



5.0Amp. Surface Mount Schottky Barrier Diodes

# SK520SC thru SK5100SC

## Features

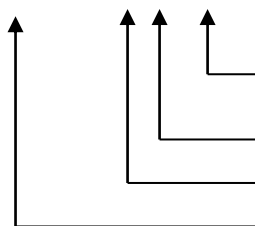
- For surface mounted applications.
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Low leakage current
- High surge capability
- High temperature soldering: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

## Mechanical Data

- Case: Molded plastic, SMC/JEDEC DO-214AB.
- Terminals: Solder plated, solderable per MIL-STD-750 method 2026
- Polarity: Indicated by cathode band.
- Mounting Position : Any.
- Weight: 0.195 gram, 0.00585 ounce

## Ordering Information

Device	Package	Shipping	Marking
SK520SC- 0-T6-G	SMC (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel	SS52
SK530SC- 0-T6-G			SS53
SK540SC- 0-T6-G			SS54
SK550SC- 0-T6-G			SS55
SK560SC- 0-T6-G			SS56
SK580SC-0-T6-G			SS58
SK5100SC-0-T6-G			S510



Environment friendly grade : S for RoHS compliant products, G for RoHS compliant and green compound products

Packing spec, T6 : 3000 pcs / tape & reel, 13” reel

Product rank, zero for no rank products

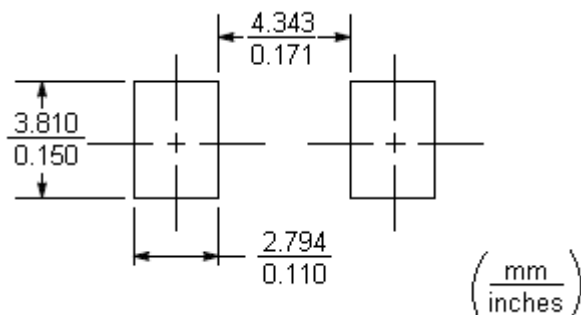
Product name

## Maximum Ratings and Electrical Characteristics

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

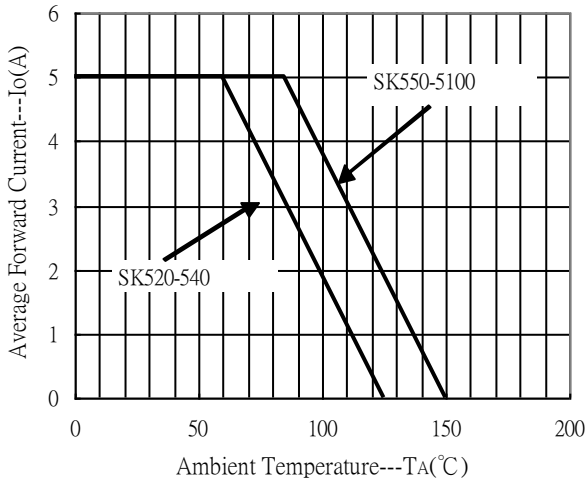
Parameter	Symbol	Type							Units
		SK520	SK530	SK540	SK550	SK560	SK580	SK5100	
Repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	80	100	V
Maximum RMS voltage	$V_{RMS}$	14	21	28	35	42	56	70	V
Maximum DC blocking voltage	$V_R$	20	30	40	50	60	80	100	V
Maximum instantaneous forward voltage, $I_F=5A$ (Note 1)	$V_F$	0.55	0.55	0.55	0.7	0.7	0.85	0.85	V
Average forward rectified current	$I_O$	5							A
Peak forward surge current @8.3ms single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$	150							A
Maximum DC reverse current $V_R=V_{RRM}, T_A=25^\circ C$ $V_R=V_{RRM}, T_A=125^\circ C$	$I_R$	0.5 50							mA mA
Maximum thermal resistance, Junction to ambient	$R_{th,JA}$	46							°C/W
Maximum thermal resistance, Junction to case	$R_{th,JC}$	24							°C/W
Diode junction capacitance @ $f=1MHz$ and applied 4VDC reverse voltage	$C_J$	380(typ)							pF
Storage temperature	$T_{stg}$	-55 ~ +150							°C
Operating temperature	$T_J$	-55 ~ +125			-55 ~ +150				°C

