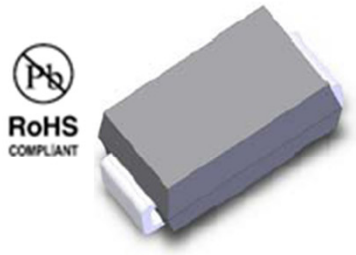
SK12 thru SK16

Surface Mount Schottky Rectifier

Reverse Voltage 20V to 60V Forward Current 1A

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	SK12 SK12E	SK13 SK13E	SK14 SK14E	SK15 SK15E	SK16 SK16E	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	V
Maximum RMS voltage	V_{RMS}	14	21	28	35	42	V
Maximum DC blocking voltage	V_{DC}	20	30	40	50	60	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	SK12 SK12E	SK13 SK13E	SK14 SK14E	SK15 SK15E	SK16 SK16E	Unit
Maximum instantaneous forward voltage	I_F=1A, T_A=25℃	V_F	0.50			0.70		V
Maximum DC reverse current at rated DC blocking voltage	T_A=25℃	I_R	0.2			0.15		mA
	T_A=125℃		10.0					
Typical junction capacitance	4.0 V, 1 MHz	C_J	110					pF

Thermal Characteristics

Parameter	Symbol	SK12 SK12E	SK13 SK13E	SK14 SK14E	SK15 SK15E	SK16 SK16E	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)

