Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, CA 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

1N8021 thru 1N8023 SERIES

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

Designer's Data Sheet

Part Number/Ordering Information [1/]

1N802 __ __ __

- **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

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°C)		I_O	1	Amp
Peak Surge Current (8.3 msec pulse, half sine wave superimposed on Io, allow junction to reach equilibrium between pulses, T_C = 25°C)		I_{FSM}	20	Amps
Operating & Storage Temperature		T_{OP} **and** T_{STG}	-65 to +175	°C
Thermal Resistance SMS- Junction to End Tab Axial- Junction to Lead @ .375"		$R_{\theta JE}$ $R_{\theta JL}$	20 80	°C/W

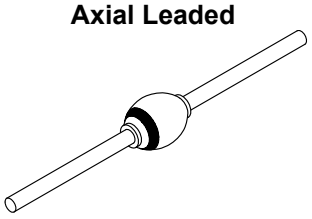
NOTES:

1/ For ordering information, price, and availability - contact factory.

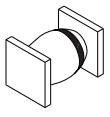
2/ Screening based on MIL-PRF-19500. Screening flows available on request.

3/ Unless otherwise specified, all electrical characteristics @25°C.

Axial Leaded



SMS



Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, CA 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

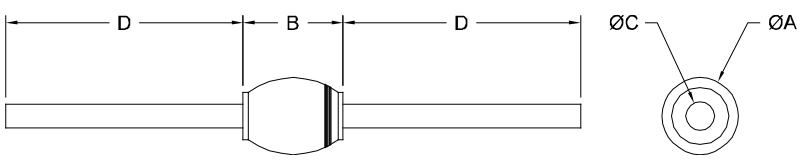
1N8021 thru 1N8023 SERIES

ELECTRICAL CHARACTERISTICS [3/]

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

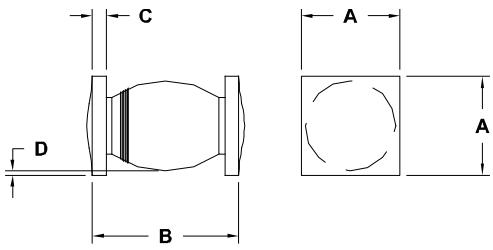
AXIAL

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”	--



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 | **DOC**