



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638
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 ssdi@ssdi-power.com * www.ssdi-power.com

Designer's Data Sheet

Part Number/Ordering Information ^{1/}

1N802

— — —
 L Screening ^{2/}
 — = Not Screened
 TX = TX Level
 TXV = TXV Level
 S = S Level

Package Type

— = Axial Leaded
 SMS = Surface Mount Square Tab

Device Type (VRWM)

1 = 100 V
 2 = 150 V
 3 = 200 V

1N8021 thru 1N8023 SERIES

1 AMP
100 – 200 VOLTS
5 nsec
HYPER FAST
RECOVERY RECTIFIER

FEATURES:

- Hyper fast reverse recovery time: 5 ns Max
- Low forward voltage drop
- Low reverse leakage current
- Avalanche breakdown
- Void free ceramic frit glass construction
- High temperature category I eutectic metallurgical bond
- Hermetically sealed
- Solid silver leads
- Excellent liquid-to-liquid cryogenic thermal shock performance
- Available in axial & square tab versions
- For high efficiency applications
- TX, TXV, and S-Level screening available ^{2/}
- Available as a QPL product per MIL-PRF-19500/770
- Replacement for 1N6638, 1N6642 and 1N5806

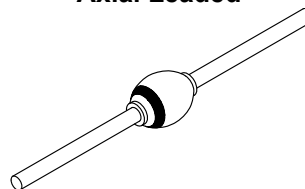
MAXIMUM RATINGS ^{3/}

RATING		SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage DC Blocking Voltage	1N8021 1N8022 1N8023	V_{RWM} V_R	100 150 200	Volts
Average Rectified Forward Current (Resistive load, 60 Hz, sine wave, $T_C = 25^\circ\text{C}$)		I_O	1	Amp
Peak Surge Current (8.3 msec pulse, half sine wave superimposed on I_O , allow junction to reach equilibrium between pulses, $T_C = 25^\circ\text{C}$)		I_{FSM}	20	Amps
Operating & Storage Temperature		T_{OP} and T_{STG}	-65 to +175	$^\circ\text{C}$
Thermal Resistance SMS- Junction to End Tab Axial- Junction to Lead @ .375"		$R_{\theta JE}$ $R_{\theta JL}$	20 80	$^\circ\text{C/W}$

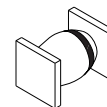
NOTES:

- ^{1/} For ordering information, price, and availability - contact factory.
^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.
^{3/} Unless otherwise specified, all electrical characteristics @25°C.

Axial Leaded



SMS



NOTE: All specifications are subject to change without notification.
 SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: RC0160C

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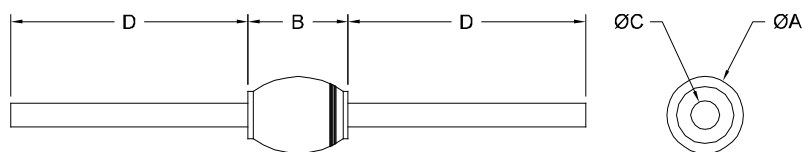
1N8021 thru 1N8023 SERIES

ELECTRICAL CHARACTERISTICS ^{3/}

CHARACTERISTICS		SYMBOL	LIMIT	UNIT
Maximum Instantaneous Forward Voltage Drop (Pulsed, $T_A = 25^\circ\text{C}$)	@ $I_F = 1\text{mA}$	V_{F1}	0.525	Vdc
	@ $I_F = 10\text{mA}$	V_{F2}	0.650	
	@ $I_F = 100\text{mA}$	V_{F3}	0.800	
	@ $I_F = 200\text{mA}$	V_{F4}	0.850	
	@ $I_F = 500\text{mA}$	V_{F5}	0.910	
	@ $I_F = 1\text{A}$	V_{F6}	0.980	
Maximum Instantaneous Forward Voltage Drop (Pulsed, $T_A = 150^\circ\text{C}$)	@ $I_F = 10\text{mA}$	V_{F7}	0.500	Vdc
	@ $I_F = 100\text{mA}$	V_{F8}	0.620	
Maximum Instantaneous Forward Voltage Drop (Pulsed, $T_A = -55^\circ\text{C}$)	@ $I_F = 10\text{mA}$	V_{F9}	0.810	Vdc
	@ $I_F = 100\text{mA}$	V_{F10}	0.900	
Minimum Breakdown Voltage $I_R = 100\text{ }\mu\text{A}$	1N8021	BV_R	110	Vdc
	1N8022		165	
	1N8023		220	
Maximum Reverse Leakage Current (300 μs Pulse Minimum, $T_A = 25^\circ\text{C}$)	@ $V_R = 20\text{V}$	I_{R1}	80	nA
	@ $V_R = 75\text{V}$	I_{R2}	120	
	@ $V_R = \text{max rated}$	I_{R3}	750	
Maximum Reverse Leakage Current (300 μs Pulse Minimum, $T_A = 125^\circ\text{C}$)	@ $V_R = 20\text{V}$	I_{R4}	50	μA
	@ $V_R = 75\text{V}$	I_{R5}	75	
	@ $V_R = \text{max rated}$	I_{R6}	150	
Maximum Junction Capacitance ($T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$) $V_R = 0\text{V}$		C_{J1}	6	pf
Maximum Junction Capacitance ($T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$) $V_R = 1.5\text{V}$		C_{J2}	5	pf
Maximum Junction Capacitance ($T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$) $V_R = 10\text{V}$		C_{J3}	4	pf
Maximum Reverse Recovery Time ($I_F = 50\text{ mA}$, $I_R = 100\text{ mA}$, $I_{RR} = 25\text{ mA}$)		t_{rr}	5	nsec
Maximum Forward Recovery Time ($I_F = 50\text{ mA}$)		t_{fr}	20	nsec

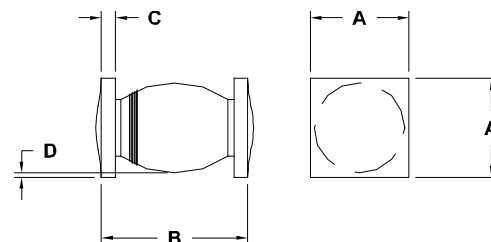
AXIAL

DIM	MIN	MAX
A	.056"	.075"
B	.125"	.140"
C	.018"	.022"
D	1.00"	1.50"



SMS

DIM	MIN	MAX
A	.070"	.085"
B	.168"	.200"
C	.019"	.028"
D	.001"	--



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