

## AXIAL LEADED HERMETICALLY SEALED SUPERFAST RECTIFIER DIODE

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

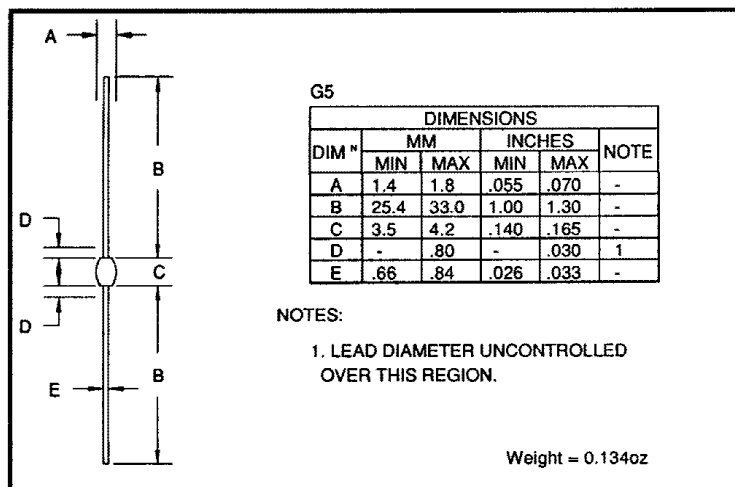
## QUICK REFERENCE DATA

- $V_R = 50 - 150V$
- $I_F = 1.8A$
- $t_{rr} = 30nS$
- $V_F = 1.2V$

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

	Symbol	1N6073 FF05	1N6074 FF10	1N6075 FF15	Unit
Working reverse voltage	$V_{RWM}$	50	100	150	V
Repetitive reverse voltage	$V_{RRM}$	50	100	150	V
Average forward current (@ 55°C, lead length = 0.375")	$I_{F(AV)}$	←	1.8	→	A
Repetitive surge current (@ 55°C, lead length = 0.375")	$I_{FRM}$	←	14.0	→	A
Non-repetitive surge current ( $t_p = 8.3ms$ , @ $V_R$ & $T_{jmax}$ )	$I_{FSM}$	←	35.0	→	A
Storage temperature range	$T_{STG}$	←	-65 to +150	→	°C
Operating temperature range	$T_{OP}$	←	-65 to +150	→	°C

### MECHANICAL



These products are qualified to MIL-S-19500/503.

They can be supplied fully released as JAN, JANTX, and JANTXV versions.

These products are qualified in Europe to DEF STAN 59-61 (PART 80)/029 available to F and FX levels.

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**ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)**

	Symbol	1N6073 FF05	1N6074 FF10	1N6075 FF15	Unit
Average forward current max. (pcb mounted; T <sub>A</sub> = 55°C) for sine wave for square wave (d = 0.5)	I <sub>F(AV)</sub>	← 0.85 →			A
	I <sub>F(AV)</sub>	← 0.90 →			A
Average forward current max. T <sub>L</sub> = 70°C; L = 0". T <sub>L</sub> = 55°C; L = 3/8"	I <sub>F(AV)</sub>	← 3.0 →			A
	I <sub>F(AV)</sub>	← 1.7 →			A
for sine wave for square wave	I <sub>F(AV)</sub>	← 1.8 →			A
	I <sup>2</sup> t	← 5.0 →			A <sup>2</sup> S
I <sup>2</sup> t for fusing (t = 8.3mS) max.	I <sup>2</sup> t	← 5.0 →			A <sup>2</sup> S
	V <sub>F</sub>	← 1.2 →			V
Forward voltage drop max. @ I <sub>F</sub> = 1.5A, T <sub>j</sub> = 25°C	V <sub>F</sub>	← 1.2 →			V
	I <sub>R</sub>	← 1.0 →			μA
Reverse current max. @ V <sub>RWM</sub> , T <sub>j</sub> = 25°C @ V <sub>RWM</sub> , T <sub>j</sub> = 100°C	I <sub>R</sub>	← 50 →			μA
	t <sub>rr</sub>	← 30 →			nS
Reverse recovery time 0.5A I <sub>F</sub> , 1.0A I <sub>R</sub> , 0.25A I <sub>RR</sub> .	t <sub>rr</sub>	← 30 →			nS
	C <sub>j</sub>	← 28 →			pF
Junction capacitance typ. @ V <sub>R</sub> = 5V, f = 1MHz	C <sub>j</sub>	← 28 →			pF

**THERMAL CHARACTERISTICS**

	Symbol	1N6073 FF05	1N6074 FF10	1N6075 FF15	Unit
Thermal resistance - junction to lead Lead length = 0.375"	R <sub>θJL</sub>	← 46 →			°C/W
	R <sub>θJL</sub>	← 13 →			°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	R <sub>θJA</sub>	← 95 →			°C/W