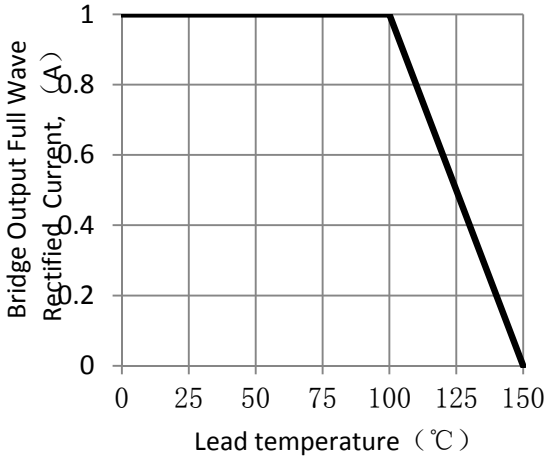


Figure 1.Forward Current Derating Curve

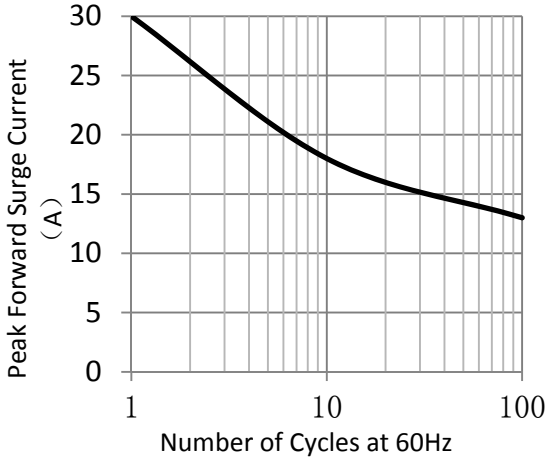


Figure 2.Maximum Non-Repetitive Peak Forward Surge Current

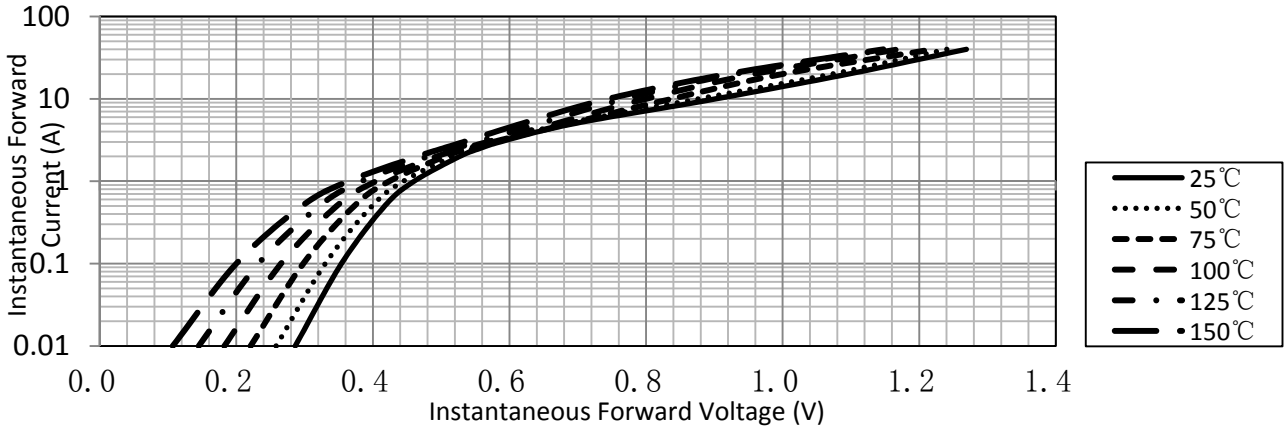


Figure 3. Typical Instantaneous Forward Characteristics
(SK12 thru SK14)

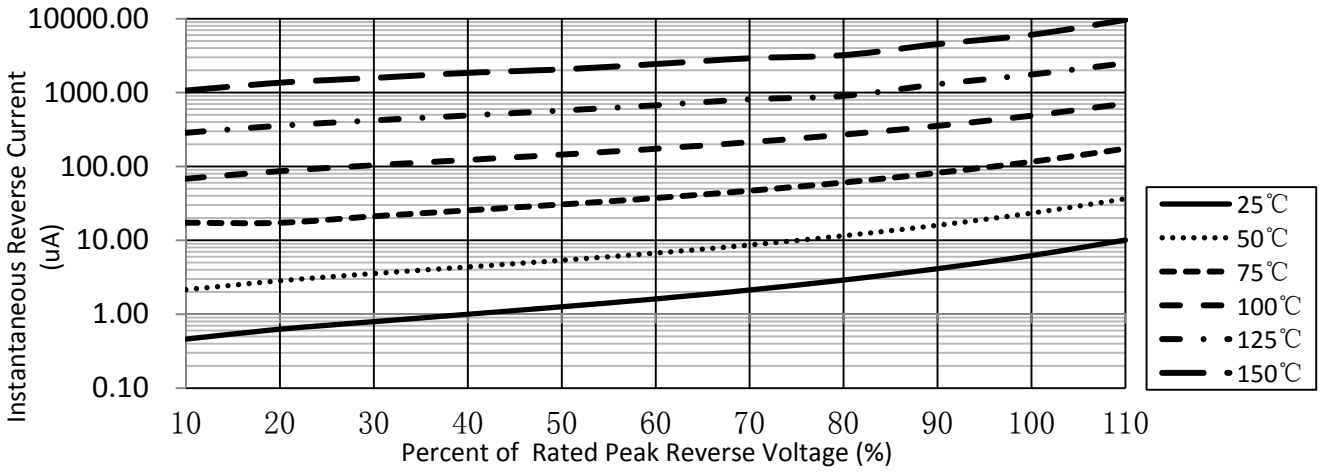


Figure 4. Typical Reverse Characteristics
(SK12 thru SK14)

