

**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 $V_{R(equiv)} \leq 0.2 V_R$ (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			$^\circ C$

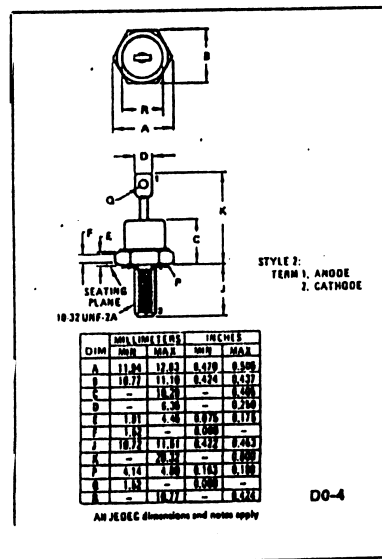
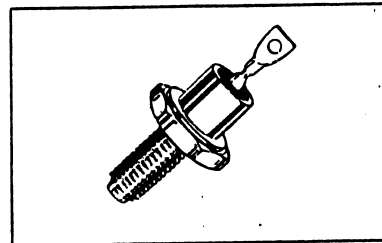
**\*THERMAL CHARACTERISTICS**

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



**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

