

## 20A, 45V Schottky Barrier Rectifier

### FEATURES

- AEC-Q101 qualified available
- Low forward voltage drop
- Low power loss, high efficiency
- Guard ring for overvoltage protection
- High surge current capability
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- DC to DC converter

### MECHANICAL DATA

- Case: R-6
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 1.60g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	20	A
$V_{RRM}$	45	V
$I_{FSM}$	275	A
$T_{JMAX}$	200	°C
Package	R-6	
Configuration	Single die	



**R-6**



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	SK20H45	UNIT
Marking code on the device		SK20H45	
Repetitive peak reverse voltage	$V_{RRM}$	45	V
Reverse voltage, total rms value	$V_{R(RMS)}$	31	V
Forward current	$I_F$	20	A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	275	A
Junction temperature in the DC forward mode	$T_J$	-55 to +200	°C
Storage temperature	$T_{STG}$	-55 to +175	°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	$R_{\theta JL}$	6	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage <sup>(1)</sup>	$I_F = 20\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	0.55	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	500	$\mu\text{A}$
	$T_J = 100^\circ\text{C}$		-	50	mA

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE<sup>(1)</sup></b>	<b>PACKAGE</b>	<b>PACKING</b>
SK20H45	R-6	1,000 / Tape & Reel
SK20H45 A0G	R-6	700 / Ammo box
SK20H45H	R-6	1,000 / Tape & Reel
SK20H45HA0G	R-6	700 / Ammo box

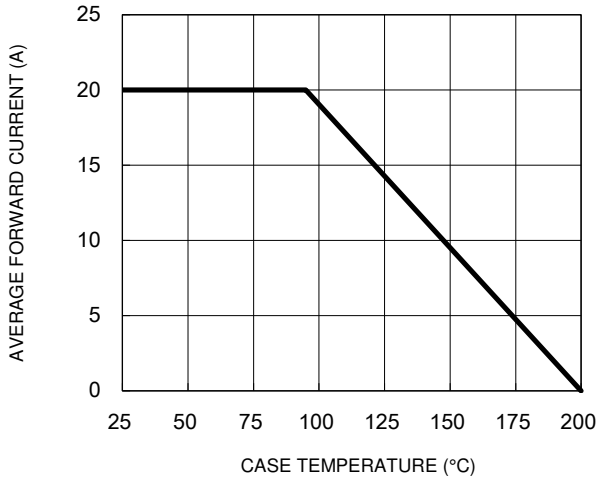
**Notes:**

1. "H" means AEC-Q101 qualified

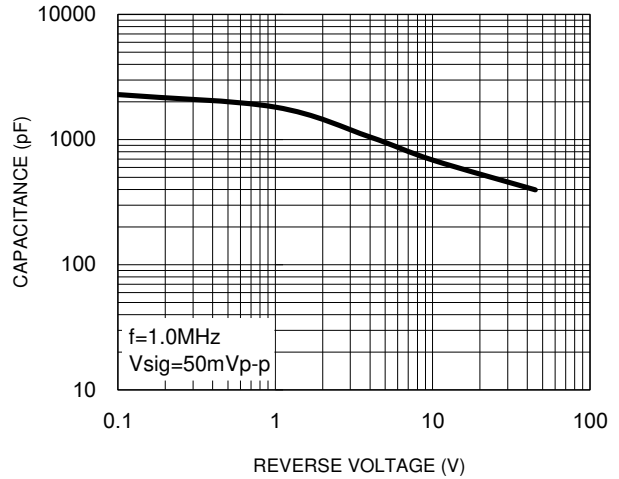
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

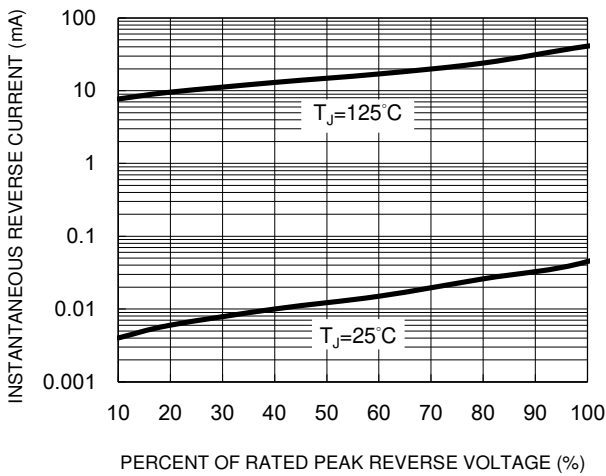
**Fig.1 Forward Current Derating Curve**



