

January 7, 1998

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

AXIAL LEADED HERMETICALLY SEALED SUPERFAST RECTIFIER DIODE

QUICK REFERENCE DATA

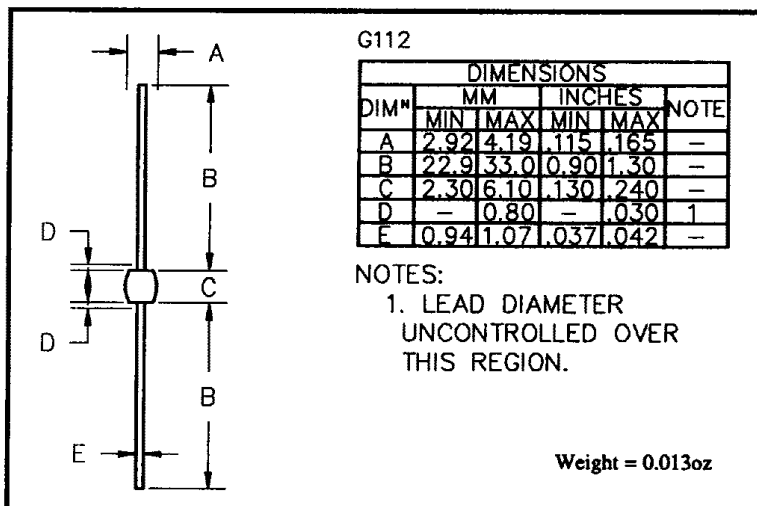
- Very low reverse recovery time
- Hermetical sealed in Metoxillite fused metal oxide
- Low switching losses
- Soft, non-snap off, recovery characteristics
- Very low forward voltage drop

- $V_R = 50 - 150V$
- $I_F = 6.0A$
- $t_{rr} = 30ns$
- $I_R = 5\mu A$

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

	Symbol	1N5807	1N5809	1N5811	Unit
Working reverse voltage	V_{RWM}	50	100	150	V
Repetitive reverse voltage	V_{RRM}	50	100	150	V
Average forward current (@ 75°C, lead length = 0.375")	$I_{F(AV)}$	← 6.0 →			A
Repetitive surge current (@ 55°C in free air, lead length 0.375")	I_{FRM}	← 25 →			A
Non-repetitive surge current ($t_p = 8.3ms$, @ V_R & T_{jmax})	I_{FSM}	← 125 →			A
Storage temperature range	T_{STG}	← -65 to +200 →			°C
Operating temperature range	T_{OP}	← -65 to +175 →			°C

MECHANICAL



These products are qualified to MIL-S-19500/477 and are preferred parts as listed in MIL-STD-701. They can be supplied fully released as JANTX and JANTXV versions.

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ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	1N5807	1N5809	1N5811	Unit
Average forward current max. (pcb mounted; $T_A = 55^\circ\text{C}$) for sine wave	$I_{F(AV)}$	← 1.7 →			A
for square wave ($d = 0.5$)	$I_{F(AV)}$	← 1.8 →			A
Average forward current max. ($T_L = 55^\circ\text{C}$; $L = 3/8"$) for sine wave	$I_{F(AV)}$	← 5.7 →			A
for square wave	$I_{F(AV)}$	← 6.0 →			A
I^2t for fusing ($t = 8.3\text{mS}$) max.	I^2t	← 32 →			A ² S
Forward voltage drop max. @ $I_F = 4.0\text{A}$, $T_j = 25^\circ\text{C}$	V_F	← 0.875 →			V
Reverse current max. @ V_{RWM} , $T_j = 25^\circ\text{C}$	I_R	← 5.0 →			μA
@ V_{RWM} , $T_j = 100^\circ\text{C}$	I_R	← 150 →			μA
Reverse recovery time max. 1.0A I_F to 1.0A I_R . Recovers to 0.1A I_{RR} .	t_{rr}	← 30 →			nS
Junction capacitance typ. @ $V_R = 5\text{V}$, $f = 1\text{MHz}$	C_j	← 60 →			pF

THERMAL CHARACTERISTICS

	Symbol	1N5807	1N5809	1N5811	Unit
Thermal resistance - junction to lead Lead length = 0.75"	$R_{\theta JL}$	← 35.5 →			°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	$R_{\theta JA}$	← 90 →			°C/W

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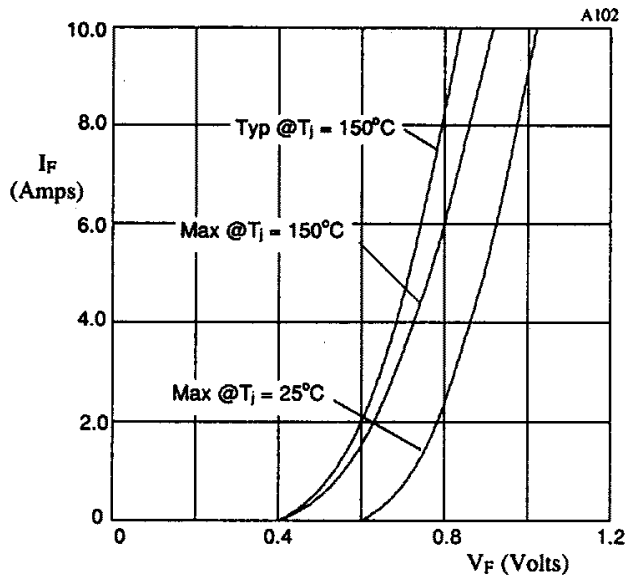


Fig 1. Forward voltage drop as a function of forward current.

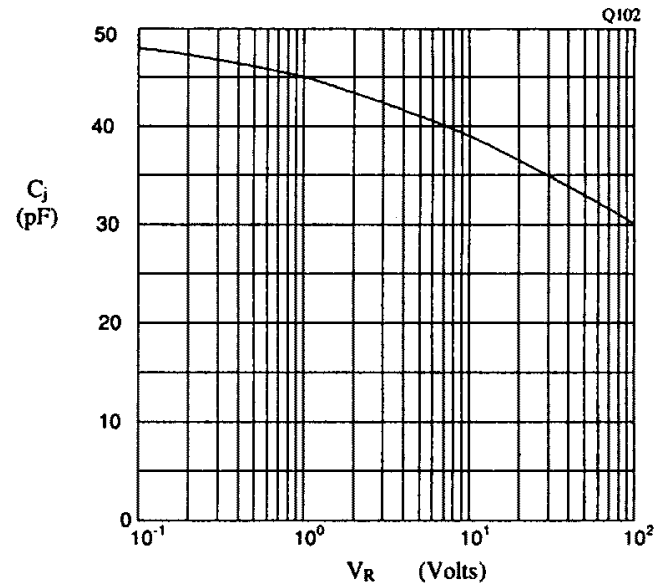


Fig 2. Typical junction capacitance as a function of reverse voltage.