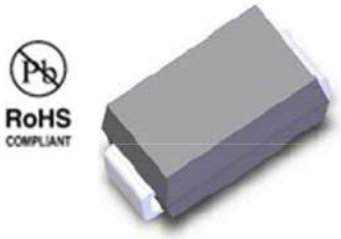
SK1B5

Surface Mount Schottky Rectifier

Reverse Voltage 150V Forward Current 1A

2018

Features



DO-214AC（SMA）

- Schottky barrier diodes
- Low forward voltage drop
- High Tunction Temperature
- Moisture sensitivity: level 1, per J-STD-020
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Add suffix "E" for Halogen Free
- Halogen-free according to IEC 61249-2-21 definition
- AEC-Q101 qualified

Typical Applications

For use in low voltage,high freqency inverters,free wheeling, and polarity protection application

Maximum Ratings (TA = 25 °C unless otherwise noted)

Parameter	Symbol	SK1B5 SK1B5E	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	150	V
Maximum RMS voltage	V_{RMS}	105	V
Maximum DC blocking voltage	V_{DC}	150	V
Maximum average forward rectified current	$I_{F(AV)}$	1.0	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30	A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150	°C

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Parameter	Test Conditions	Symbol	SK1B5 SK1B5E	Unit
Maximum instantaneous forward voltage	I_F=1A, T_A=25℃	V_F	0.85	V
Maximum DC reverse current at rated DC blocking voltage	T_A=25℃	I_R	30	uA
	T_A=125℃		1000	
Typical junction capacitance	4.0 V, 1 MHz	C_J	35	pF

Thermal Characteristics

Parameter	Symbol	SK1B5 SK1B5E	Unit
Typical thermal resistance(1)	$R_{\theta JA}$	85	℃/W
	$R_{\theta JC}$	46	
	$R_{\theta JI}$	25	

Note1:Thermal resistance from junction to lead,mounted on PCB with 5.0×5.0mm copper pads

Ratings and Characteristics Curves

(TA = 25℃ unless otherwise noted)

