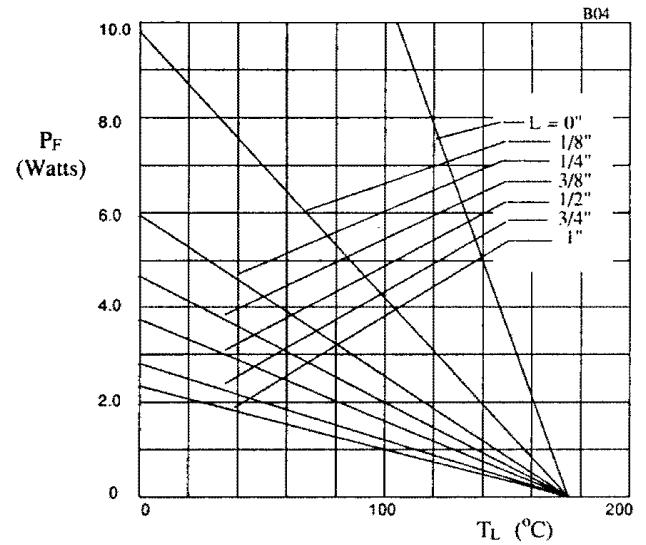


Fig 2. Maximum power versus lead temperature.

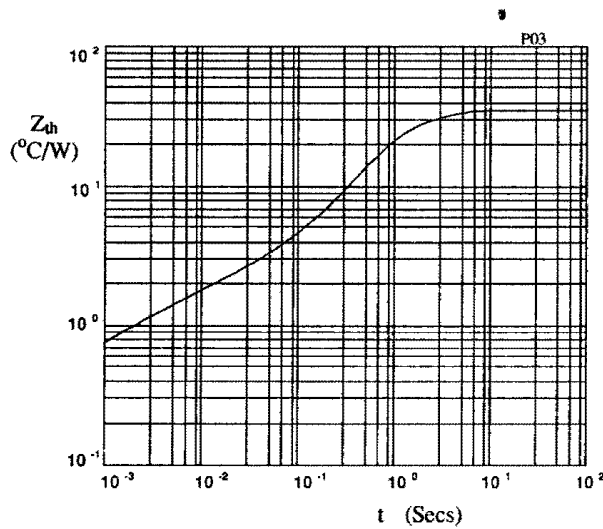


Fig 3. Transient thermal impedance characteristic.

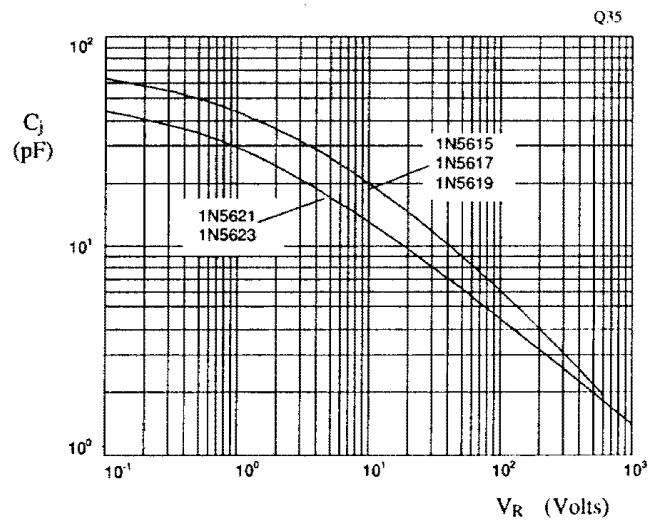


Fig 4. Typical junction capacitance as a function of reverse voltage.