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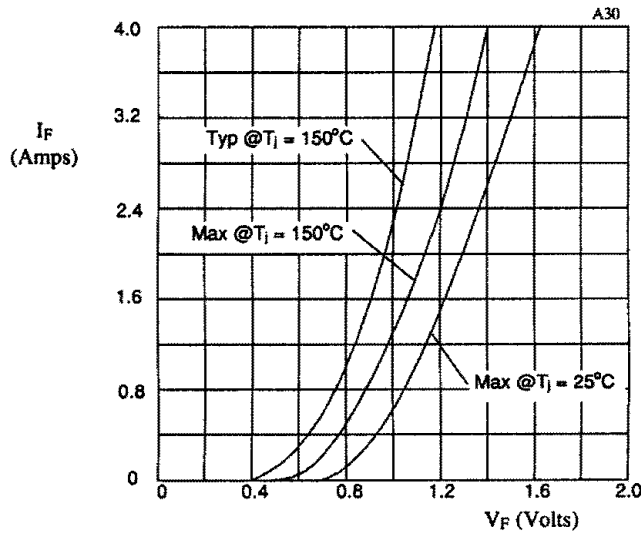


Fig 1. Forward voltage drop as a function of forward current.

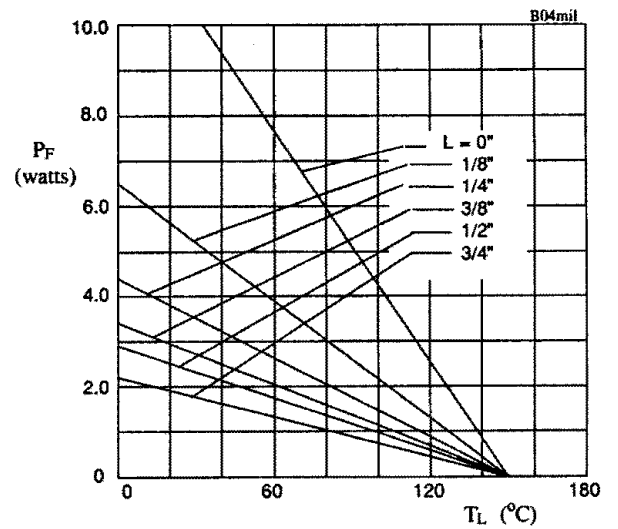


Fig 2. Maximum power versus lead temperature.

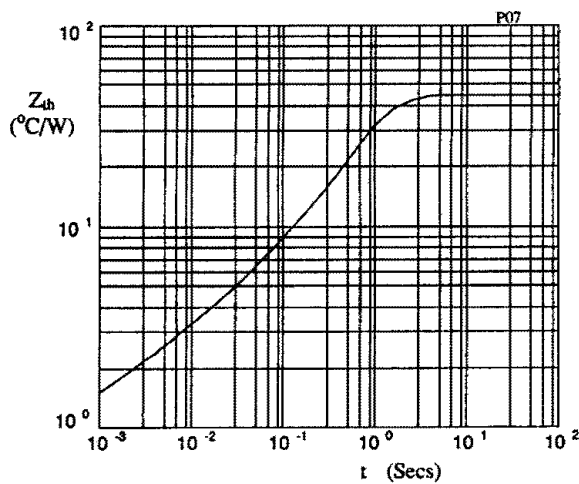


Fig 3. Transient thermal impedance characteristic.

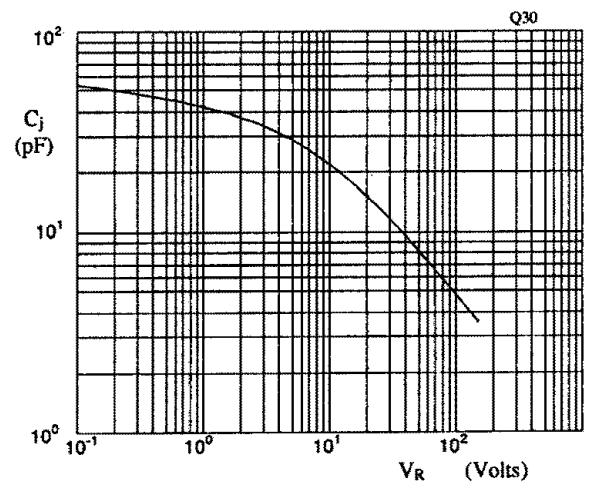


Fig 4. Typical junction capacitance as a function of reverse voltage.

