5.0Amp. Surface Mount Schottky Barrier Diodes

SK520SC thru SK5100SC

Features

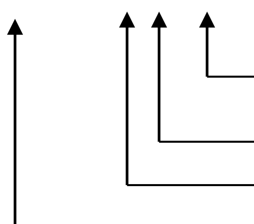
- For surface mounted applications.
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Low leakage current
- High surge capability
- High temperature soldering: 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

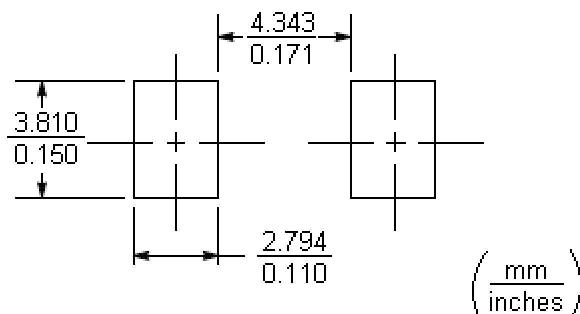
Product name

Maximum Ratings and Electrical Characteristics

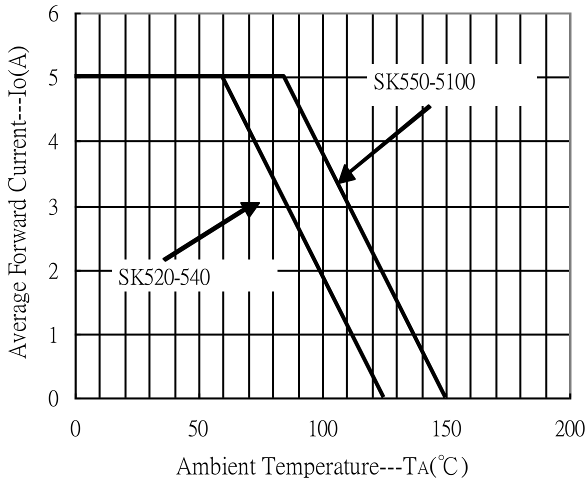
(Rating at 25°C ambient temperature unless otherwise specified.)

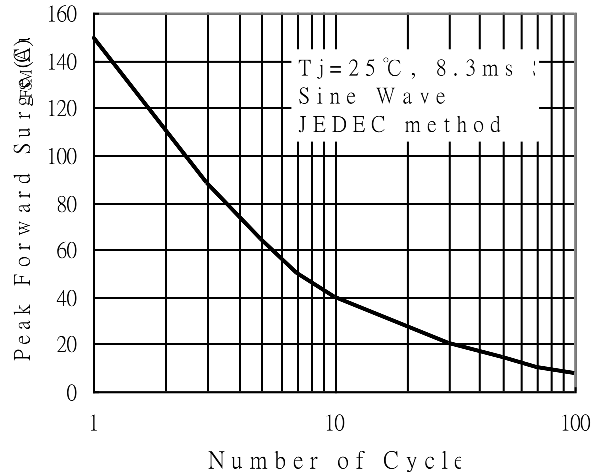
Parameter	Symbol	Type							Units
		SK520	SK530	SK540	SK550	SK560	SK580	SK5100	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	80	100	V
Maximum RMS voltage	V_{RMS}	14	21	28	35	42	56	70	V
Maximum DC blocking voltage	V_R	20	30	40	50	60	80	100	V
Maximum instantaneous forward voltage, I_F=5A (Note 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℃ $V_R=V_{RRM}, T_A$=125℃	I_R	0.5 50							mA mA
Maximum thermal resistance, Junction to ambient	$R_{th,JA}$	46							℃/W
Maximum thermal resistance, Junction to case	$R_{th,JC}$	24							℃/W
Diode junction capacitance @ f=1MHz and applied 4VDC reverse voltage	C_J	380(typ)							pF
Storage temperature	Tstg	-55 ~ +150							℃
Operating temperature	T_J	-55 ~ +125			-55 ~ +150				℃

