micross
one source. one solution.

RECTIFIER, up to 150V, 5A, 30ns

1N6079	5FF05
1N6080	5FF10
1N6081	5FF15

January 7, 1998

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

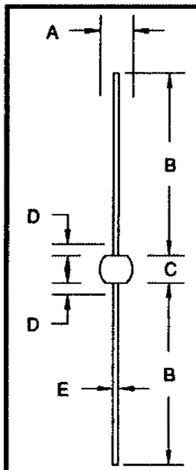
QUICK REFERENCE DATA

- V_R = 50 - 150V
- I_F = 5.0A
- t_{rr} = 30nS
- V_F = 0.97V

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

	Symbol	1N6079 5FF05	1N6080 5FF10	1N6081 5FF15	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")	$I_{F(av)}$	←	5.0	→	A
Repetitive surge current (@ 55°C in free air, lead length 0.375")	I_{FRM}	←	24	→	A
Non-repetitive surge current (t_p = 8.3mS, @ V_R & T_{jmax})	I_{FSM}	←	175	→	A
Storage temperature range	T_{STG}	←	-65 to +150	→	°C
Operating temperature range	T_{OP}	←	-65 to +150	→	°C

MECHANICAL



G4

DIM	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-19500/503.
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)/030 available to F and FX levels.

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ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	1N6079 5FF05	1N6080 5FF10	1N6081 5FF15	Unit
Average forward current max. $T_A = 55°C$ for sine wave	$I_{F(AV)}$	←	2.0	→	A
Average forward current max. $T_L = 70°C$; L = 0"	$I_{F(AV)}$	←	12.0	→	A
$T_L = 55°C$; L = 3/8" for sine wave	$I_{F(AV)}$	←	4.8	→	A
for square wave	$I_{F(AV)}$	←	5.0	→	A
I^2t for fusing (t = 8.3mS) max.	I^2t	←	127	→	A^2S
Forward voltage drop max. @ $I_F = 5.0A$, $T_j = 25°C$	V_F	←	0.97	→	V
Reverse current max. @ V_{RWM}, $T_j = 25°C$	I_R	←	10	→	µA
@ V_{RWM}, $T_j = 100°C$	I_R	←	500	→	µA
Reverse recovery time max. 0.5A I_F to 1.0A I_R. Recovers to 0.25A I_{RR}.	t_{rr}	←	30	→	nS
Junction capacitance typ. @ $V_R = 5V$, f = 1MHz	C_j	←	230	→	pF

THERMAL CHARACTERISTICS

	Symbol	1N6079 5FF05	1N6080 5FF10	1N6081 5FF15	Unit
Thermal resistance - junction to lead Lead length = 0.375"	$R_{\theta JL}$	←	23.5	→	°C/W
Lead length = 0.0"	$R_{\theta JL}$	←	5	→	°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	$R_{\theta JA}$	←	75	→	°C/W

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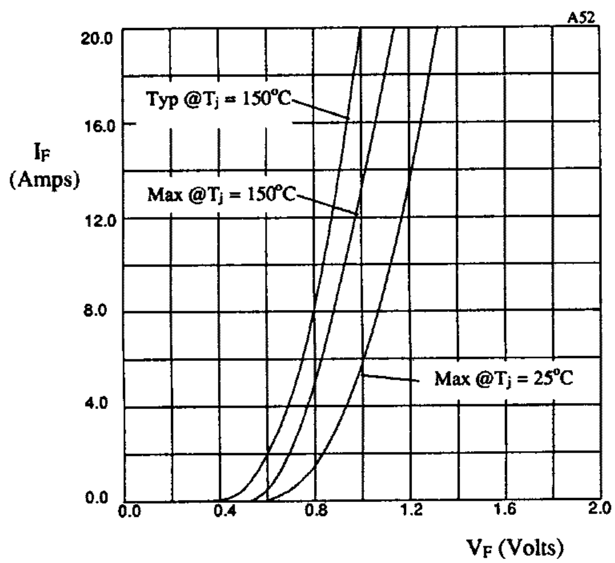

