LITE-ON SEMICONDUCTORS

20SQ040~20SQ045

SCHOTTKY BARRIER RECTIFIERS
For PV Solar Cell Bypass Protection

REVERSE VOLTAGE – **40 to 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)

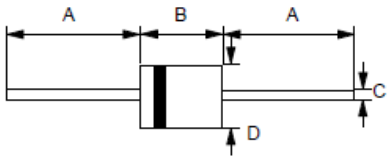
APPLICATION

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

MECHANICAL DATA

- Case: JEDEC R-6 molded plastic
- Polarity : Color band denotes cathode
- Weight : 0.07 ounces, 2.1grams
- Mounting position: Any
- Soldering condition : Temp 260℃±5 (Duration 10±1s)

R6



	R-6	
Dim.	Min.	Max.
A	25.4	-
B	8.60	9.10
C	1.22 ∅	1.32 ∅
D	8.60 ∅	9.10 ∅
All Dimensions in millimeter		

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

PARAMETER	SYMBOL	20SQ040	20SQ045	UNIT
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	40	45	V
Maximum DC Blocking Voltage	$V_{DC(AV)}$	40	45	V
Average Rectified Output Current @Tc=100℃	I_F	20		A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	275		A
Maximum Forward Voltage at 20A DC Note (1) Tj=25℃	V_F	0.55		V
Maximum DC Reverse Current at Rated DC Blocking Voltage Tj=25℃	IR	1.0		mA
Tj=100℃		100		
Typical thermal resistance Junction to Lead (Note 3)	$R_{\Theta JL}$	2.0		℃/W
Typical thermal resistance Junction to Case (Note 3)	$R_{\Theta JC}$	7.0		
Typical thermal resistance Junction to Ambient (Note 3)	$R_{\Theta JA}$	40		
Typical Thermal Resistance (Note 2)	C_J	1300		pF
Operating junction temperature	T_J	150		℃
Junction temperature in DC forward current without reverse bias, t ≦ 1 h	Tj (Note 4)	≦200		℃
Storage temperature range	T_{STG}	-55 to +150		℃

REV. 3, Jan-2014, KDHG03

Note :

(1) 300us Pulse Width, 2% Duty Cycle.
(2) Measured at 1.0MHz and applied reverse voltage of 4.0 V_{DC}.
(3) Thermal Resistance test performed in accordance with JESD-51.
(4) Meets the requirement of IEC 61215 ed. 2 bypass diode thermal test.