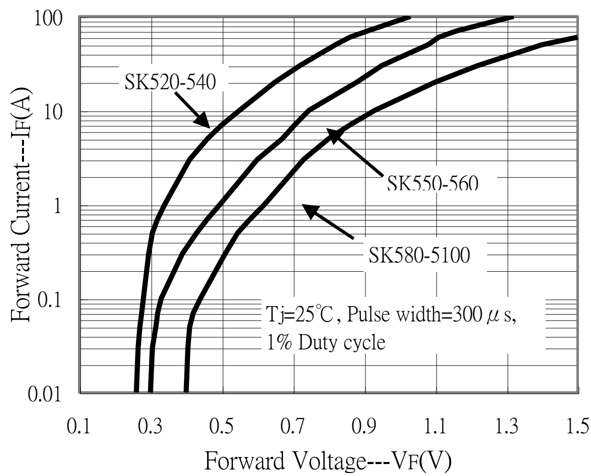
Recommended soldering footprint

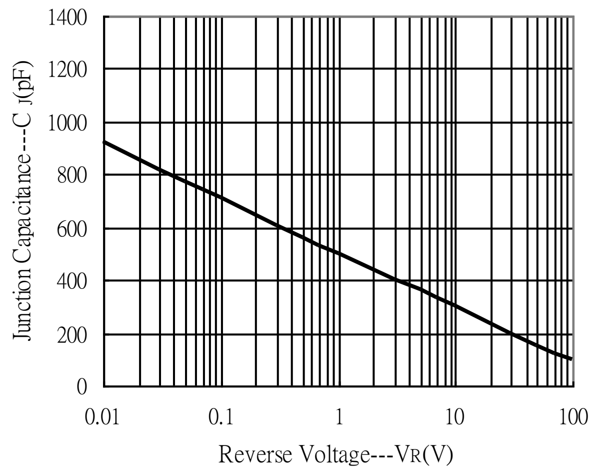


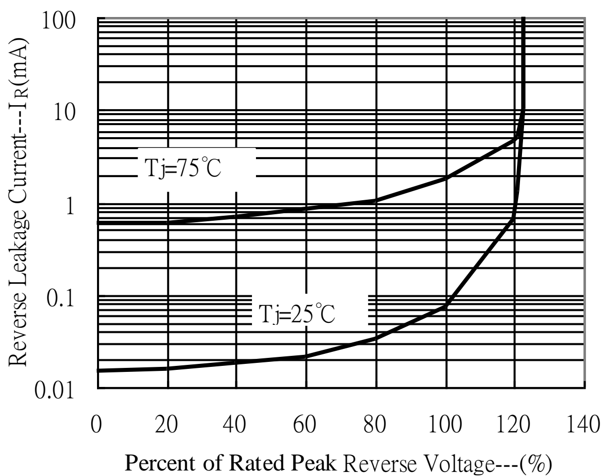
Characteristic Curves



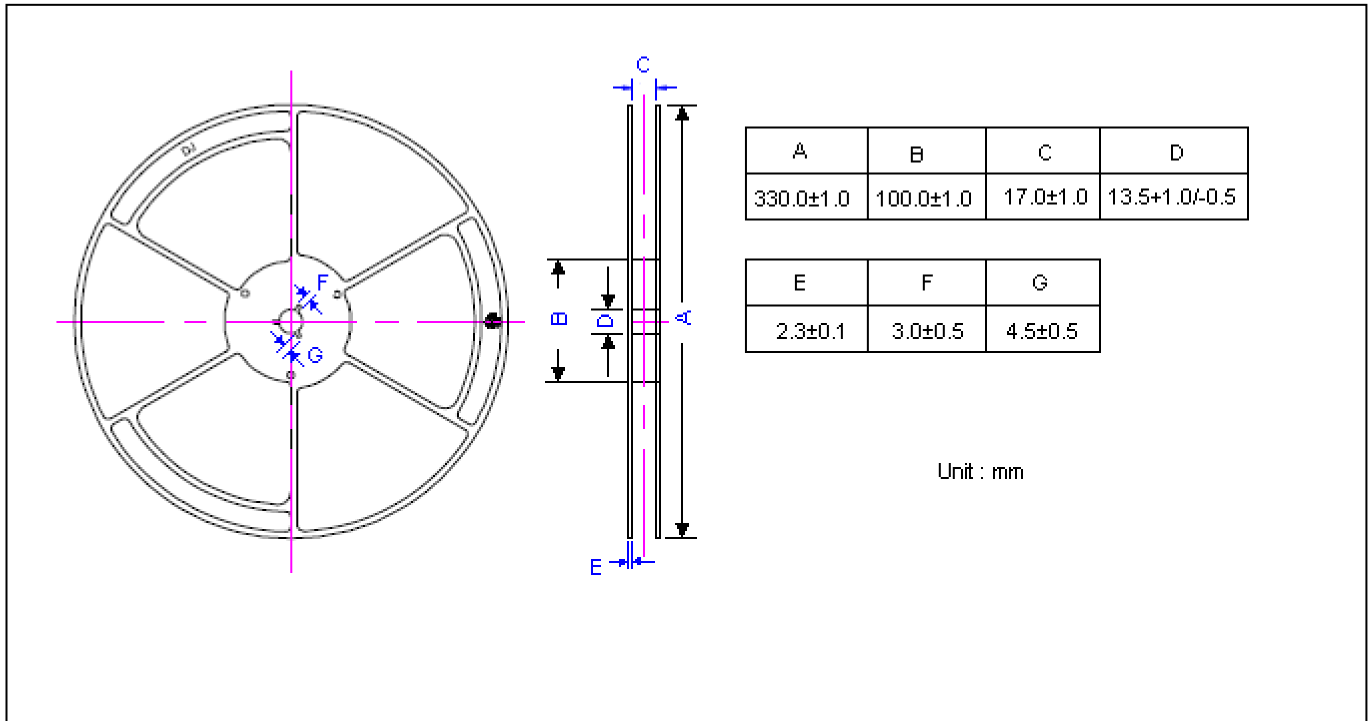