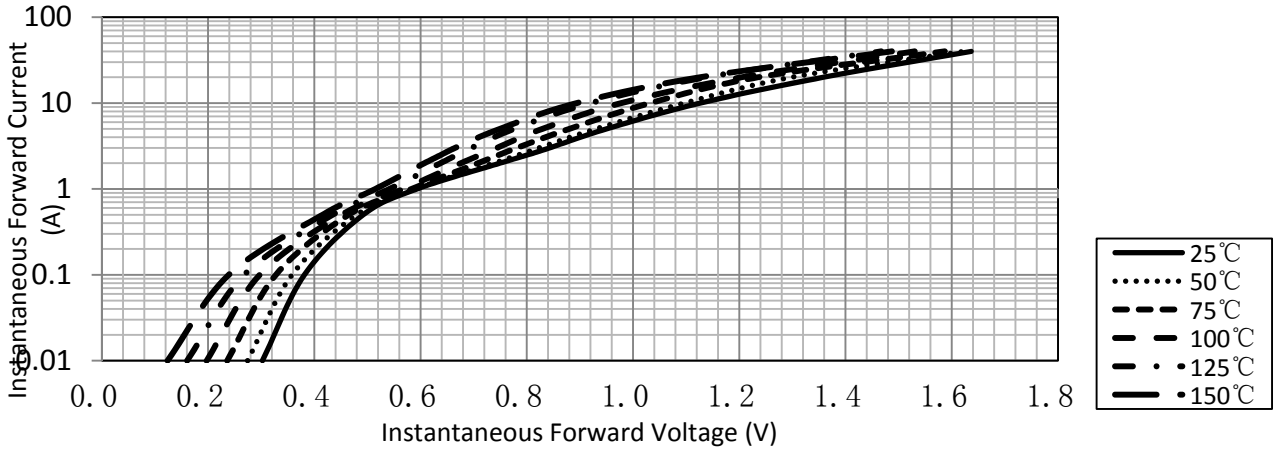


Figure 5. Typical Instantaneous Forward Characteristics
(SK15 thru SK16)

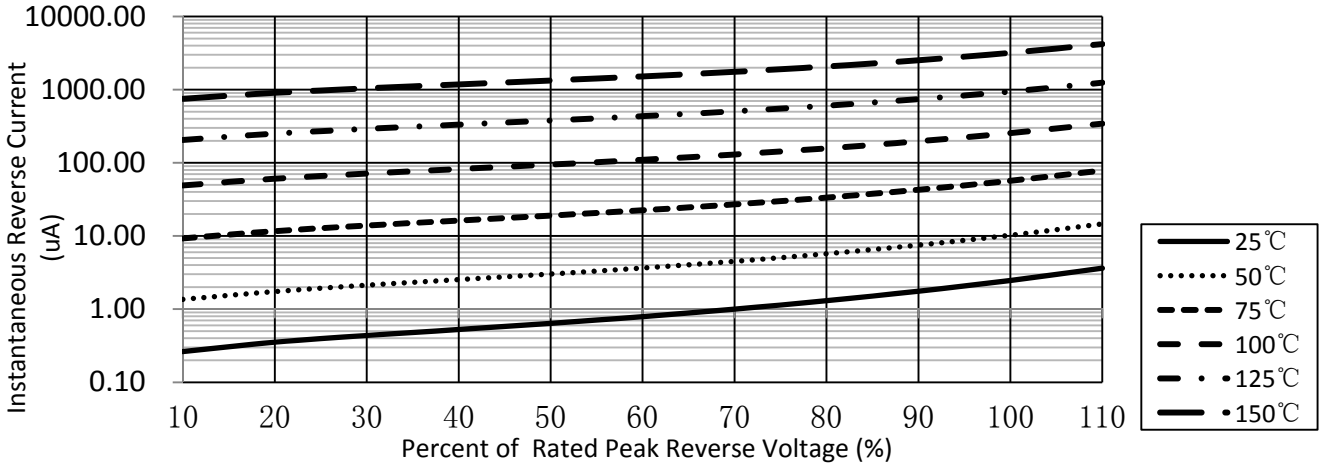
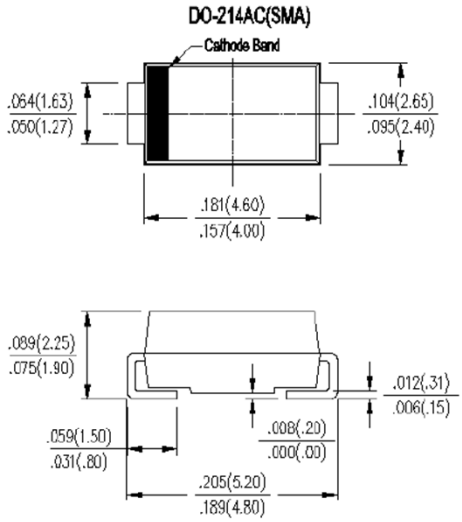
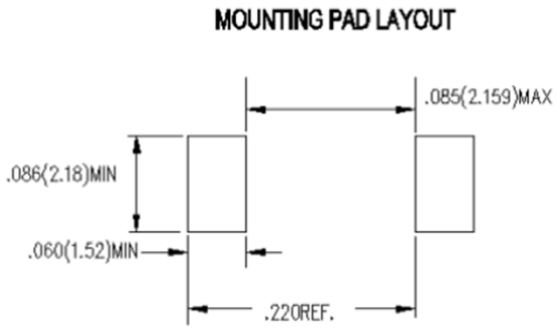