Fig 1. Forward voltage drop as a function of forward current

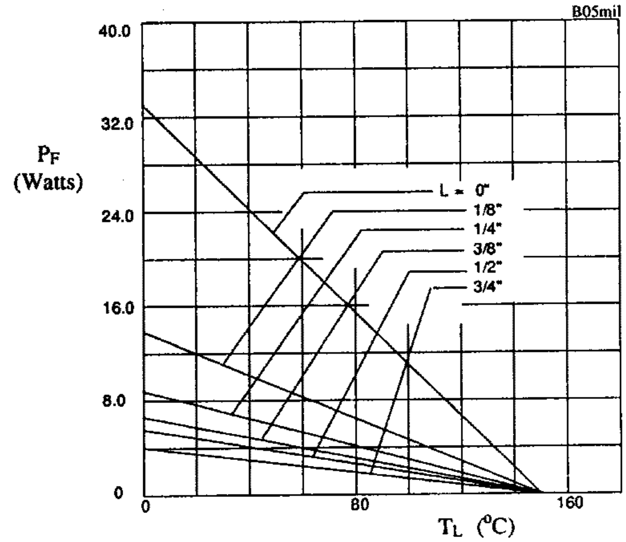

Fig 2. Maximum power versus lead temperature

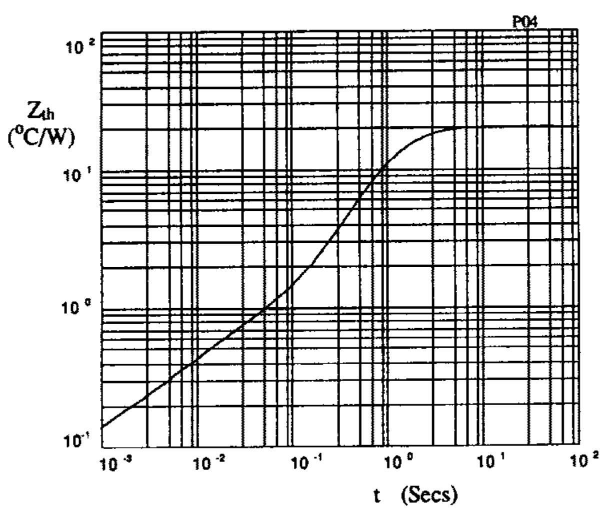

Fig 3. Transient thermal impedance characteristic.

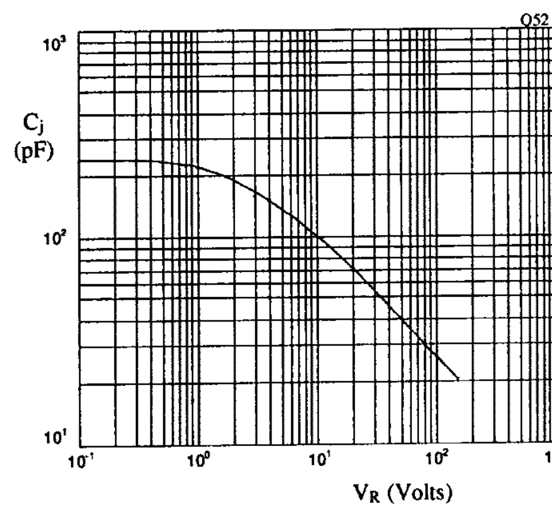

Fig 4. Typical junction capacitance as a function of reverse voltage.

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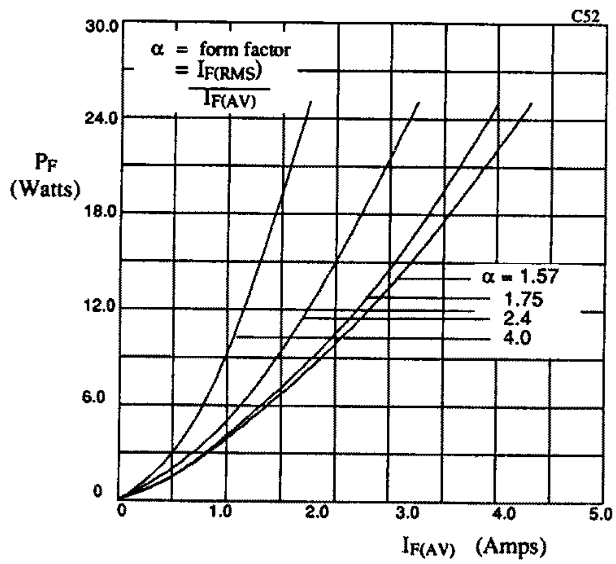

Fig 5. Forward power dissipation as a function of forward current, for sinusoidal operation.