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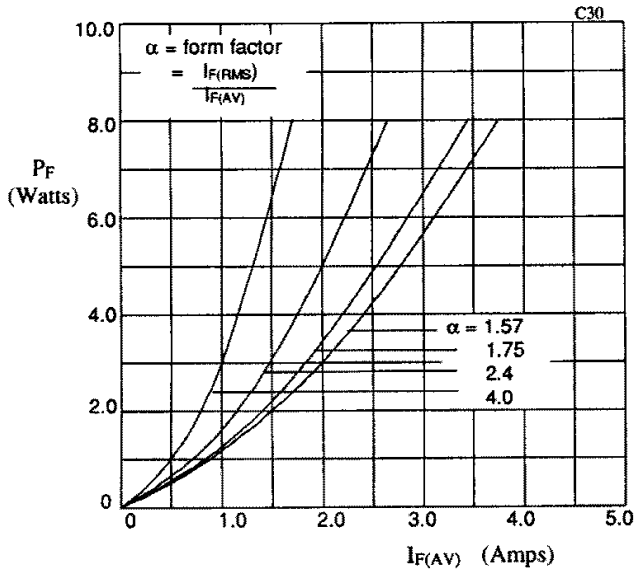


Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

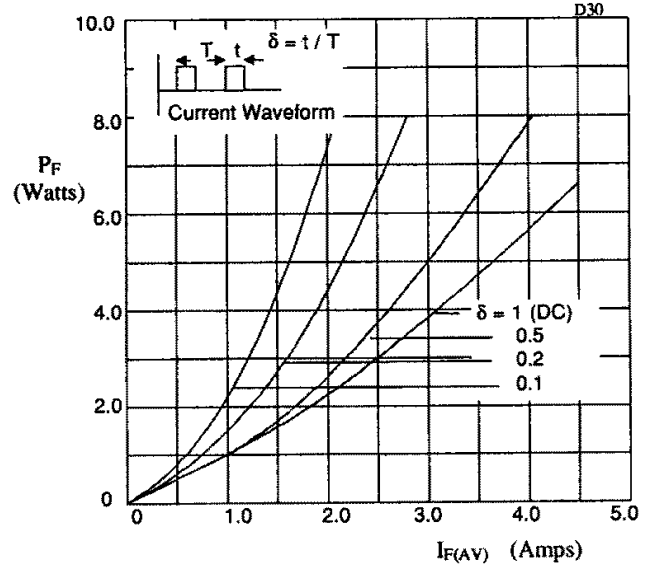


Fig 6. Forward power dissipation as a function of forward current, for square wave operation.

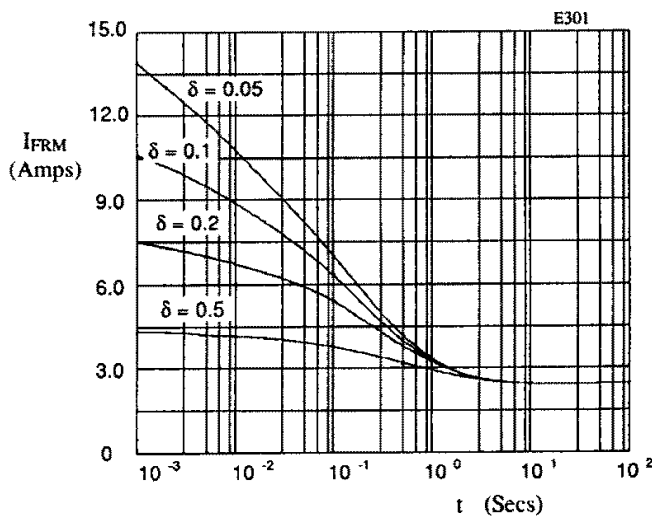


Fig 7. Maximum repetitive forward current as a function of pulse width at 55°C;  $R_{\theta JL} = 45\text{ }^{\circ}\text{C/W}$ ;  $V_{RWM}$  during  $1 - \delta$ .

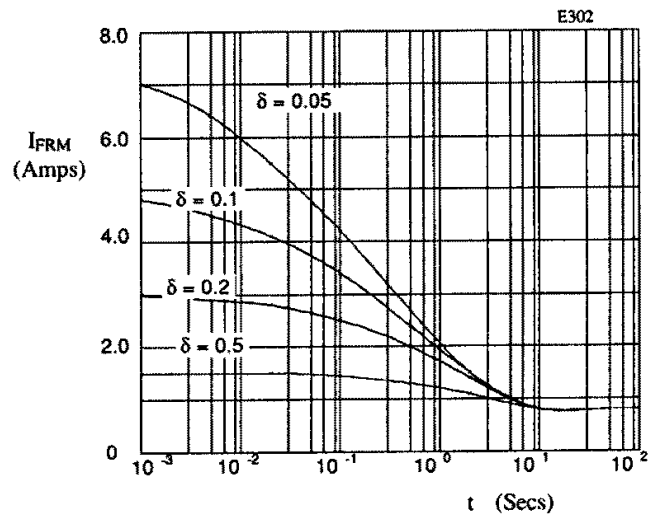


Fig 8. Maximum repetitive forward current as a function of pulse width at 100°C;  $R_{\theta JL} = 110\text{ }^{\circ}\text{C/W}$ ;  $V_{RWM}$  during  $1 - \delta$ .