



# 3.0Amp. Surface Mount Schottky Barrier Diodes SK3XSA Series

## Features

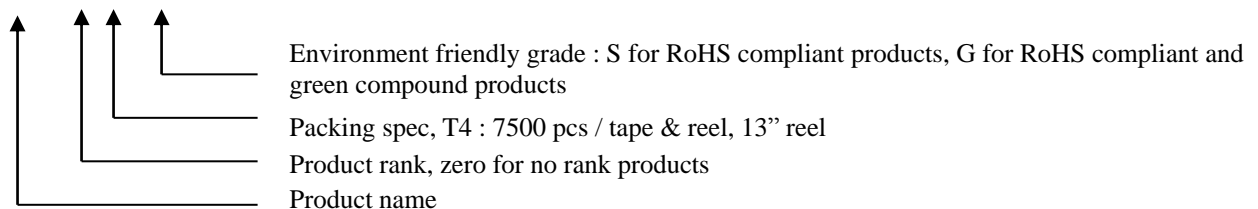
- For surface mounted applications.
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Low leakage current
- High surge capability
- High temperature soldering: 250°C/10 seconds at terminals
- Exceeds environmental standards of MIL-S-19500/228

## Mechanical Data

- Case: SMA/DO-214AC molded plastic.
- Terminals: Solder plated, solderable per MIL-STD-750 method 2026
- Polarity: Indicated by cathode band.
- Packaging: 12mm tape per EIA STD RS-481.
- Weight: approx. 0.064 gram, 0.002 ounce

## Ordering Information

Device	Package	Shipping	Marking
SK32SA-0-T4-G	SMA (Pb-free lead plating and halogen-free package)	7500 pcs / Tape & Reel	SK32
SK34SA-0-T4-G			SK34
SK36SA-0-T4-G			SK36
SK38SA-0-T4-G			SK38
SK3BSA-0-T4-G			SK3B



## Maximum Ratings and Electrical Characteristics

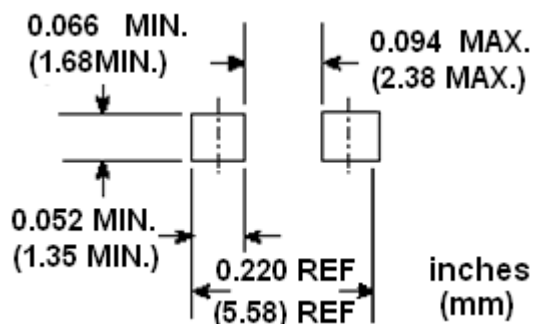
(Rating at 25°C ambient temperature unless otherwise specified. )

Parameter	Symbol	Type					Units
		SK32	SK34	SK36	SK38	SK3B	
Repetitive peak reverse voltage	$V_{RRM}$	20	40	60	80	100	V
Maximum RMS voltage	$V_{RMS}$	14	28	42	56	70	V
Maximum DC blocking voltage	$V_R$	20	40	60	80	100	V
Maximum instantaneous forward voltage, $I_F=3A$ (Note 1)	$V_F$	0.5	0.5	0.75	0.85	0.85	V
Average forward rectified current	$I_O$	3					A
Peak forward surge current @8.3ms single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$	80					A
Maximum DC reverse current $V_R=V_{RRM}, T_A=25^\circ C$ (Note 1) $V_R=V_{RRM}, T_A=125^\circ C$ (Note 1)	$I_R$	0.5 10					mA mA
Maximum thermal resistance, Junction to ambient(Note 2)	$R_{th,JA}$	65 (typ)					°C/W
Typical thermal resistance, junction to case	$R_{th,JC}$	14					°C/W
Power Dissipation	$T_A=25^\circ C$	1.5 7					W
	$T_C=25^\circ C$						
Diode junction capacitance @ $f=1MHz$ and applied 4V reverse voltage	$C_J$	200 (typ)					pF
Storage temperature	$T_{stg}$	-55 ~ +150					°C
Operating temperature	$T_J$	-55 ~ +125					°C

Notes : 1.Pulse test, pulse width=300  $\mu$  sec, 2% duty cycle

2.Mounted on PCB with 14mm<sup>2</sup>(0.013mm thickness) copper pad area.

