

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

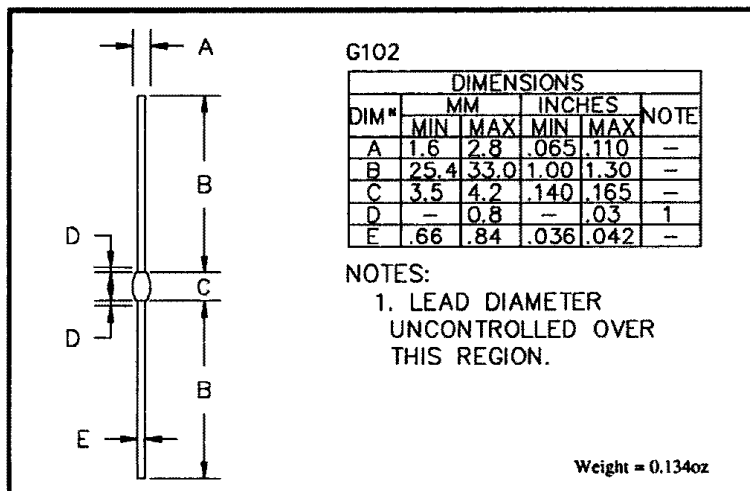
QUICK REFERENCE DATA

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

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 → | | | pF |

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 |