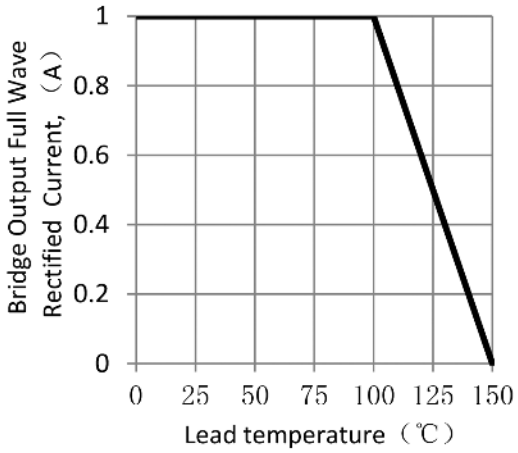


Figure 1.Forward Current Derating Curve

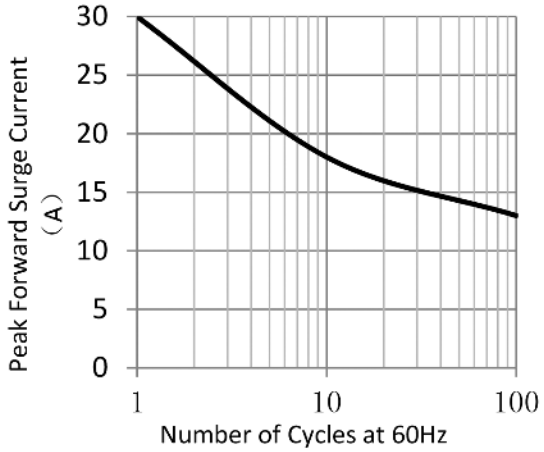


Figure 2.Maximum Non-Repetitive Peak Forward Surge Current

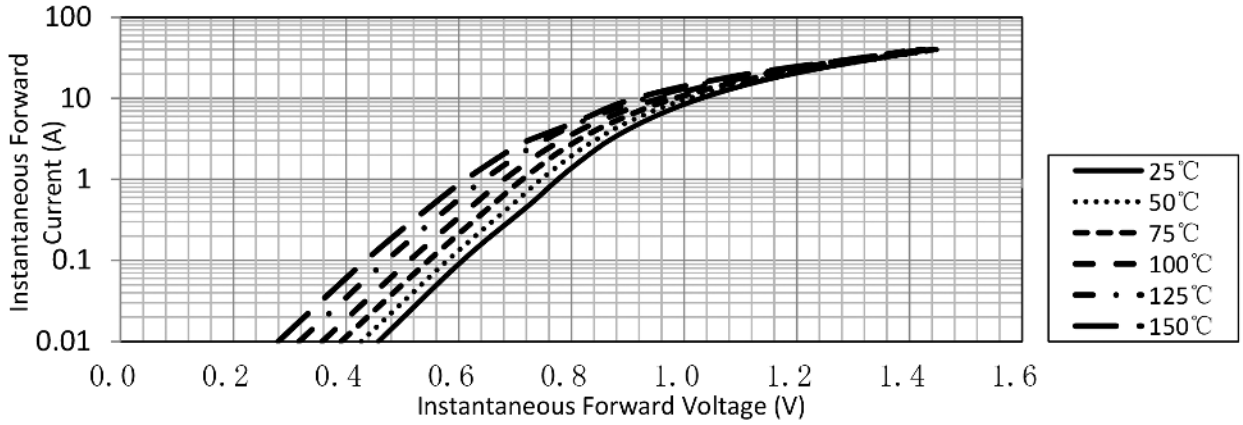


Figure 3. Typical Instantaneous Forward Characteristics

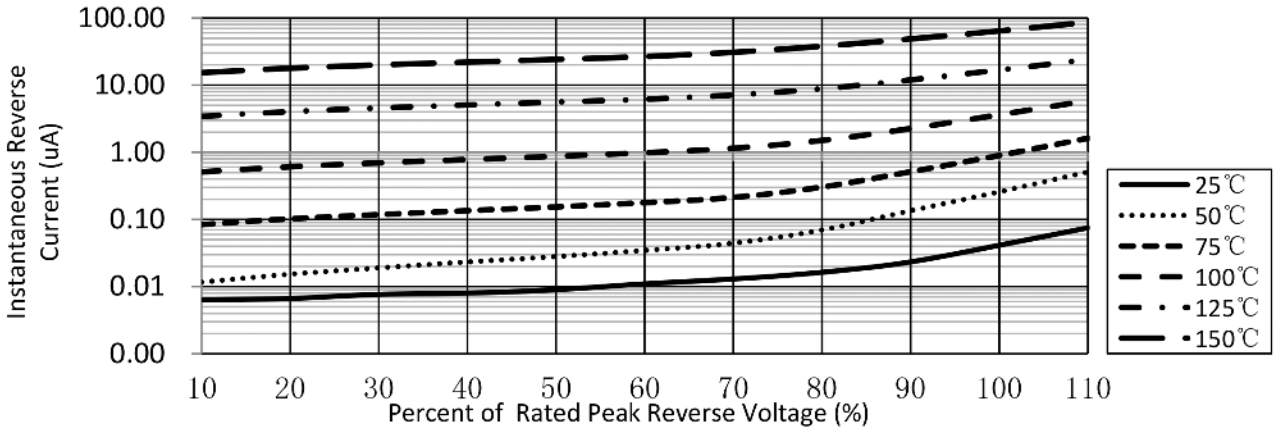


Figure 4. Typical Reverse Characteristics

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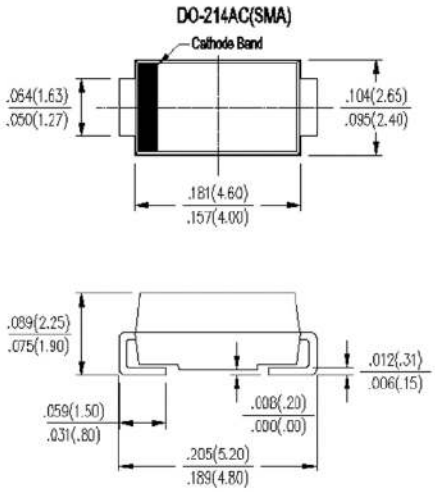
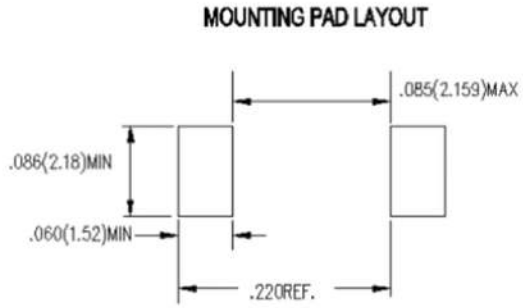
Package Outline Dimensions

in inches (millimeters)

