

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

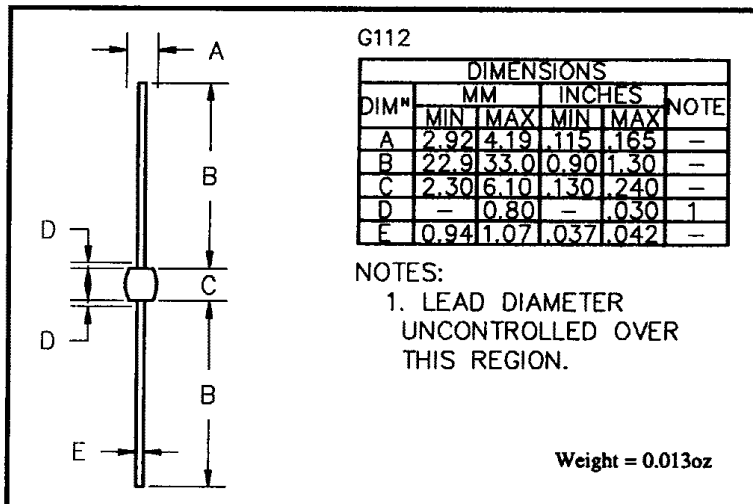
- Very low reverse recovery time
- Hermetical sealed in Metoxillite fused metal oxide
- Low switching losses
- Soft, non-snap off, recovery characteristics
- Very low forward voltage drop

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

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

	Symbol	1N5807	1N5809	1N5811	Unit
Working reverse voltage	VRWM	50	100	150	V
Repetitive reverse voltage	VRRM	50	100	150	V
Average forward current (@ 75°C, lead length = 0.375")	IF(AV)	←———— 6.0 —————→			A
Repetitive surge current (@ 55°C in free air, lead length 0.375")	IFRM	←———— 25 —————→			A
Non-repetitive surge current (tp = 8.3mS, @ VR & Tjmax)	IFSM	←———— 125 —————→			A
Storage temperature range	TSTG	←———— -65 to +200 —————→			°C
Operating temperature range	TOP	←———— -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 <sub>A</sub> = 55°C) for sine wave	I <sub>F(AV)</sub>	← 1.7 →	← 1.7 →	← 1.7 →	A
	I <sub>F(AV)</sub>	← 1.8 →	← 1.8 →	← 1.8 →	A
Average forward current max. (T <sub>L</sub> = 55°C; L = 3/8") for sine wave	I <sub>F(AV)</sub>	← 5.7 →	← 5.7 →	← 5.7 →	A
	I <sub>F(AV)</sub>	← 6.0 →	← 6.0 →	← 6.0 →	A
I <sup>2</sup> t for fusing (t = 8.3mS) max.	I <sup>2</sup> t	← 32 →	← 32 →	← 32 →	A <sup>2</sup> S
Forward voltage drop max. @ I <sub>F</sub> = 4.0A, T <sub>j</sub> = 25°C	V <sub>F</sub>	← 0.875 →	← 0.875 →	← 0.875 →	V
Reverse current max. @ V <sub>RWM</sub> , T <sub>j</sub> = 25°C	I <sub>R</sub>	← 5.0 →	← 5.0 →	← 5.0 →	μA
	I <sub>R</sub>	← 150 →	← 150 →	← 150 →	μA
Reverse recovery time max. 1.0A I <sub>F</sub> to 1.0A I <sub>R</sub> . Recovers to 0.1A I <sub>RR</sub> .	t <sub>rr</sub>	← 30 →	← 30 →	← 30 →	nS
Junction capacitance typ. @ V <sub>R</sub> = 5V, f = 1MHz	C <sub>j</sub>	← 60 →	← 60 →	← 60 →	ρF

**THERMAL CHARACTERISTICS**

	Symbol	1N5807	1N5809	1N5811	Unit
Thermal resistance - junction to lead Lead length = 0.75"	R <sub>θJL</sub>	← 35.5 →	← 35.5 →	← 35.5 →	°C/W
Thermal resistance - junction to amb. on 0.06" thick pcb. 1 oz. copper.	R <sub>θJA</sub>	← 90 →	← 90 →	← 90 →	°C/W

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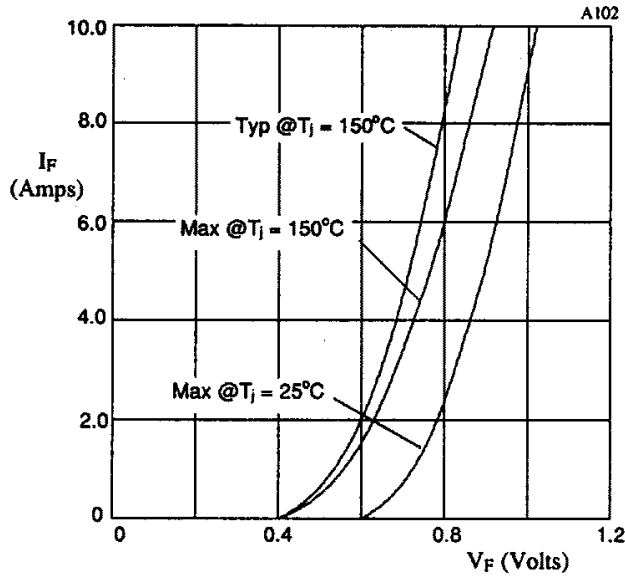


Fig 1. Forward voltage drop as a function of forward current.

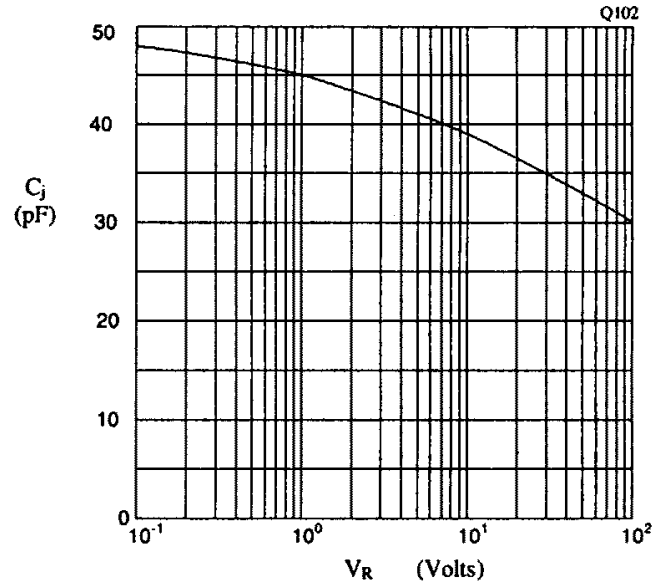


Fig 2. Typical junction capacitance as a function of reverse voltage.