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

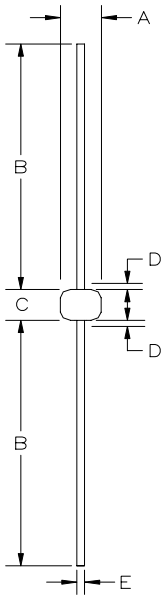
QUICK REFERENCE DATA

- V_R = 50 - 150V
- I_F = 6.0A
- t_{rr} = 30nS
- I_R = 5µA

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



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Dimensions					
DIM[N]	Millimeters		Inches		Note
	MIN	MAX	MIN	MAX	
A	2.92	3.61	.115	0.142	-
B	22.9	33.0	0.90	1.30	-
C	3.3	7.62	.130	0.3	-
D	-	0.80	-	.030	1
E	0.91	1.07	0.036	.042	-

Note:
(1) Lead diameter uncontrolled over this region.

Weight = 0.013oz

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

ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

	Symbol	1N5807	1N5809	1N5811	Unit
Average forward current max. (pcb mounted; T_A = 55°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°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 = 8.3mS) max.	I^2t	←	32	→	A^2S
Forward voltage drop max. @ I_F = 4.0A, T_j = 25°C	V_F	←	0.875	→	V
Reverse current max.					
@ V_{RWM}, T_j = 25°C	I_R	←	5.0	→	µA
@ V_{RWM}, T_j = 100°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 = 5V , f = 1MHz	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

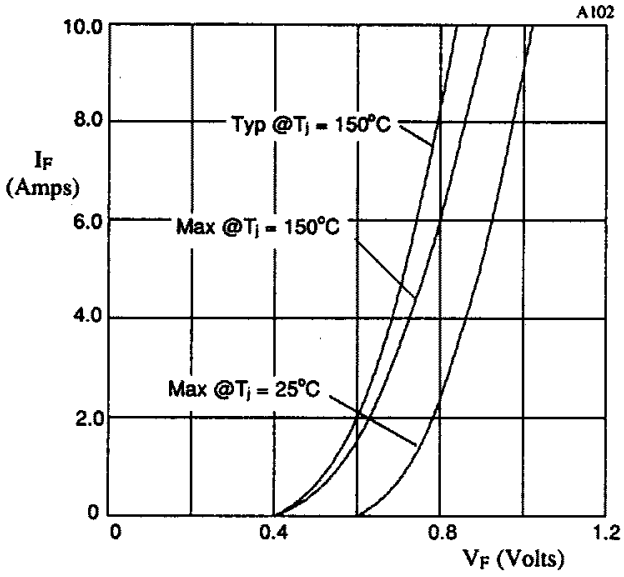

Fig 1. Forward voltage drop as a function of forward current.

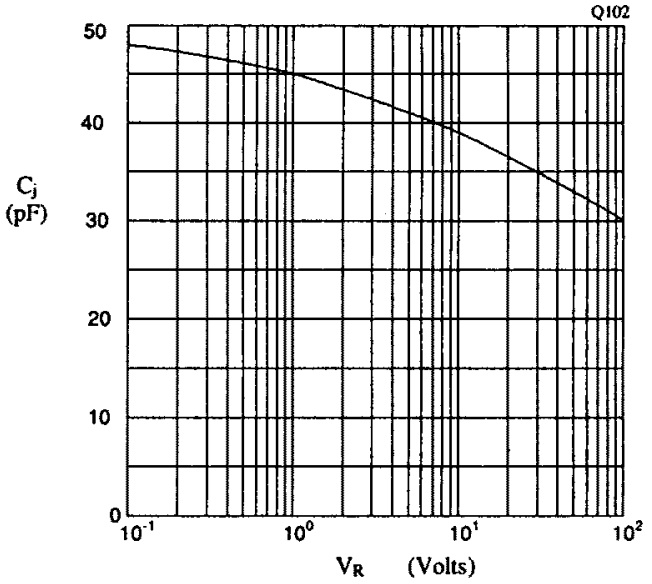

Fig 2. Typical junction capacitance as a function of reverse voltage.