

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

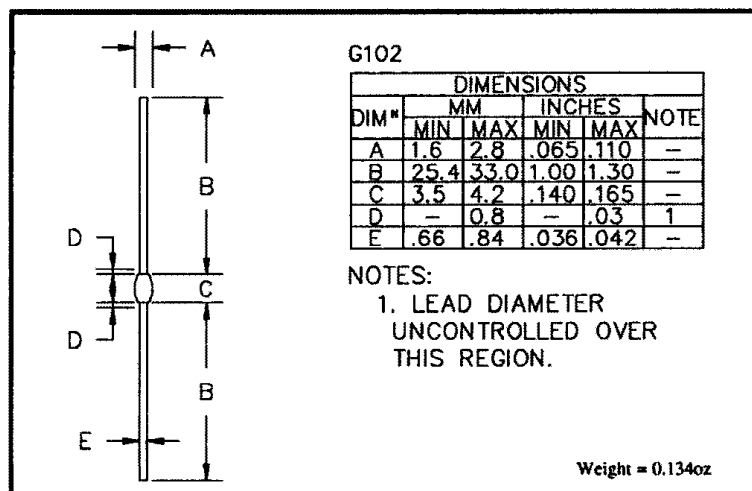
QUICK REFERENCE DATA

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

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



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"	I _{F(AV)}	←————— 3.0 —————→			A
for sine wave	I _{F(AV)}	←————— 3.1 —————→			A
for square wave	I _{F(AV)}	←————— 3.1 —————→			A
I ² t for fusing (t = 8.3mS) max.	I ² t	←————— 5.1 —————→			A ² S
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 —————→			ρF

THERMAL CHARACTERISTICS

	Symbol	1N6076 3FF05	1N6077 3FF10	1N6078 3FF15	Unit
Thermal resistance - junction to lead Lead length = 0.0"	R _{θJL}	←————— 8.5 —————→			°C/W
Lead length = 0.375"	R _{θJL}	←————— 25 —————→			°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	R _{θJA}	←————— 90 —————→			°C/W