January 7, 1998

TEL:805-498-2111 FAX:805-498-3804 WEB:http://www.semtech.com

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

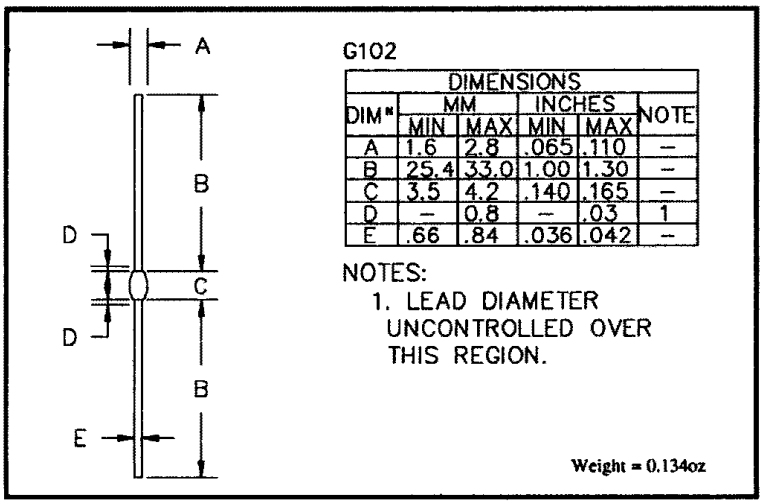
QUICK REFERENCE DATA

- V_R = 50 - 150V
- I_F = 3.1A
- t_{rr} = 30nS
- V_F = 1.2V

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

	Symbol	1N6076 3FF05	1N6077 3FF10	1N6078 3FF15	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")	$I_{F(AV)}$	←	3.1	→	A
Repetitive surge current (@ 55°C in free air, lead length 0.375")	I_{FRM}	←	14.0	→	A
Non-repetitive surge current (t_p = 8.3mS, @ V_R & T_{jmax})	I_{FSM}	←	70.0	→	A
Storage temperature range	T_{STG}	←	-65 to +150	→	°C
Operating temperature range	T_{OP}	←	-65 to +150	→	°C

MECHANICAL



G102

DIMENSIONS					
DIM	MM MIN	MM MAX	INCHES MIN	INCHES MAX	NOTE
A	1.6	2.8	.065	.110	–
B	25.4	33.0	1.00	1.30	–
C	3.5	4.2	.140	.165	–
D	–	0.8	–	.03	1
E	.66	.84	.036	.042	–

NOTES:
1. LEAD DIAMETER UNCONTROLLED OVER THIS REGION.

Weight = 0.134oz

These products are qualified to MIL-S-19500/503.
They can be supplied fully released as JAN, JANTX, and JANTXV versions.

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ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	1N6076 3FF05	1N6077 3FF10	1N6078 3FF15	Unit
Average forward current max. (pcb mounted; T_A = 55°C)					
for sine wave	$I_{F(AV)}$	←	1.30	→	A
for square wave (d = 0.5)	$I_{F(AV)}$	←	1.40	→	A
Average forward current max.					
T_L = 70°C; L = 0".	$I_{F(AV)}$	←	6.0	→	A
T_L = 55°C; L = 3/8"					
for sine wave	$I_{F(AV)}$	←	3.0	→	A
for square wave	$I_{F(AV)}$	←	3.1	→	A
I^2t for fusing (t = 8.3mS) max.	I^2t	←	5.1	→	A^2S
Forward voltage drop max. @ I_F = 3.0A, T_j = 25°C	V_F	←	1.2	→	V
Reverse current max.					
@ V_{RWM}, T_j = 25°C	I_R	←	5.0	→	µA
@ V_{RWM}, T_j = 100°C	I_R	←	100	→	µA
Reverse recovery time 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	←	60	→	pF

THERMAL CHARACTERISTICS

	Symbol	1N6076 3FF05	1N6077 3FF10	1N6078 3FF15	Unit
Thermal resistance - junction to lead					
Lead length = 0.0"	$R_{\theta JL}$	←	8.5	→	°C/W
Lead length = 0.375"	$R_{\theta JL}$	←	25	→	°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	$R_{\theta JA}$	←	90	→	°C/W