

## AXIAL LEADED HERMETICALLY SEALED FAST RECTIFIER DIODE

## QUICK REFERENCE DATA

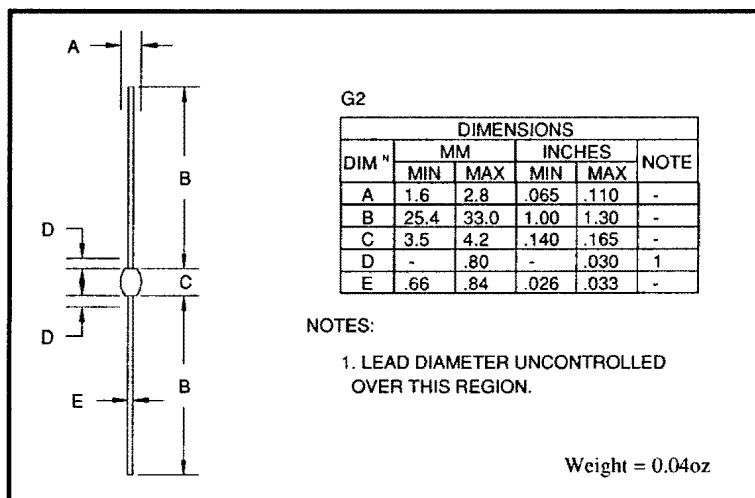
- Low reverse recovery time
- Hermetically sealed in Metoxilite fused metal oxide
- Low switching losses
- Low forward voltage drop
- Soft, non-snap off, recovery characteristics

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

### 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 <sub>A</sub> = 55°C) for sine wave	I <sub>F(AV)</sub>	←—————		1.00	—————→		A
	I <sub>F(AV)</sub>	←—————		1.05	—————→		A
Average forward current max. (T <sub>L</sub> = 55°C; L = 3/8") for sine wave	I <sub>F(AV)</sub>	←—————		1.95	—————→		A
	I <sub>F(AV)</sub>	←—————		2.00	—————→		A
for square wave	I <sub>F(AV)</sub>	←—————		2.5	—————→		A <sup>2</sup> S
I <sup>2</sup> t for fusing (t = 8.3mS) max.	I <sup>2</sup> t	←—————		2.5	—————→		A <sup>2</sup> S
Forward voltage drop max. @ I <sub>F</sub> = 1.0A, T <sub>j</sub> = 25°C	V <sub>F</sub>	←—————		1.2	—————→		V
Reverse current max. @ V <sub>RWM</sub> , T <sub>j</sub> = 25°C	I <sub>R</sub>	←—————		0.5	—————→		μA
	I <sub>R</sub>	←—————		25	—————→		μA
@ V <sub>RWM</sub> , T <sub>j</sub> = 100°C	I <sub>R</sub>	←—————		25	—————→		μA
Reverse recovery time max. 0.5A I <sub>F</sub> to 1.0A I <sub>R</sub> . Recovers to 0.25A I <sub>RR</sub>	t <sub>rr</sub>	150	150	250	300	500	nS
Junction capacitance typ. @ V <sub>R</sub> = 5V, f = 1MHz	C <sub>j</sub>	27	27	27	18	18	ρF

**THERMAL CHARACTERISTICS**

	Symbol	1N5615 S2F	1N5617 S4F	1N5619 S6F	1N5621 S8F	1N5623 S0F	Unit
Thermal resistance - junction to lead Lead length = 0.375"	R <sub>θJL</sub>	←—————		38	—————→		°C/W
	R <sub>θJL</sub>	←—————		7	—————→		°C/W
Lead length = 0.0"	R <sub>θJL</sub>	←—————		7	—————→		°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	R <sub>θJA</sub>	←—————		95	—————→		°C/W

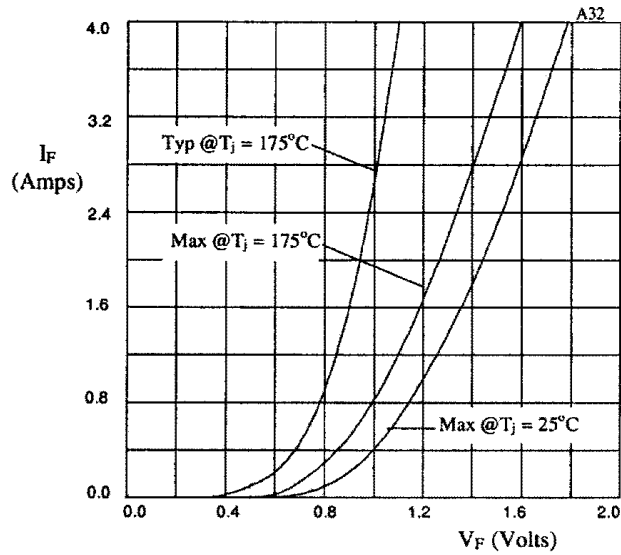


Fig 1. Forward voltage drop as a function of forward current.

