

New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

1N5829, 1N5830 1N5831

Designers Data Sheet

HOT CARRIER POWER RECTIFIERS

... employing the Schottky Barrier principle in a large area metal-to-silicon power diode. State-of-the-art geometry features epitaxial construction with oxide passivation and metal overlap contact. Ideally suited for use as rectifiers in low-voltage, high-frequency inverters, free-wheeling diodes, and polarity-protection diodes.

- Extremely Low v_f
- Low Power Loss/High Efficiency
- Low Stored Charge, Majority Carrier Conduction
- High Surge Capacity
- TX Version Available

Designer's Data for "Worst Case" Conditions

The Designers Data sheets permit the design of most circuits entirely from the information presented. Limit curves — representing boundaries on device characteristics — are given to facilitate "worst case" design.

*MAXIMUM RATINGS

Rating	Symbol	1N 5829	1N 5830	1N 5831	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	30	40	Volts
Non-Repetitive Peak Reverse Voltage	V_{RSM}	24	36	48	Volts
Average Rectified Forward Current $V_{R(eq)} \leq 0.2 V_R$ (dc), $T_C = 85^\circ C$	I_O	25			Amp
Ambient Temperature Rated V_R (dc), $P_F(AV) = 0$, $R_{\theta JA} = 3.5^\circ C/W$	T_A	90	85	80	$^\circ C$
Non-Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase 60 Hz)	I_{FSM}	800 (for 1 cycle)			Amp
Operating and Storage Junction Temperature Range (Reverse voltage applied)	T_J, T_{stg}	-65 to +125			$^\circ C$
Peak Operating Junction Temperature (Forward Current Applied)	$T_{J(pk)}$	150			$^\circ C$

*THERMAL CHARACTERISTICS

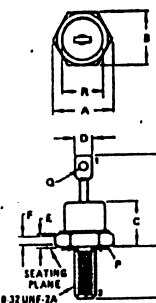
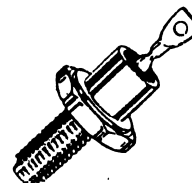
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.75	$^\circ C/W$

*ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ C$ unless otherwise noted)

Characteristic	Symbol	1N 5829	1N 5830	1N 5831	Unit
Maximum Instantaneous Forward Voltage (1) ($I_F = 10$ Amp) ($I_F = 25$ Amp) ($I_F = 78.5$ Amp)	v_f	0.360 0.440 0.720	0.370 0.460 0.770	0.380 0.480 0.820	Volts
Maximum Instantaneous Reverse Current @ Rated dc Voltage (1) ($T_C = 100^\circ C$)	I_R	20 150	20 150	20 150	mA

SCHOTTKY BARRIER RECTIFIERS

15 AMPERE
20,30,40 VOLTS



STYLE 2:
TERM 1, ANODE
2, CATHODE

DIM	MILLIMETERS	INCHES
A	11.20	0.441
B	10.70	0.421
C	10.20	0.402
D	9.70	0.382
E	9.20	0.362
F	8.70	0.343
G	8.20	0.323
H	7.70	0.303
I	7.20	0.283
J	6.70	0.264
K	6.20	0.244
L	5.70	0.225
M	5.20	0.205
N	4.70	0.185
O	4.20	0.165
P	3.70	0.146
Q	3.20	0.126
R	2.70	0.106
S	2.20	0.087
T	1.70	0.067
U	1.20	0.047
V	0.70	0.028

D0-4

All JEDEC dimensions and notes apply

MECHANICAL CHARACTERISTICS

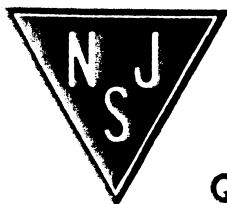
CASE: Welded, hermetically sealed

FINISH: All external surfaces corrosion resistant and terminal leads are readily solderable.

POLARITY: Cathode to Case

MOUNTING POSITION: Any

STUD TORQUE: 15 in. lb. max



Quality Semi-Conductors