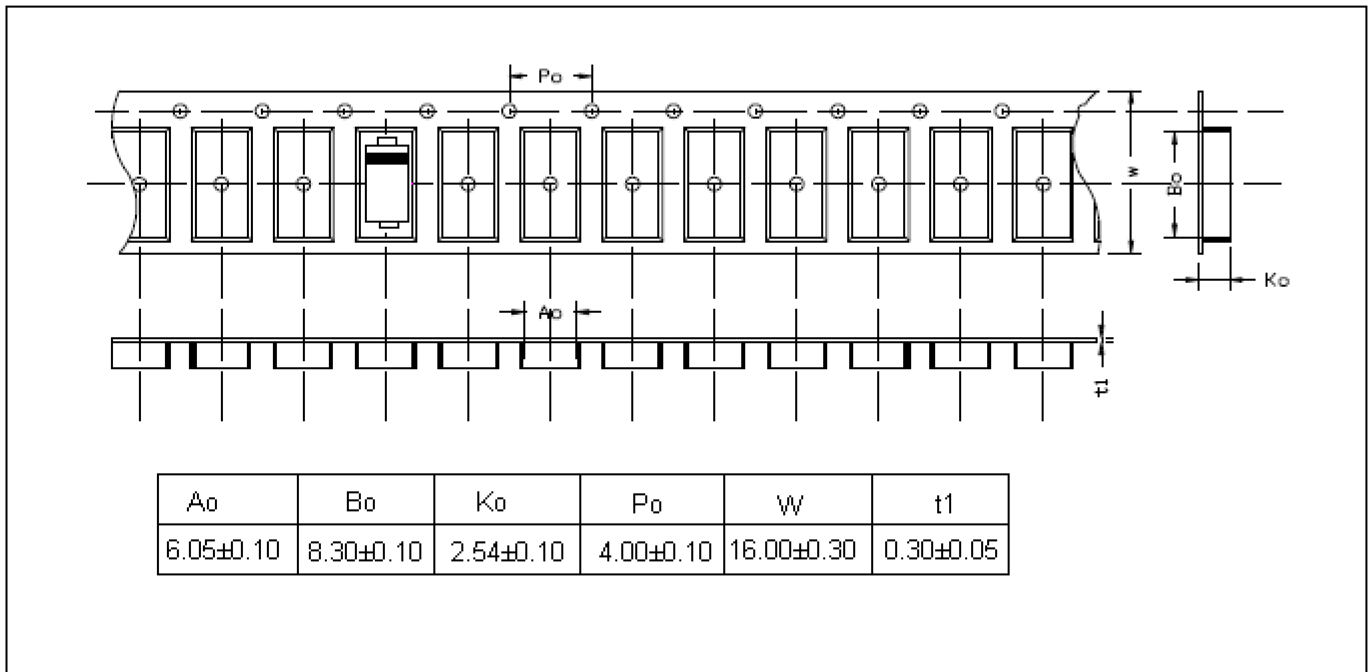
Reel Dimension



A	B	C	D
330.0±1.0	100.0±1.0	17.0±1.0	13.5+1.0/-0.5

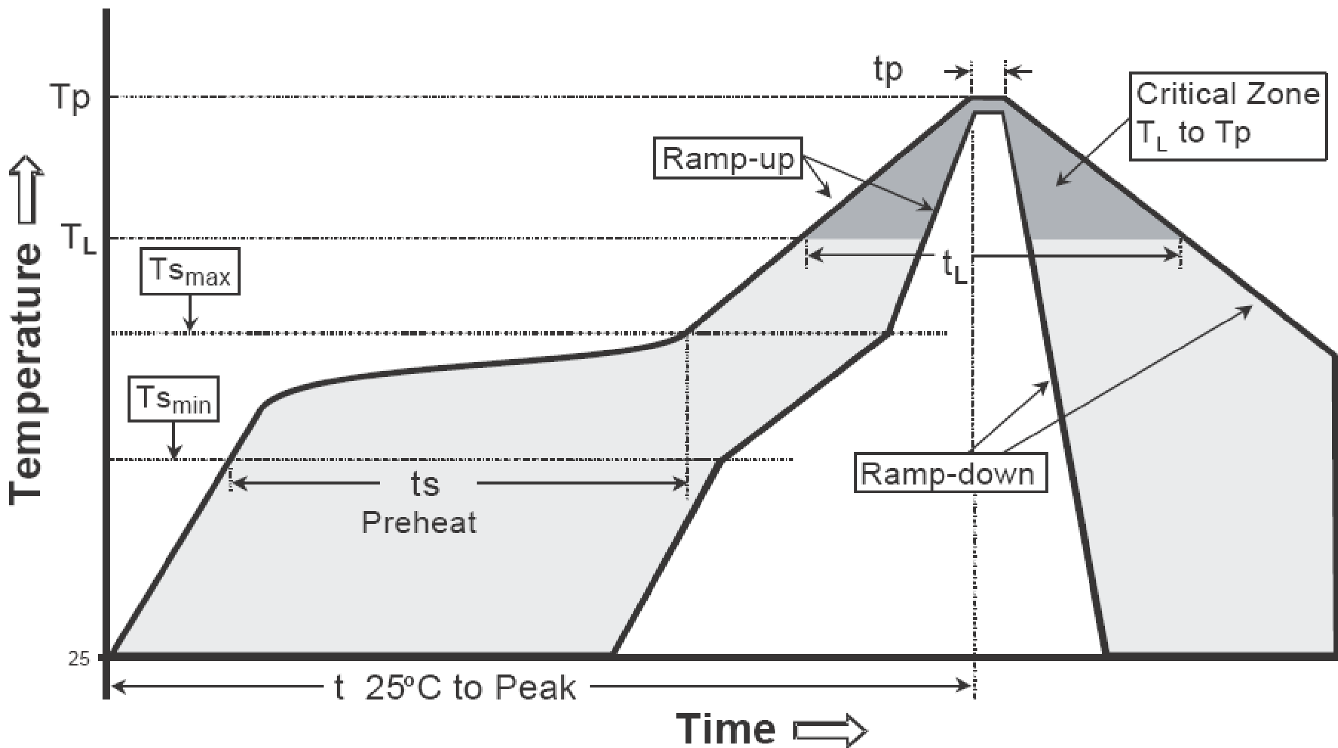
E	F	G
2.3±0.1	3.0±0.5	4.5±0.5

Carrier Tape Dimension



Ao	Bo	Ko	Po	W	t1