Figure 6. Typical Reverse Characteristics
(SK15 thru SK16)

Package Outline Dimensions

in inches (millimeters)

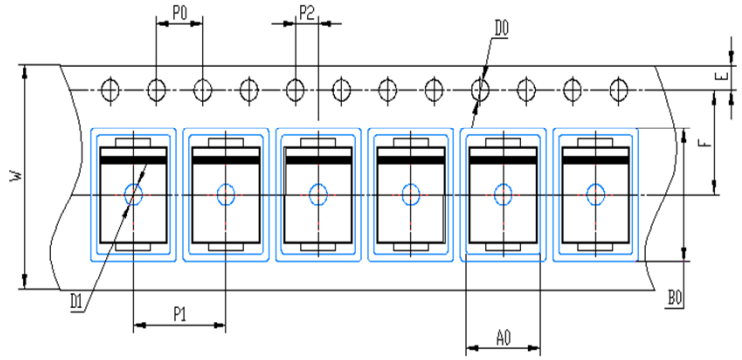


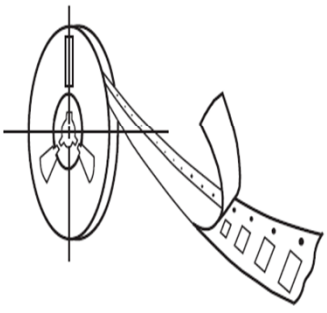


Packing Information

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

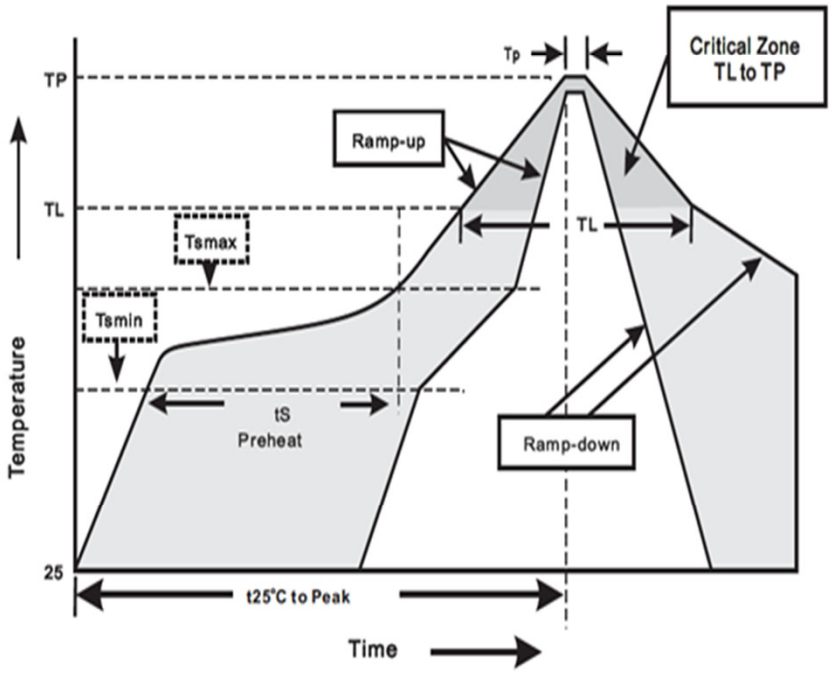
Tape & Reel Specification





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

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