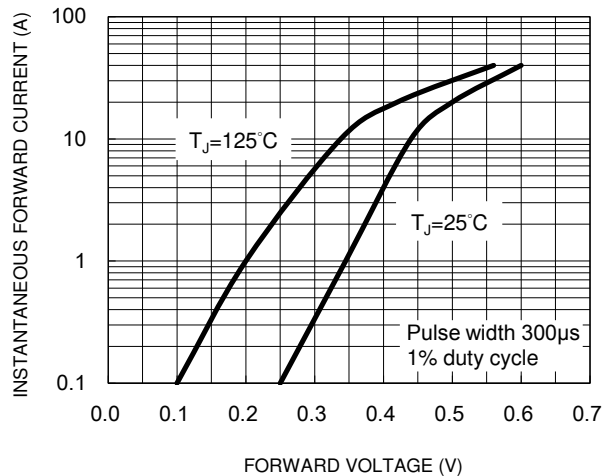
**Fig.2 Typical Junction Capacitance**



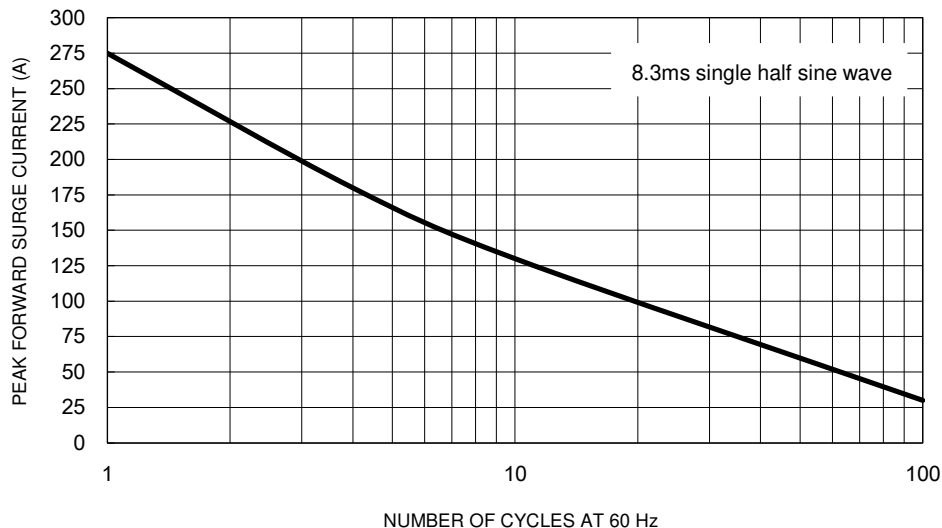
**Fig.3 Typical Reverse Characteristics**



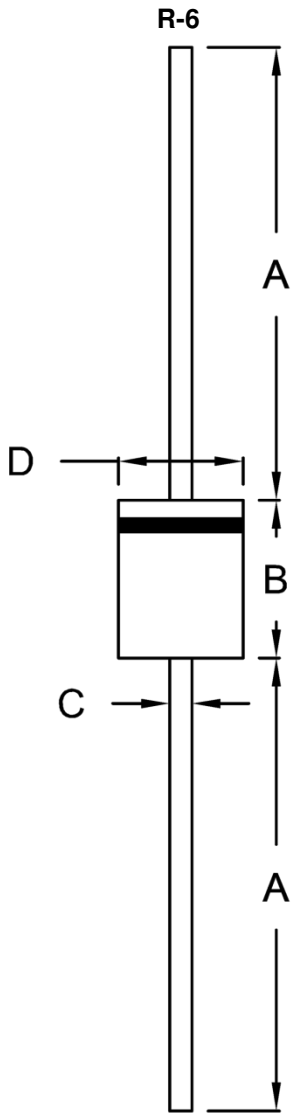
**Fig.4 Typical Forward Characteristics**



**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**PACKAGE OUTLINE DIMENSIONS**



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	8.60	9.10	0.339	0.358
C	1.20	1.30	0.047	0.051
D	6.80	7.20	0.268	0.283

**MARKING DIAGRAM**



- P/N = Marking Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code

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