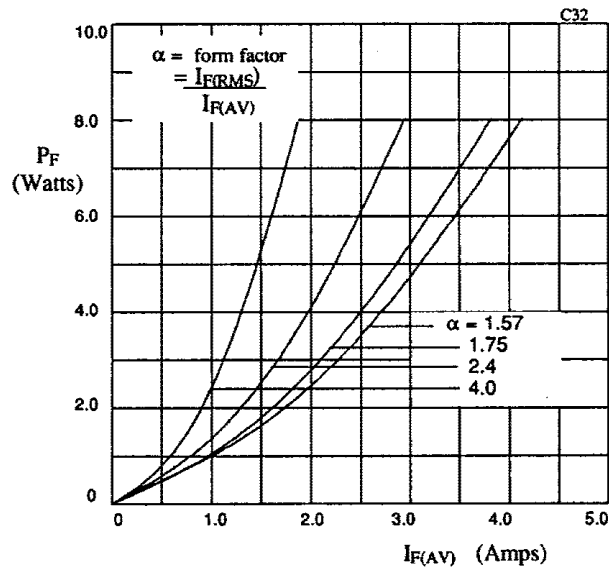


Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

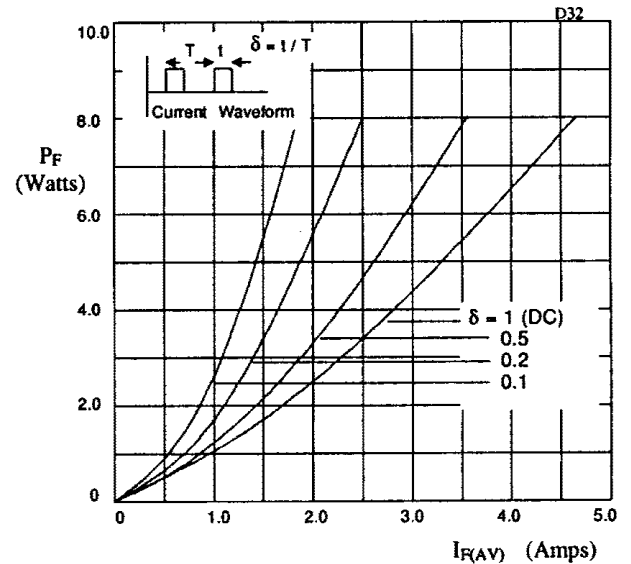


Fig 6. Forward power dissipation as a function of forward current, for square wave operation.

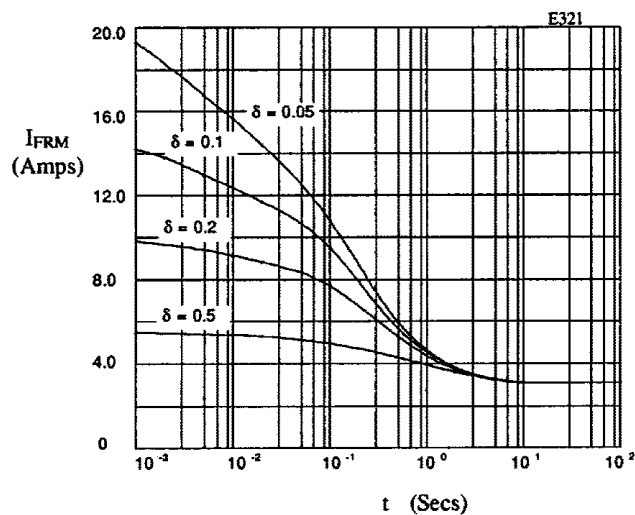


Fig 7. Typical repetitive forward current as a function of pulse width at 55°C; $R_{\theta J L} = 35 \text{ }^{\circ}\text{C/W}$; V_{RWM} during $1 - \delta$.

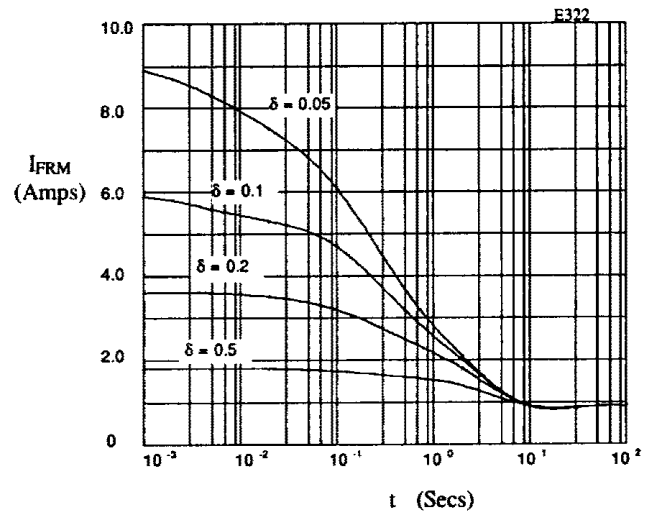


Fig 8. Typical repetitive forward current as a function of pulse width at 100°C; $R_{\theta J L} = 95 \text{ }^{\circ}\text{C/W}$; V_{RWM} during $1 - \delta$.