## Recommended soldering footprint



**Characteristic Curves**

FIG.1 - FORWARD CURRENT DERATING CURVE

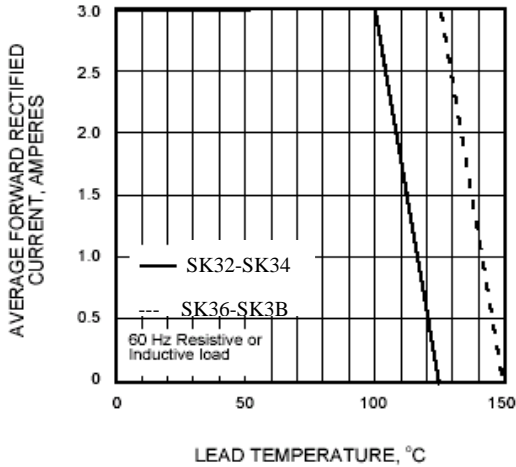


FIG.2 - MAXIMUM NON-REPETITIVE 9 PEAK FORWARD SURGE CURRENT

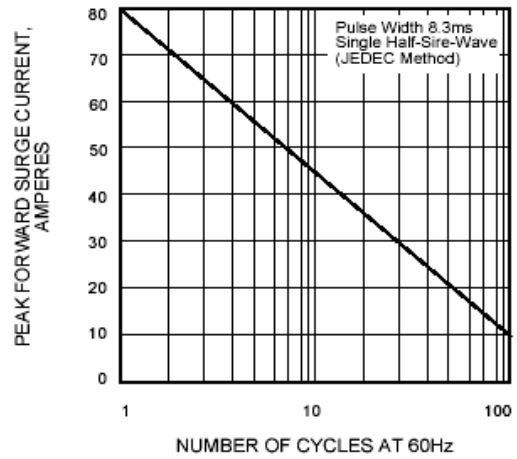