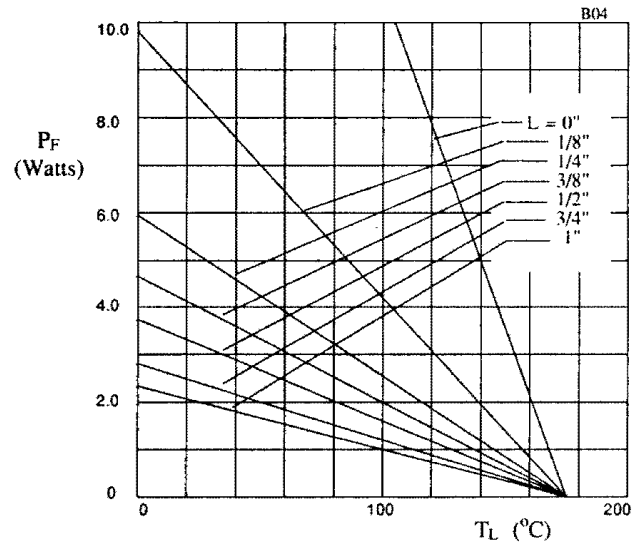


Fig 2. Maximum power versus lead temperature.

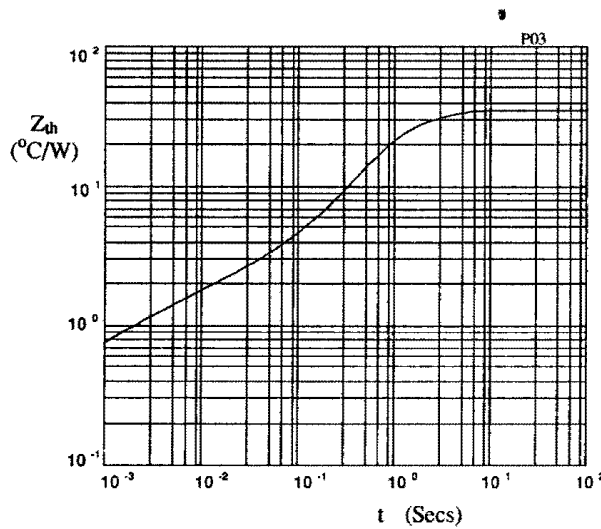


Fig 3. Transient thermal impedance characteristic.

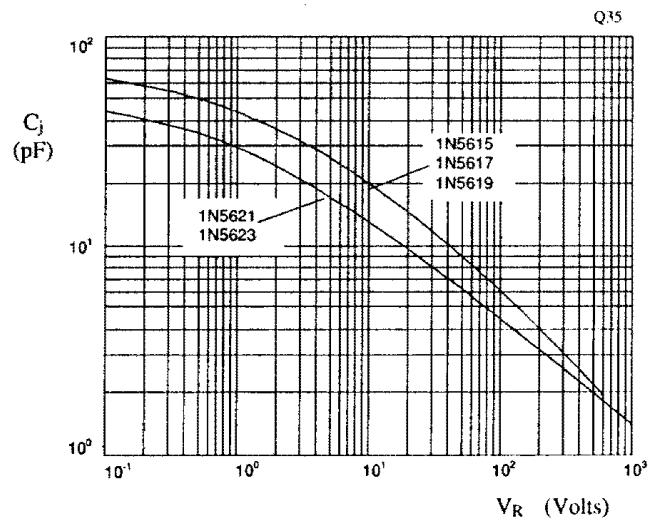


Fig 4. Typical junction capacitance as a function of reverse voltage.

