



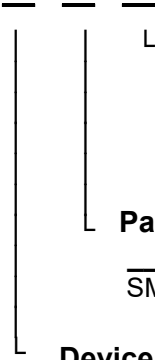
Solid State Devices, Inc.

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

Designer's Data Sheet

Part Number/Ordering Information ^{1/}

1N80



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

1N8018 thru 1N8020 SERIES

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

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/}
- Available as a QPL product per MIL-PRF-19500/769
- Replacement for 1N6638, 1N6642 and 1N5806

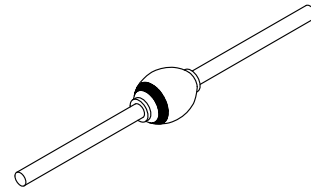
MAXIMUM RATINGS ^{3/}

RATING		SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage DC Blocking Voltage	1N8018	V_{RWM} V_R	100	Volts
	1N8019		150	
	1N8020		200	
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, $T_C = 25^\circ C$)		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, $T_C = 25^\circ C$)	1N8018 - 1N8019 1N8020	I_{FSM}	15 20	Amps
Operating & Storage Temperature		T_{OP} and T_{STG}	-65 to +175	$^\circ C$
Thermal Resistance SMS- Junction to End Tab Axial- Junction to Lead @ .375"		$R_{\theta JE}$ $R_{\theta JL}$	20 80	$^\circ C/W$

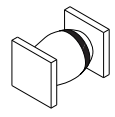
NOTES:

- 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 #: RC0158F

DOC



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ELECTRICAL CHARACTERISTICS ^{3/}

CHARACTERISTICS	SYMBOL	LIMIT	UNIT	
Maximum Instantaneous Forward Voltage Drop (Pulsed, T _A = 25°C)	@ I _F = 1mA	V _{F1}	0.600	Vdc
	@ I _F = 10mA	V _{F2}	0.710	
	@ I _F = 100mA	V _{F3}	0.810	
	@ I _F = 200mA	V _{F4}	0.860	
	@ I _F = 500mA	V _{F5}	0.930	
	@ I _F = 1A	V _{F6}	1.000	
Maximum Instantaneous Forward Voltage Drop (Pulsed, T _A = 150°C)	@ I _F = 10mA	V _{F7}	0.50	Vdc
	@ I _F = 100mA	V _{F8}	0.62	
Maximum Instantaneous Forward Voltage Drop (Pulsed, T _A = -55°C)	@ I _F = 10mA	V _{F9}	0.835	Vdc
	@ I _F = 100mA	V _{F10}	0.940	
Minimum Breakdown Voltage I _R = 100 μA	1N8018	BV_R	110	Vdc
	1N8019		160	
	1N8020		210	
Maximum Reverse Leakage Current (300 μs Pulse Minimum , T _A = 25°C)	@ V _R = 20V	I _{R1}	30	nA
	@ V _R = 75V	I _{R2}	40	
	@ V _R = max rated	I _{R3}	50	
Maximum Reverse Leakage Current (300 μs Pulse Minimum , T _A = 150°C)	@ V _R = 20V	I _{R4}	5	μA
	@ V _R = 75V	I _{R5}	7.5	
	@ V _R = max rated	I _{R6}	12	
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	t_{rr}	15	nsec
	1N8020		20	
Maximum Forward Recovery Time (I _F = 50 mA)	1N8018 - 1N8019	t_{fr}	15	nsec
	1N8020		20	

