

SCHOTTKY BARRIER RECTIFIER

REVERSE VOLTAGE – 45 Volts
FORWARD CURRENT – 20 Amperes

FEATURES

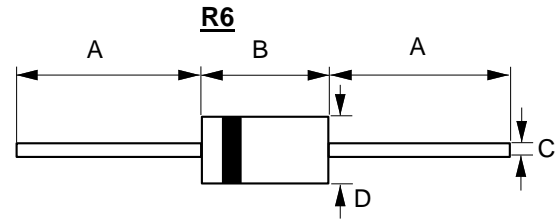
- Metal of silicon rectifier, majority carrier conduction
- Guard ring for transient protection
- Low power loss, high efficiency
- High surge & current capability, low VF
- IEC 61000-4-2(ESD), >±30KV(air), >±15KV(contact)
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**

APPLICATION

- For use in Solar Cell junction box as a bypass diode for protection, using DC forward current without reverse bias.

MECHANICAL DATA

- Package: JEDEC R-6 molded plastic
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Polarity: Color band denotes cathode
- Terminals: Finish - Bright Tin. Plated Leads Solderable per MIL-STD-202, Method 208 ③
- Weight: 0.07 ounces, 2.1grams (Approximate)
- Mounting position: Any
- Soldering condition : Temp 260°C±5 (Duration10±1s)



R6 ^①		
DIM ^②	MIN ^③	MAX ^④
A ^⑤	25.4 ^⑥	-- ^⑦
B ^⑤	8.60 ^⑥	9.10 ^⑥
C ^⑤	1.22Φ ^⑥	1.32Φ ^⑥
D ^⑤	8.60Φ ^⑥	9.10Φ ^⑥
All Dimensions in millimeter ^⑧		

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	20SQ045	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	45	V
Maximum DC blocking voltage	V_{DC}	45	V
Average rectified Output Current @ $T_c=100^\circ\text{C}$	I_F	20	A
Peak forward surge 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	275	A
Maximum Forward Voltage at 20A DC (Note 3) $T_J=25^\circ\text{C}$	V_F	0.55	V
Maximum DC Reverse Current at rated DC blocking voltage $T_J=25^\circ\text{C}$ $T_J=100^\circ\text{C}$	I_R	1.0 100	mA
Typical Junction Capacitance (Note 4)	C_J	1300	pF
Typical thermal resistance junction to Lead (Note 5)	$R_{\theta JL}$	2.0	°C/W
Typical thermal resistance junction to Case (Note 5)	$R_{\theta JC}$	7.0	°C/W
Typical thermal resistance junction to Ambient (Note 5)	$R_{\theta JA}$	40	°C/W
Operating junction temperature	T_J	150	°C
Junction temperature in DC forward current without reverse bias, $t \leq 1$ h (Note 6)	T_J	≤ 200	°C
Storage temperature range	T_{STG}	-55 to +150	°C

- Notes:**
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. 300us pulse width, 2% duty cycle
 4. Measured at 1.0MHz and reverse voltage of 4.0V DC.
 5. Thermal Resistance test performed in accordance with JESD-51.
 6. Meets the requirement of IEC 61215 ed. 2 bypass diode thermal test.