6.05±0.10	8.30±0.10	2.54±0.10	4.00±0.10	16.00±0.30	0.30±0.05

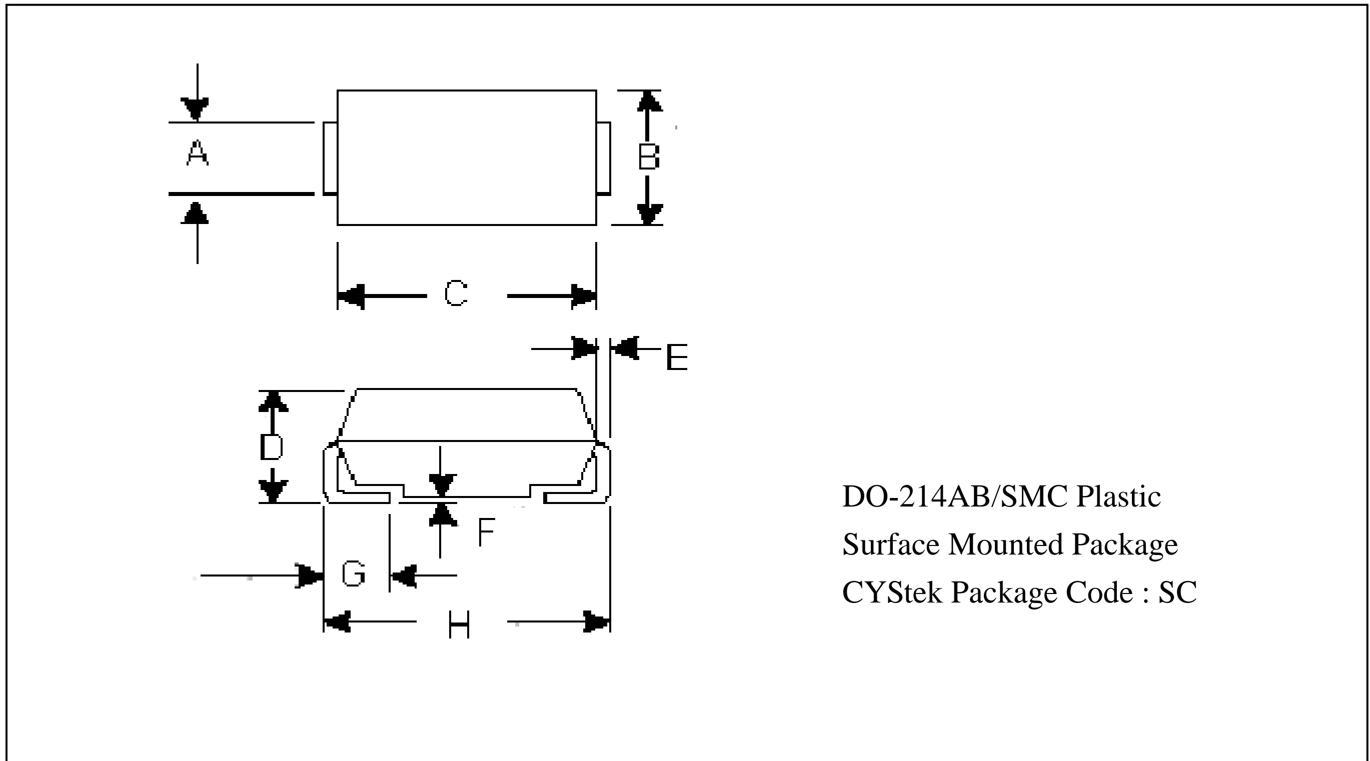
Recommended temperature profile for IR reflow



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) −Temperature Max(Ts max) −Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: −Temperature (T_L) − Time (t_L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T_P)	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.

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