## Recommended soldering footprint

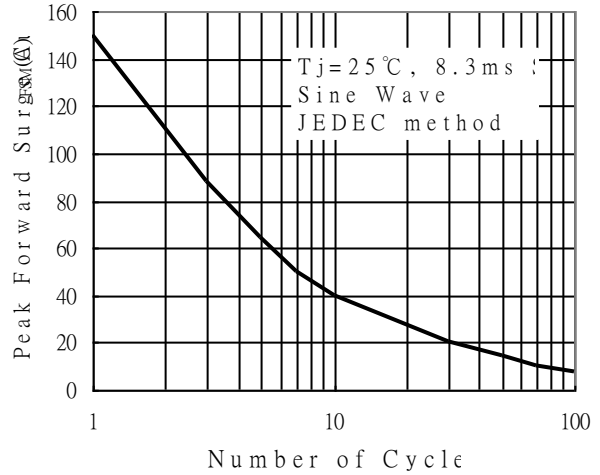


**Characteristic Curves**

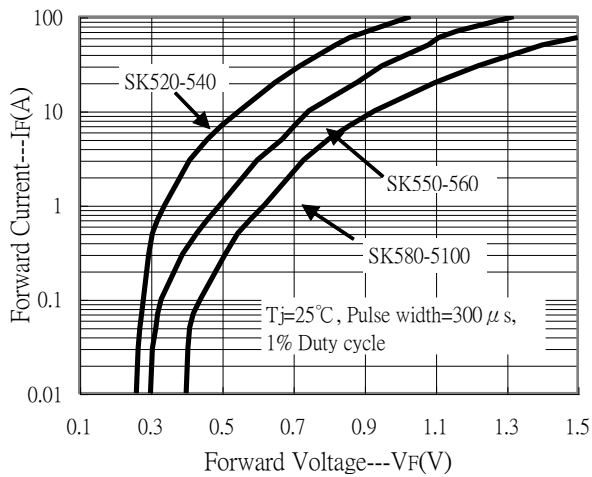
Forward Current Derating Curve



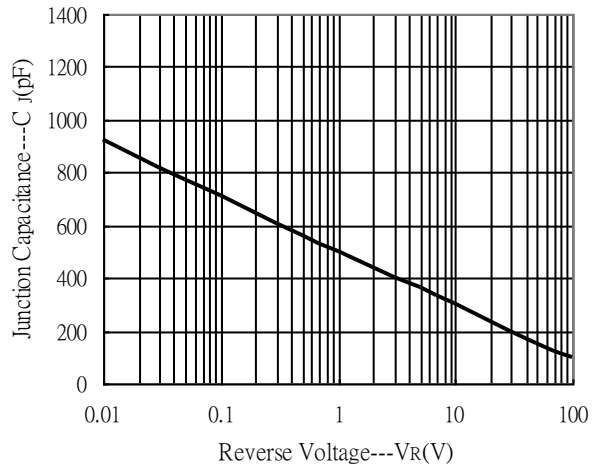
Maximum Non-Repetitive Forward Surge Current