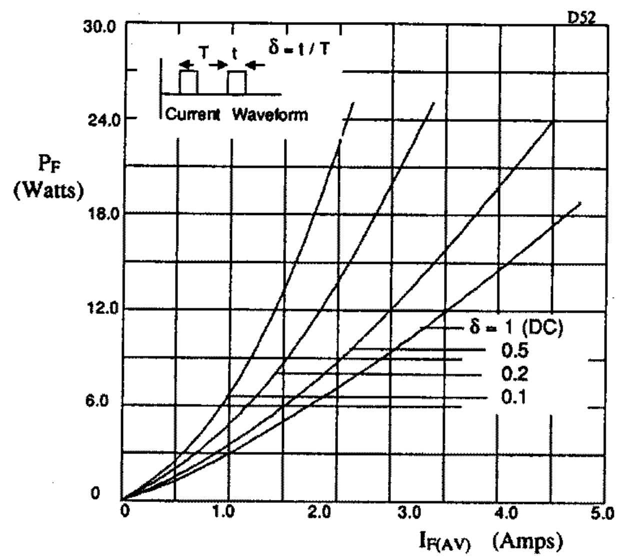

Fig 6. Forward power dissipation as a function of forward current, for square wave operation.

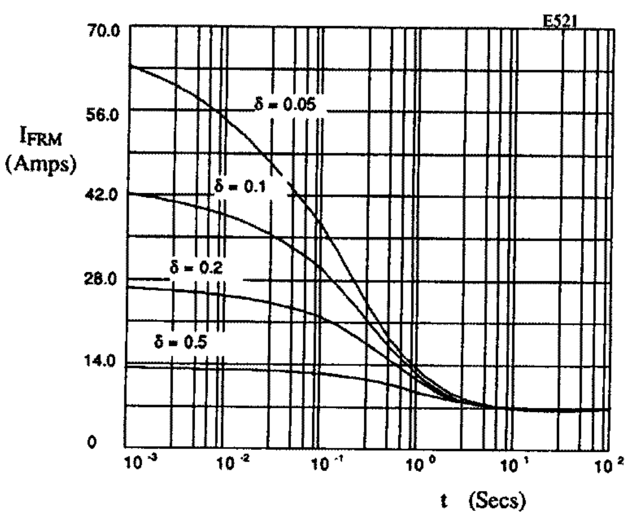

Fig 7. Maximum repetitive forward current as a function of pulse width at 55°C; $R_{\theta JL}$ = 20 °C/W; V_{RWM} during 1 - δ.

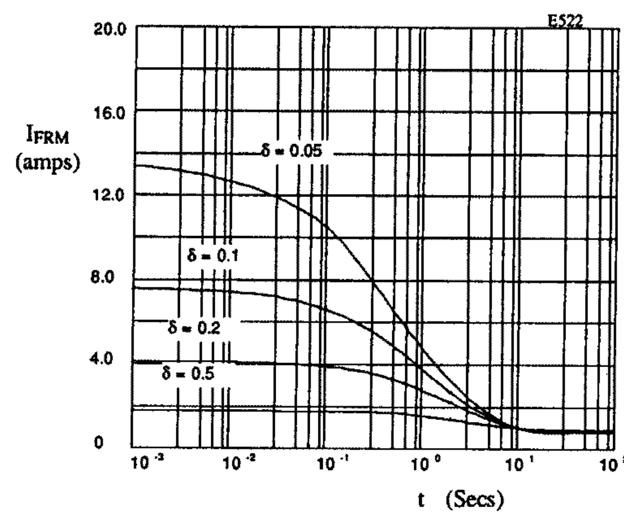

Fig 8. Maximum repetitive forward current as a function of pulse width at 100°C; $R_{\theta JL}$ = 80 °C/W; V_{RWM} during 1 - δ.