RATING AND CHARACTERISTIC CURVES

20SQ045

FIG.1- FORWARD CURRENT DERATING CURVE

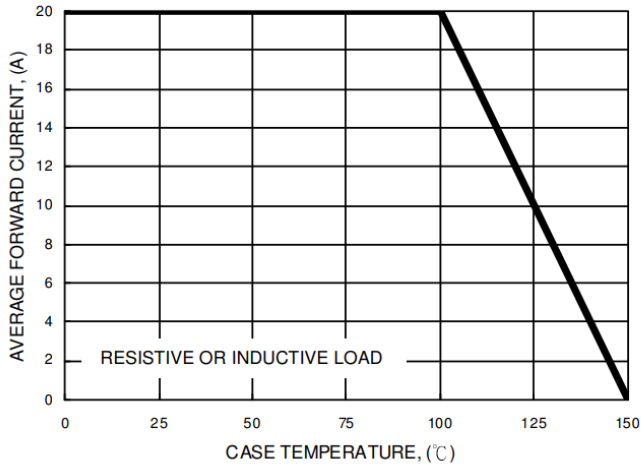


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

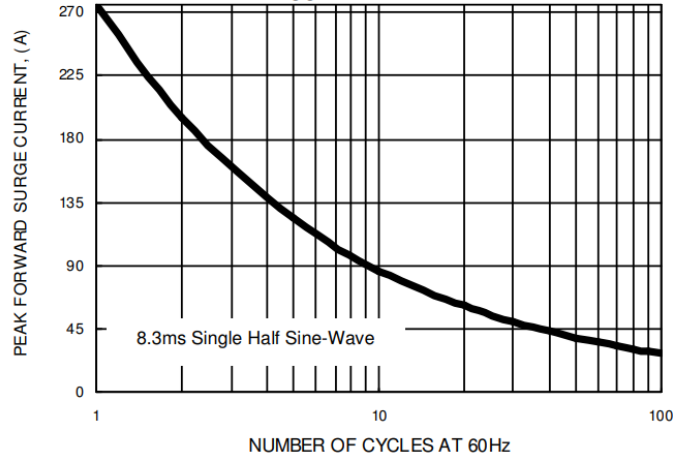


FIG.3- TYPICAL JUNCTION CAPACITANCE

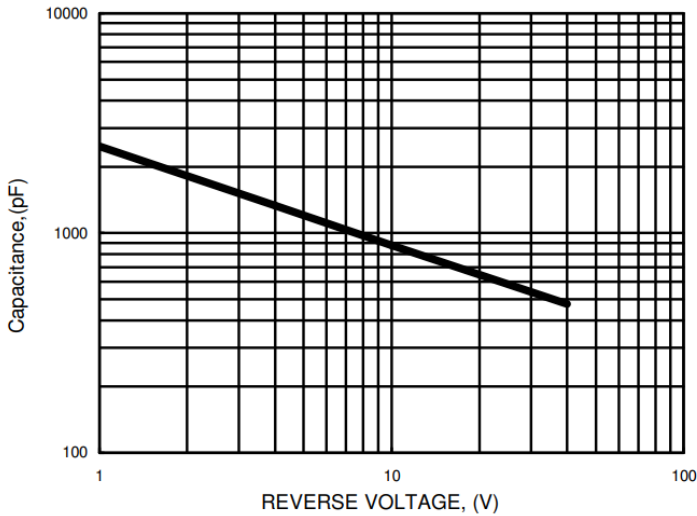


FIG.4- TYPICAL FORWARD CHARACTERISTICS

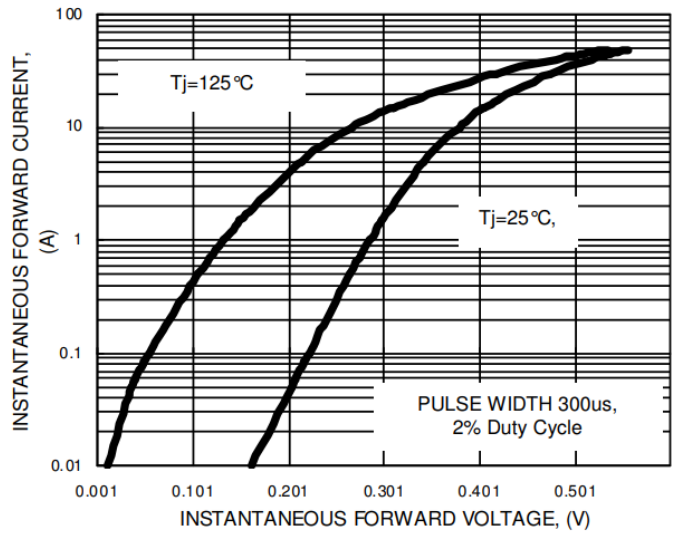
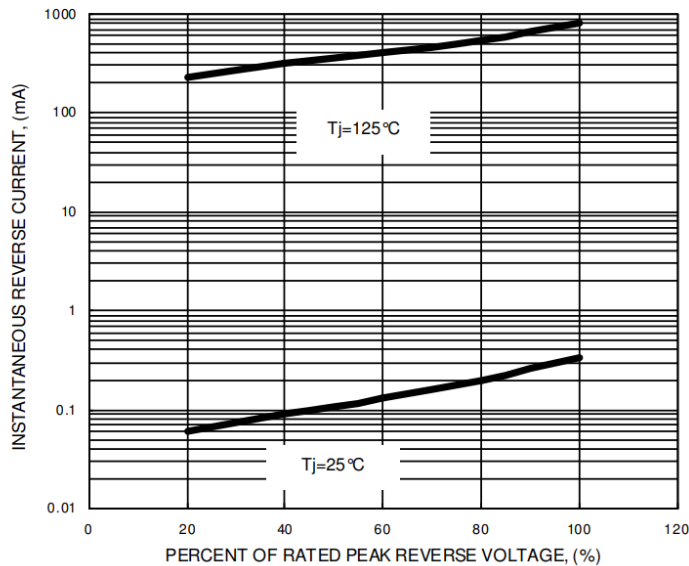


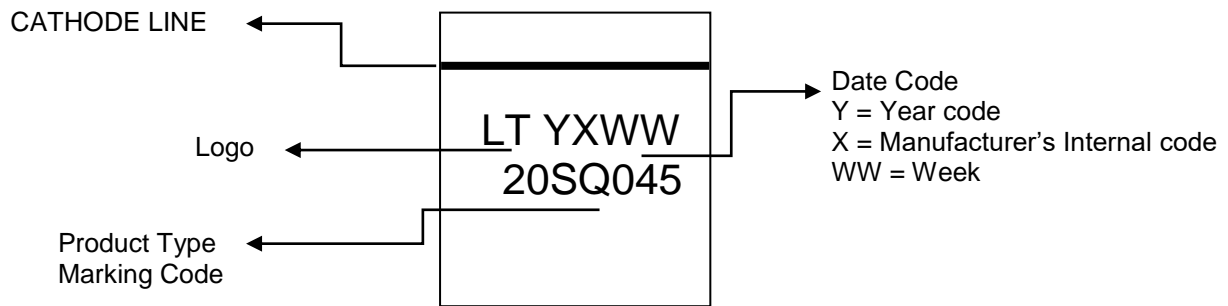
FIG.5- TYPICAL REVERSE CHARACTERISTICS



Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
20SQ045	R6	700	Tape & Reel

Marking Information:



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