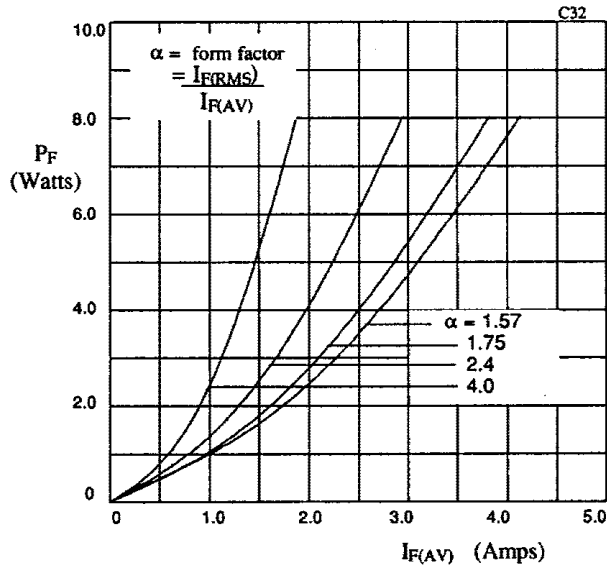


Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

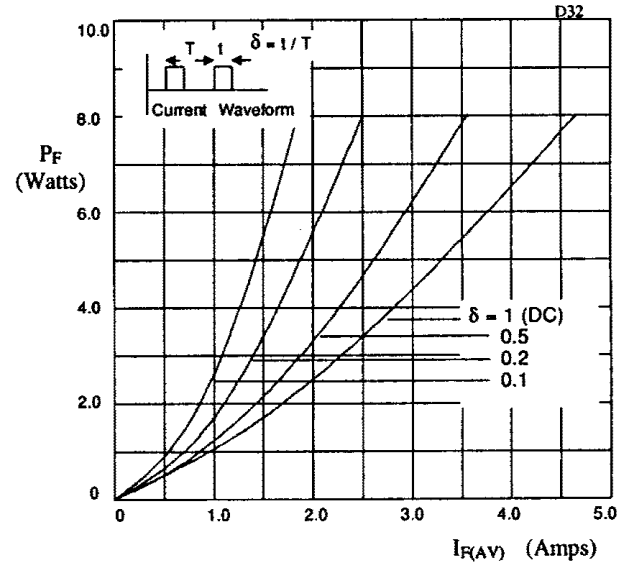


Fig 6. Forward power dissipation as a function of forward current, for square wave operation.

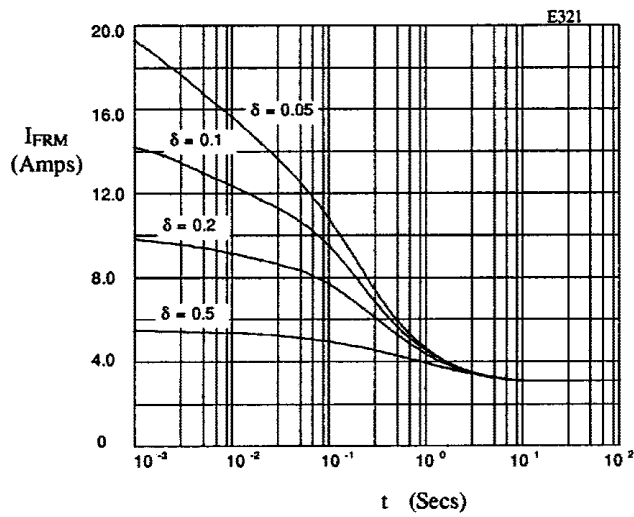


Fig 7. Typical repetitive forward current as a function of pulse width at 55°C;  $R_{\theta JL} = 35 \text{ }^\circ\text{C/W}$ ;  $V_{RWM}$  during  $1 - \delta$ .

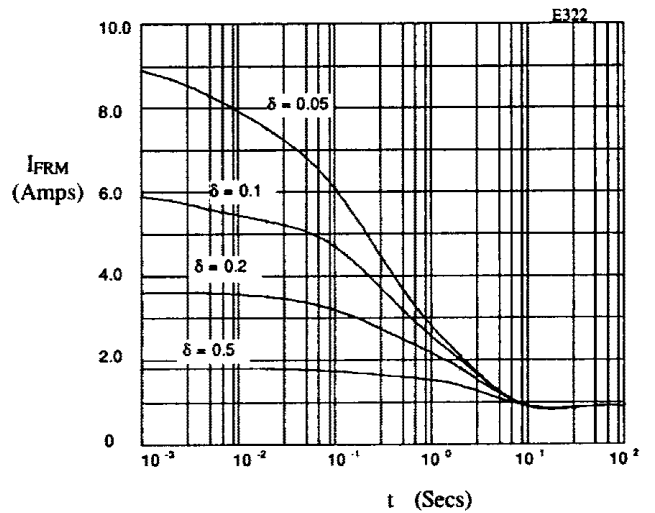


Fig 8. Typical repetitive forward current as a function of pulse width at 100°C;  $R_{\theta JL} = 95 \text{ }^\circ\text{C/W}$ ;  $V_{RWM}$  during  $1 - \delta$ .