



April 20, 2000

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

SURFACE MOUNT HERMETICALLY SEALED ULTRAFAST RECTIFIER DIODE

- Extremely low reverse recovery time
- Hermetically sealed to ensure reliable operation under most severe environmental and electrical stress
- Very low switching losses
- Soft, non-snap off, recovery characteristics
- Very low forward voltage drop

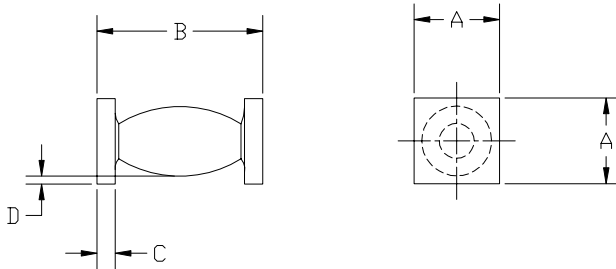
QUICK REFERENCE DATA

- $V_R = 50 - 150V$
- $I_F = 2.5A$
- $t_{rr} = 25ns$
- $I_R = 1\mu A$

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

PARAMETER	SYMBOL	1N5802	1N5804	1N5806	UNITS
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")	$I_{F(AV)}$	2.5			A
Repetitive surge current (@ 55°C, in free air, lead length 0")	I_{FRM}	14			A
Non-repetitive surge current ($t_p = 8.3ms$, @ V_R & T_{jmax})	I_{FSM}	35			A
Operating temperature range	T_{OP}	-65 to +175			°C
Storage temperature range	T_{STG}	-65 to +200			°C

MECHANICAL OUTLINE



DIMENSIONS					
DIM	MM		INCHES		NOTES
	MIN	MAX	MIN	MAX	
A	2.31	2.62	0.091	0.103	
B	4.27	5.08	0.168	0.200	
C	0.48	0.71	0.019	0.028	
D	0.8	0.91	0.003	0.91	DIM PRE-SOLDER

These products are qualified to MIL-S-19500/477 and are preferred parts as listed in MIL-STD-701.

They are available as JANTX, and JANTXV versions.



April 20, 2000

ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	1N5802	1N5804	1N5806	UNITS
Maximum Average Forward Current	$I_{F(AV)}$	PCB mounted; $T_A = 55^\circ\text{C}$ for sine wave for square wave ($d = 0.5$)		1.3 1.4		A
Maximum Average Forward Current	$I_{F(AV)}$	$T_L = 55^\circ\text{C}$; $L = 0"$ for sine wave for square wave		3.1 3.3		A
Maximum I^2t for Fusing	I^2t	$t = 8.3\text{mS}$, sine wave		10.0		A^2S
Maximum Forward Voltage Drop	V_F	$I_F = 1.0\text{A}$, $T_j = 25^\circ\text{C}$		0.875		V
Maximum Reverse Current	I_R	V_{RWM} , $T_j = 25^\circ\text{C}$		1.0		μA
		V_{RWM} , $T_j = 100^\circ\text{C}$		50		μA
Maximum Reverse Recovery Time	t_{rr}	$I_F = 1.0\text{A}$ to $I_{RRM} = 1.0\text{A}$ Recovers to $I_{RR} = 0.1\text{A}$		25		nS
Maximum Junction Capacitance	C_j	$V_R = -5\text{V}$, $f = 1\text{MHz}$		25		pF

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	CONDITIONS	1N5802	1N5804	1N5806	UNITS
Maximum Thermal Resistance Junction to Tab	$R_{\theta jt}$			20		$^\circ\text{C/W}$



April 20, 2000

ELECTRICAL CHARACTERISTICS CURVES

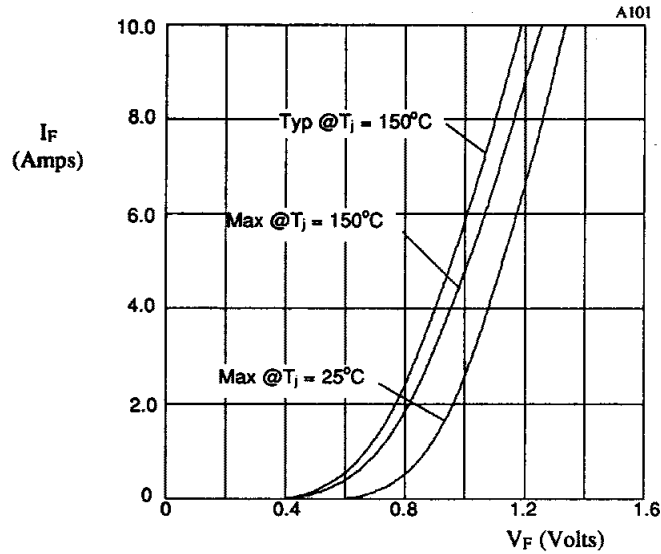


Fig 1. Forward voltage drop as a function of forward current.

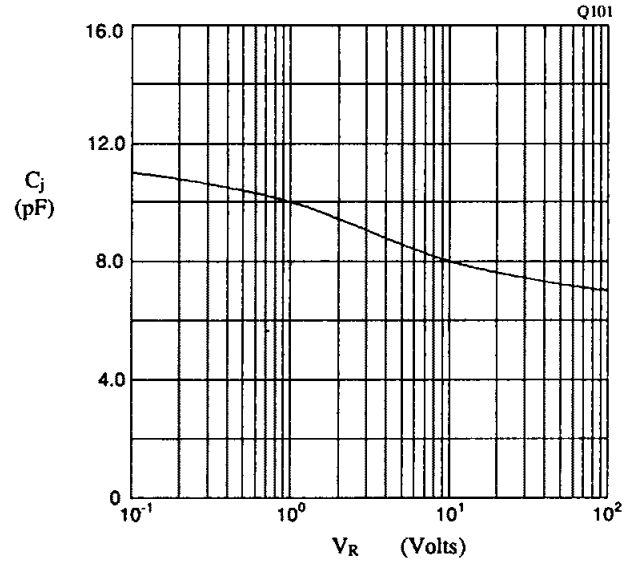


Fig 2. Typical junction capacitance as a function of reverse voltage.

ECN00-1046