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

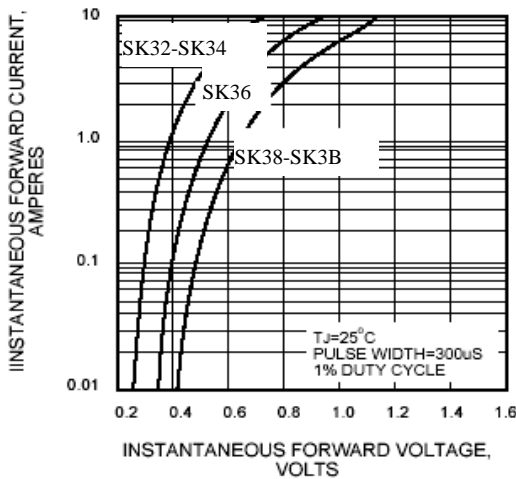


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

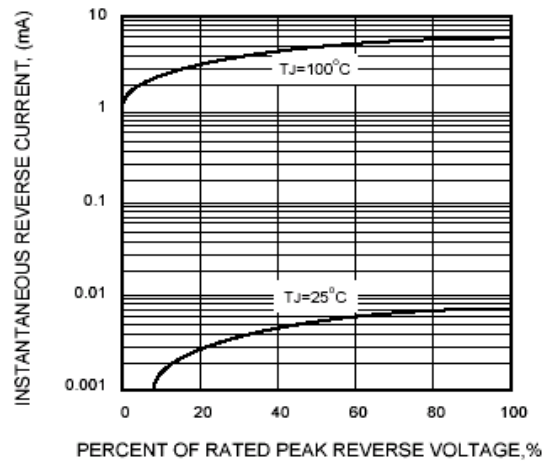
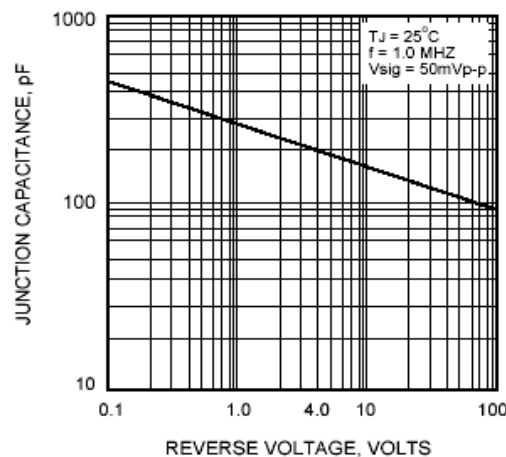
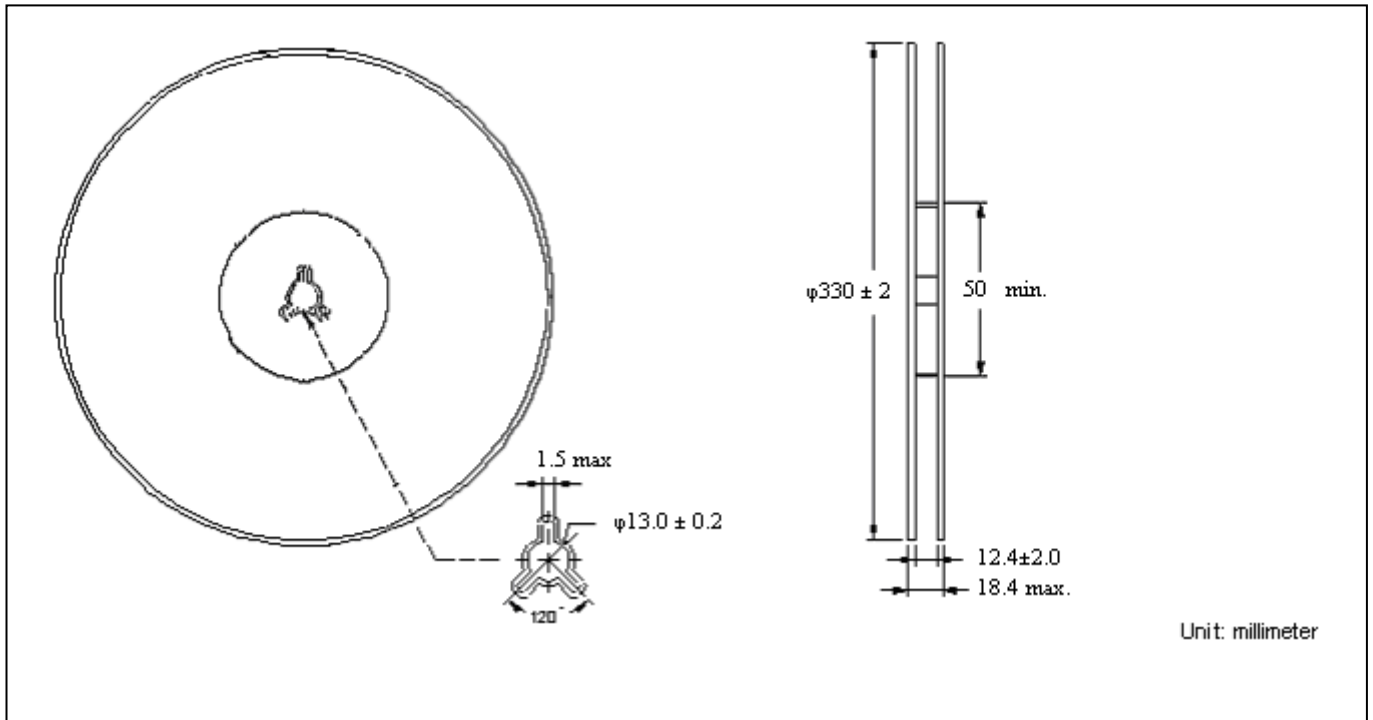