RATING AND CHARACTERISTIC CURVES
20SQ040~20SQ045

LITEON

FIG.1- FORWARD CURRENT DERATING CURVE

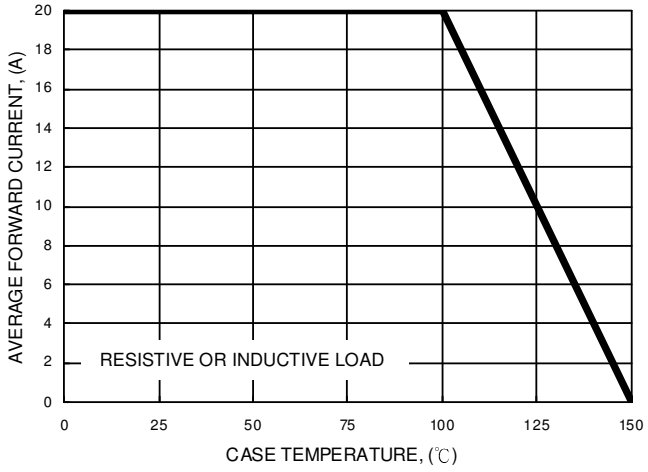


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

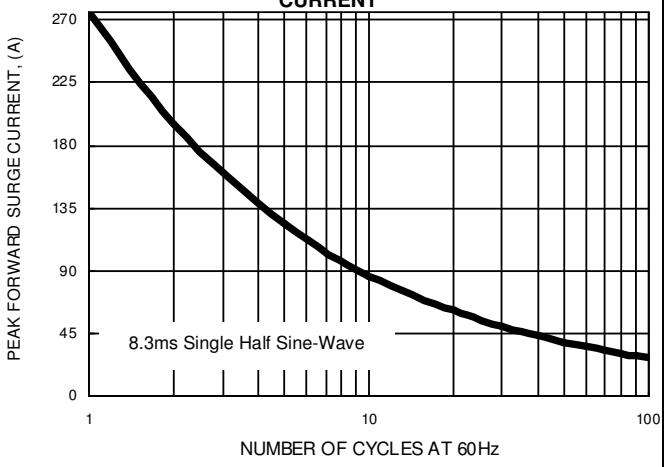


FIG.3- TYPICAL JUNCTION CAPACITANCE

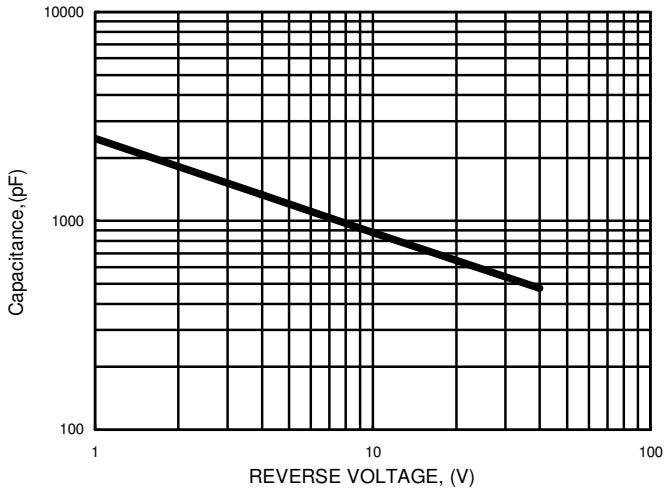


FIG.4- TYPICAL FORWARD CHARACTERISTICS

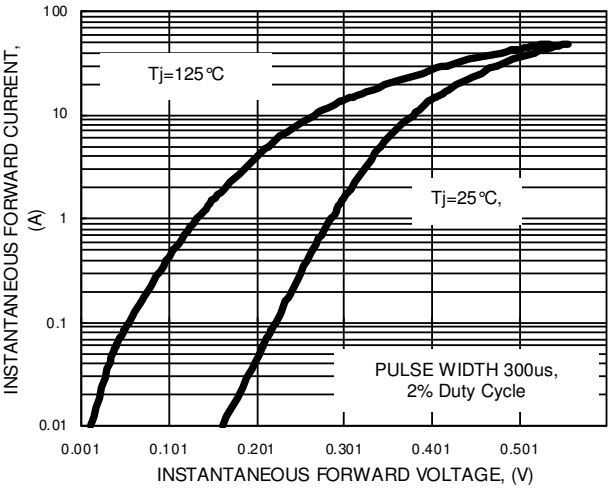
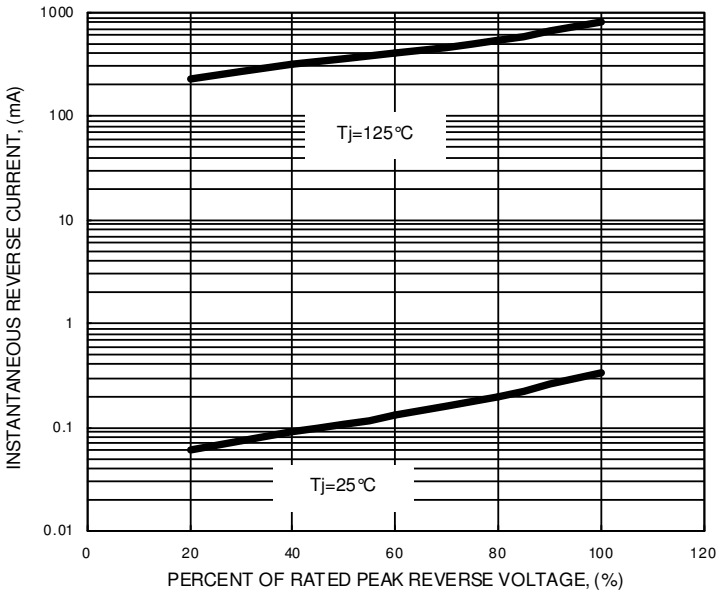


FIG.5- TYPICAL REVERSE CHARACTERISTICS



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