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

1N8018A thru 1N8020A
SERIES

2 AMP
100 – 200 VOLTS
20 nsec
HYPER FAST
SOFT RECOVERY RECTIFIER

Designer's Data Sheet

Part Number/Ordering Information 1/

1N80 __A __ __

Screening 2/
__ = Not Screened
TX = TX Level
TXV = TXV
S = S Level

Package Type
__ = Axial Leaded
SMS = Surface Mount Square Tab

Device Type (VRWM)
18 = 100 V
19 = 150 V
20 = 200 V

FEATURES:

- Hyper fast reverse recovery time 20 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 lead
- 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/
- Replacement for 1N6638, 1N6642 and 1N5806

MAXIMUM RATINGS 3/

RATING		SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage **DC Blocking Voltage**	1N8018 1N8019 1N8020	V_{RWM} V_R	100 150 200	Volts
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, T_C = 25°C)		I_O	2	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}	25	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

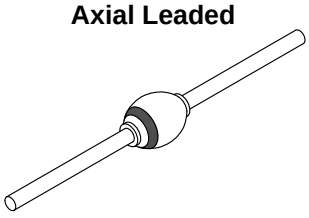
NOTES:

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

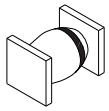
2/ Screening based on MIL-PRF-19500. Screening flows available on request.

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

Axial Leaded



SMS



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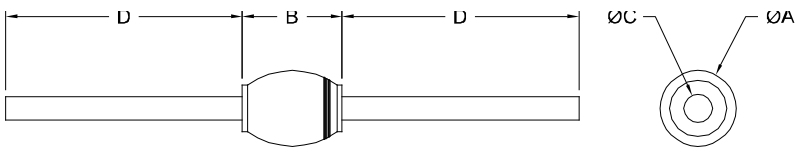
1N8018 thru 1N8020
SERIES

ELECTRICAL CHARACTERISTICS [3/]

CHARACTERISTICS		SYMBOL	LIMIT	UNIT
Maximum Instantaneous Forward Voltage Drop (Pulsed, T_A = 25°C)	@ I_F = 1mA @ I_F = 10mA @ I_F = 100mA @ I_F = 200mA @ I_F = 500mA @ I_F = 1A @ I_F = 2A	V_{F1} V_{F2} V_{F3} V_{F4} V_{F5} V_{F6} V_{F7}	0.600 0.710 0.810 0.860 0.930 1.000 1.130	Vdc
Maximum Instantaneous Forward Voltage Drop (Pulsed, T_A = 150°C)	@ I_F = 10mA @ I_F = 100mA	V_{F8} V_{F9}	0.50 0.62	Vdc
Maximum Instantaneous Forward Voltage Drop (Pulsed, T_A = -55°C)	@ I_F = 10mA @ I_F = 100mA	V_{F10} V_{F11}	0.835 0.940	Vdc
Minimum Breakdown Voltage I_R = 100 µA	1N8018 1N8019 1N8020	BV_R	110 160 210	Vdc
Maximum Reverse Leakage Current (300 µs Pulse Minimum , T_A = 25°C)	@ V_R = 20V @ V_R = 75V @ V_R = max rated	I_{R1} I_{R2} I_{R3}	30 40 50	nA
Maximum Reverse Leakage Current (300 µs Pulse Minimum , T_A = 150°C)	@ V_R = 20V @ V_R = 75V @ V_R = max rated	I_{R4} I_{R5} I_{R6}	5 7.5 12	µA
Maximum Junction Capacitance (T_A = 25°C , f = 1MHz) V_R = 1.5V		C_{J1}	20	pf
Maximum Junction Capacitance (T_A = 25°C , f = 1MHz) V_R = 10V		C_{J2}	12	pf
Maximum Reverse Recovery Time (I_F = 50 mA, I_R = 100 mA, I_{RR} = 25 mA)	1N8018 - 1N8019 1N8020	t_{rr}	15 20	nsec
Maximum Forward Recovery Time (I_F = 50 mA)	1N8018 - 1N8019 1N8020	t_{fr}	15 20	nsec

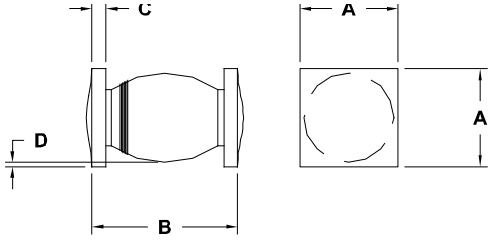
AXIAL

DIM	MIN	MAX
A	.065"	.085"
B	.125"	.140"
C	.017"	.020"
D	1.00"	1.50"



SMS

DIM	MIN	MAX
A	.090"	.100"
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 #: RC0158G	DOC