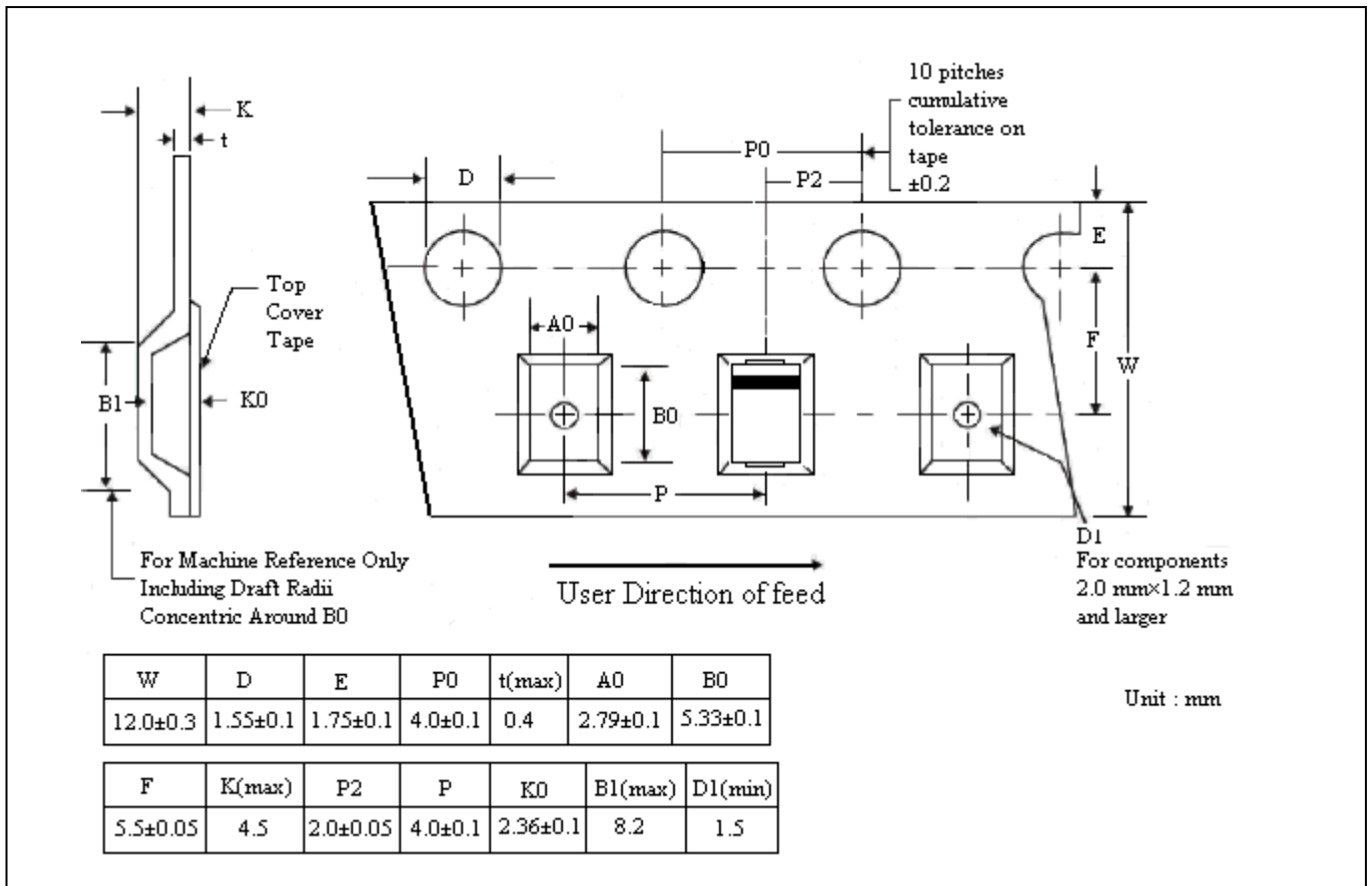
FIG.5 - TYPICAL JUNCTION CAPACITANCE



## Reel Dimension

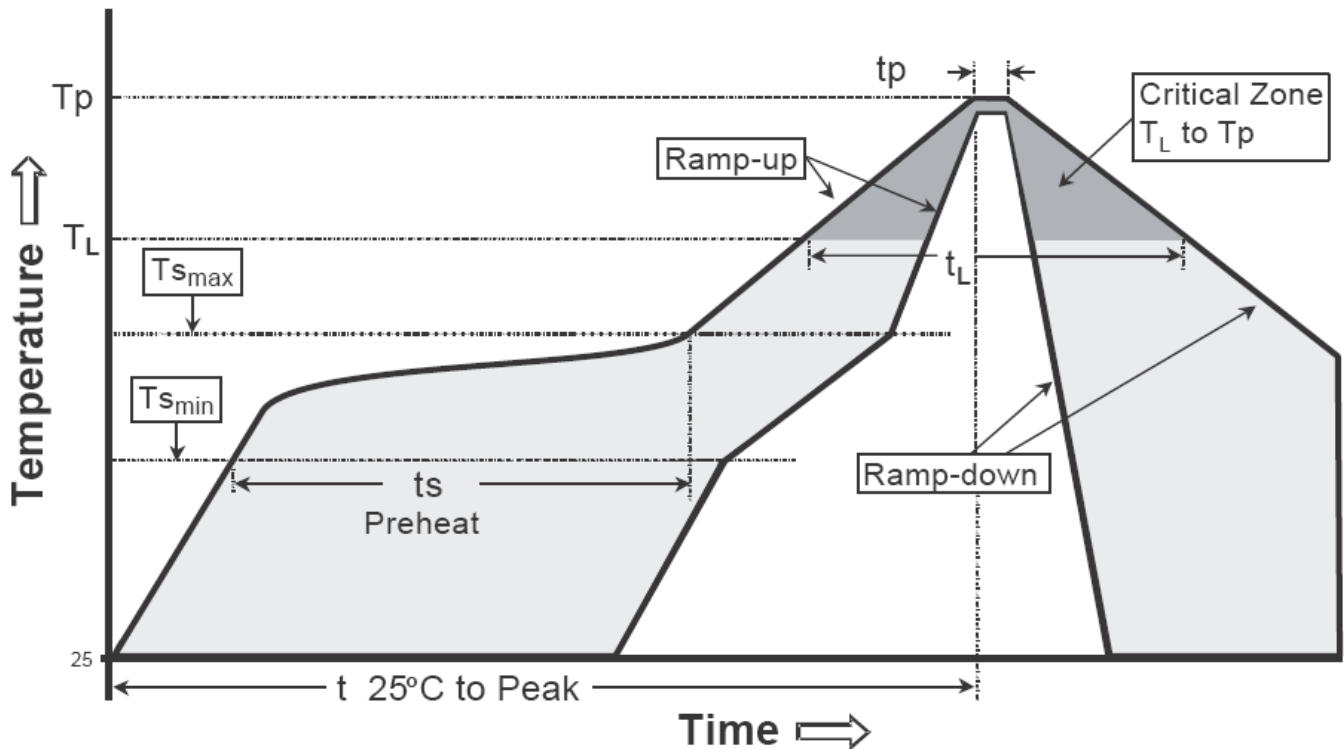


## Carrier Tape Dimension



**Recommended wave soldering condition**

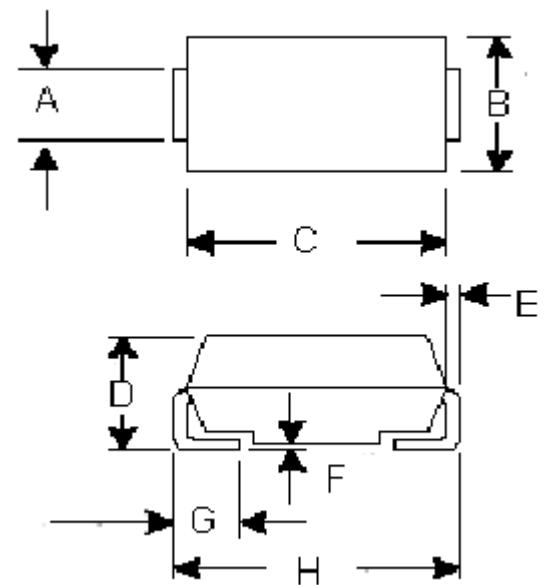
Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

**Recommended temperature profile for IR reflow**


Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(T <sub>s min</sub> )	100°C	150°C
-Temperature Max(T <sub>s max</sub> )	150°C	200°C
-Time(t <sub>s min</sub> to t <sub>s max</sub> )	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (T <sub>L</sub> )	183°C	217°C
- Time (t <sub>L</sub> )	60-150 seconds	60-150 seconds
Peak Temperature(T <sub>P</sub> )	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(t <sub>p</sub> )	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

**SMA Dimension**



Marking :

Device	SK32	SK34	SK36	SK38
Code	SK32	SK34	SK36	SK38

Device	SK3B			
Code	SK3B			

SMA/DO-214AC Plastic  
 Surface Mounted Package  
 CYStek Package Code : SA

\*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.052	0.062	1.32	1.60	E	0.006	0.012	0.15	0.31
B	0.098	0.114	2.50	2.90	F	0.002	0.008	0.05	0.20
C	0.154	0.181	3.90	4.60	G	0.030	0.060	0.76	1.52
D	0.067	0.091	1.70	2.30	H	0.188	0.208	4.80	5.28

- Notes :**
1. Controlling dimension : millimeters.
  2. Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
  3. If there is any question with packing specification or packing method, please contact your local CYStek sales office.

**Material :**

- Lead : Pure tin plated.
- Mold Compound : Epoxy resin family, flammability solid burning class:UL94V-0.

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