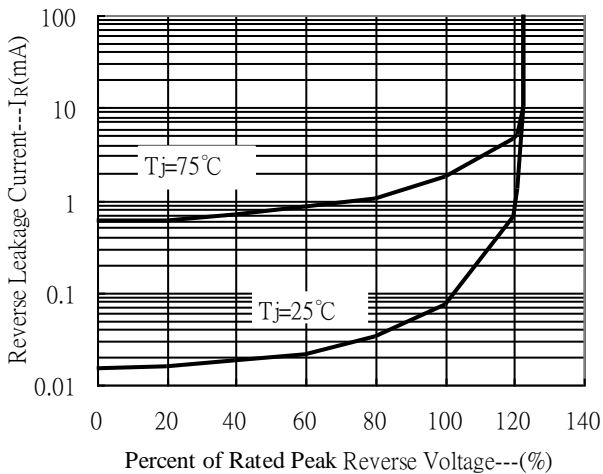
Forward Current vs Forward Voltage



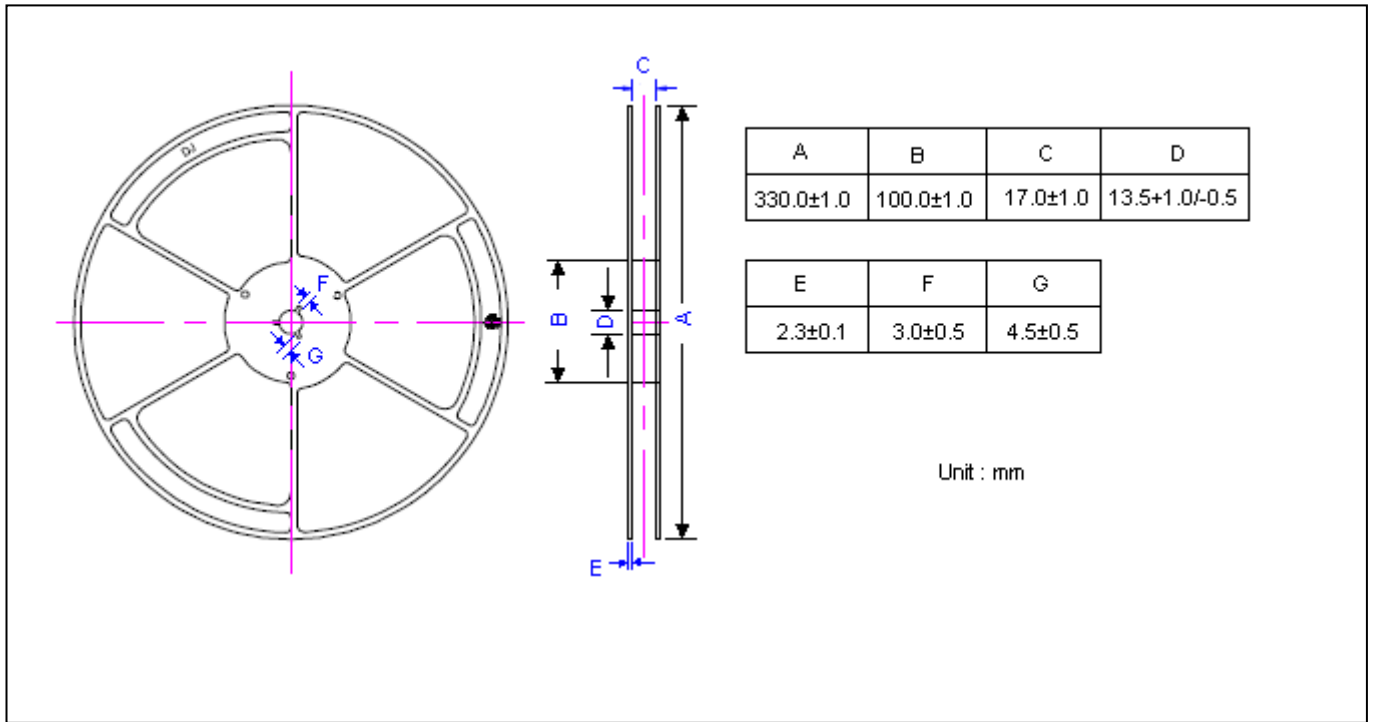
Junction Capacitance vs Reverse Voltage



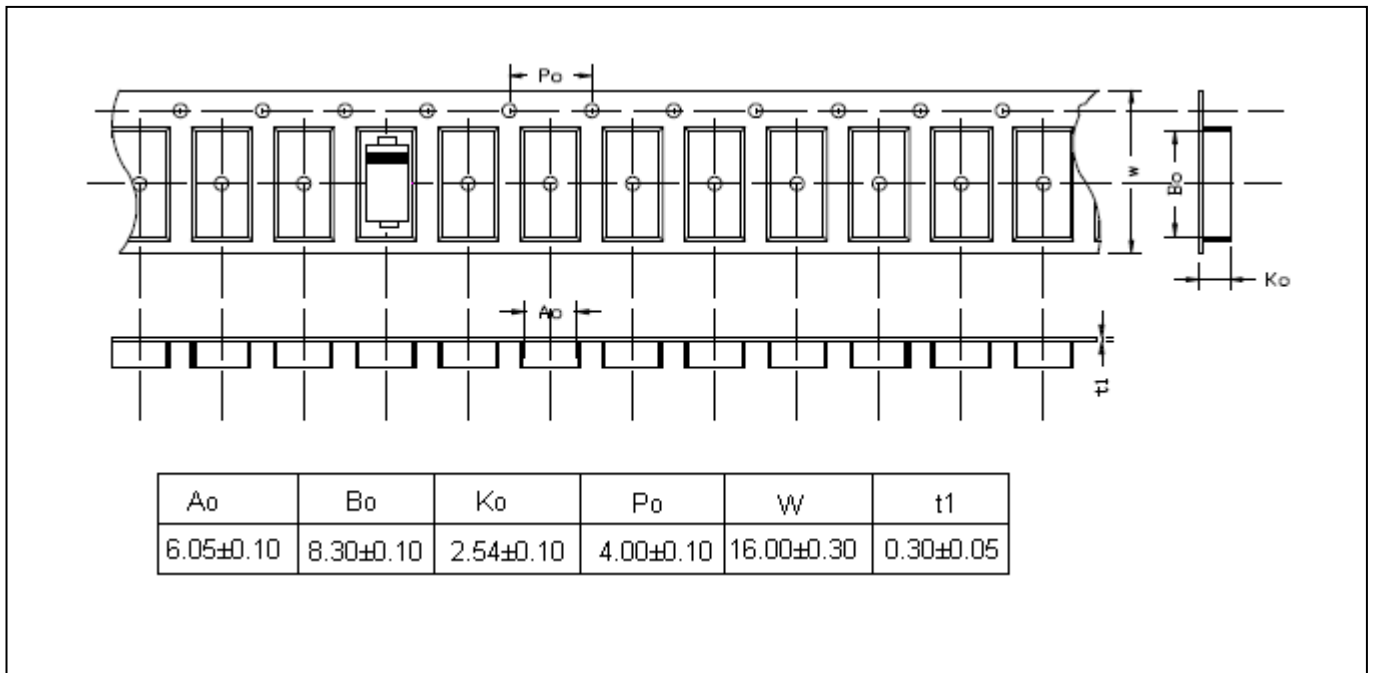
Reverse Leakage Current vs Reverse Voltage