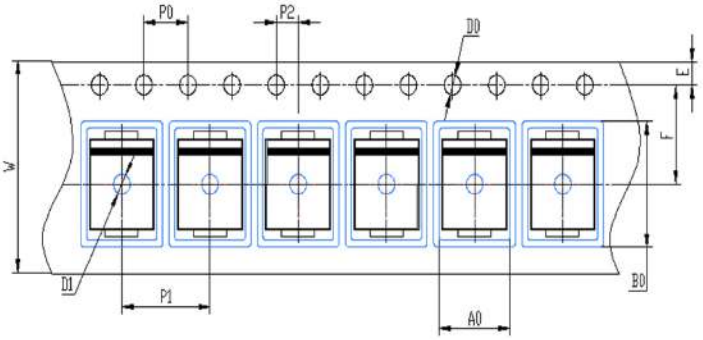


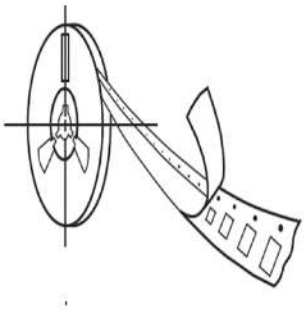


Packing Information

7500 pcs/Reel, 18 Reels/Box; 12mm Tape, 13" Reel

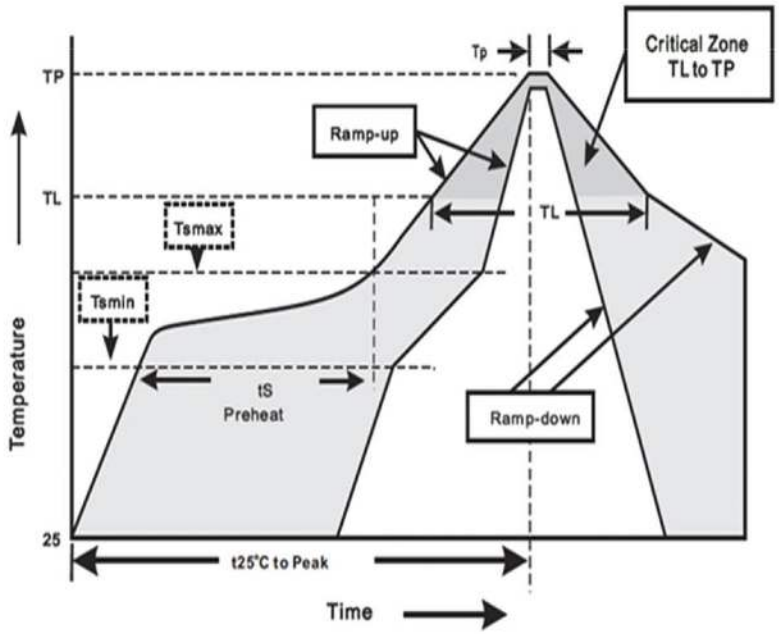
Tape & Reel Specification





Symbo	SMA (mm)
W	12±0.2
E	1.75±0.1
F	5.5±0.05
D0	1.5±0.1
D1	1.50 +0.1/-0
P0	4.0±0.1
P1	4.0±0.1
P2	2.0±0.05
A0	2.65±0.1
B0	5.25±0.1

Soldering Parameters



Reflow Soldering		Sn-Pb Eutectic Assembly	Pb-Free assembly
Pre Heat	- Temperature Min (Ts(min))	100°C	150°C
	- Temperature Max (Ts(max))	150°C	200°C
	- Time (min to max) (ts)	60 – 120 secs	60 – 180 secs
Average ramp up rate (Liquidus) Temp (TL) to peak		3°C/second max	3°C/second max
TS(max) to TL - Ramp-up Rate		3°C/second max	3°C/second max
Reflow	- Temperature (TL) (Liquidus)	183°C	217°C
	- Time (min to max) (ts)	60 – 150 seconds	60 – 150 seconds
Peak Temperature (TP)		240+0/-5 °C	240+0/-5°C
Time within 5°C of actual peak Temperature (tp)		10 –30 seconds	20 – 40 seconds
Ramp-down Rate		6°C/second max	6°C/second max
Time 25°C to peak Temperature (TP)		6 minutes Max.	8 minutes Max.
Do not exceed		260°C	260°C

Wave Soldering	
Peak Temperature :	260+0/-5°C
Dipping Time :	10 seconds
Soldering :	1 time