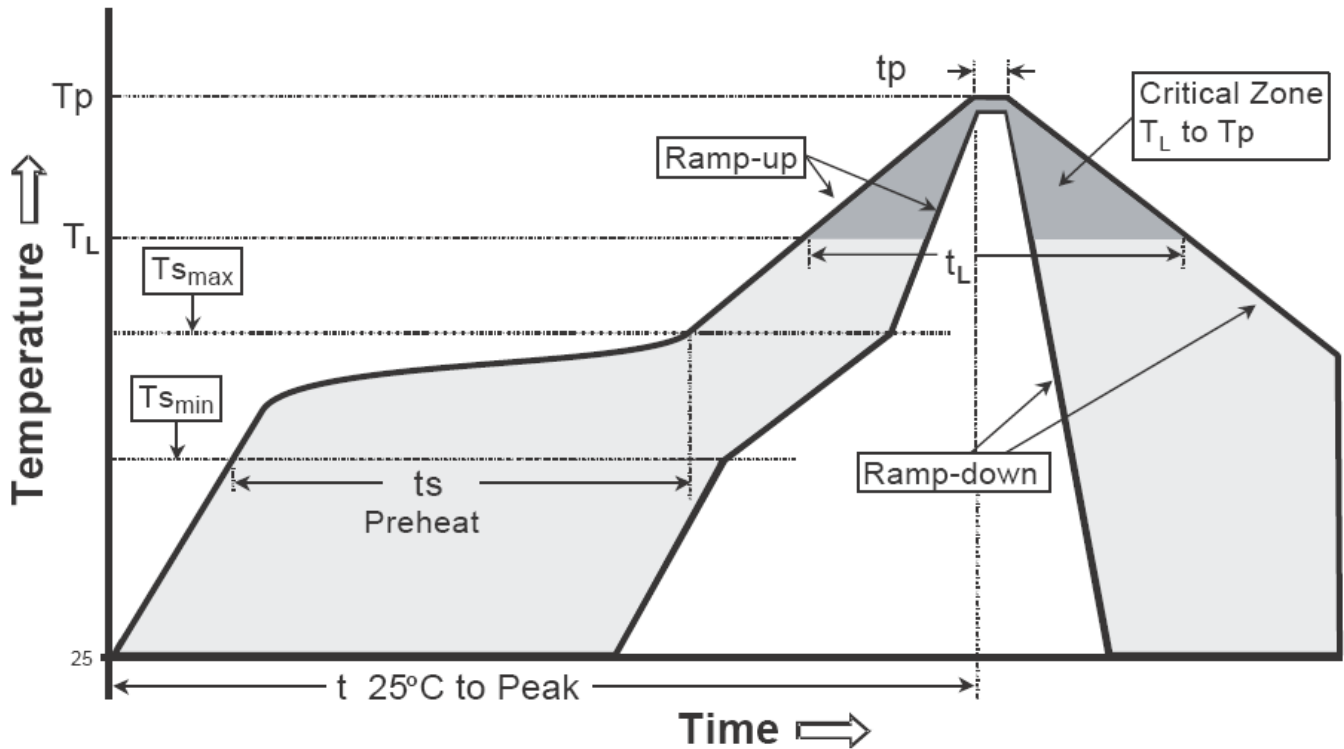
**Reel Dimension**



**Carrier Tape Dimension**



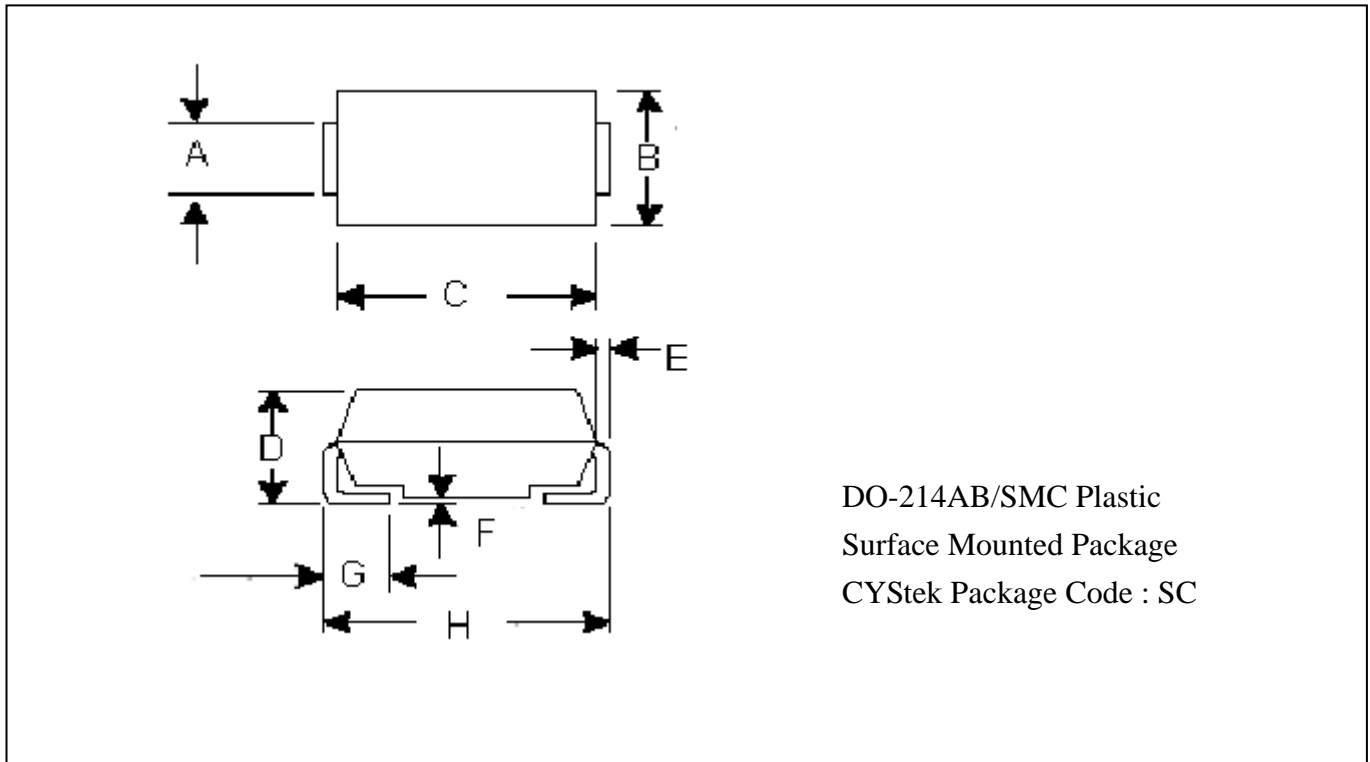
**Recommended temperature profile for IR reflow**



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(Ts min)	100°C	150°C
-Temperature Max(Ts max)	150°C	200°C
-Time(ts min to ts max)	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (Tl)	183°C	217°C
- Time (tl)	60-150 seconds	60-150 seconds
Peak Temperature(Tp)	240 +0/-5 °C	260 +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	6 minutes max.	8 minutes max.

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

**DO-214AB/SMC Dimension**



\*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.114	0.126	2.90	3.20	E	0.006	0.012	0.15	0.31
B	0.220	0.245	5.59	6.22	F	0.004	0.008	0.10	0.20
C	0.260	0.280	6.60	7.11	G	0.030	0.060	0.76	1.52
D	0.078	0.103	1.98	2.62	H	0.305	0.320	7.75	8.13

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.

**Important Notice:**

- All rights are reserved. Reproduction in whole or in part is prohibited without the prior written approval of CYStek.
- CYStek reserves the right to make changes to its products without notice.
- CYStek **semiconductor products are not warranted to be suitable for use in Life-Support Applications, or systems.**
- CYStek assumes no liability for any consequence of customer product design, infringement of patents, or application assistance.