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

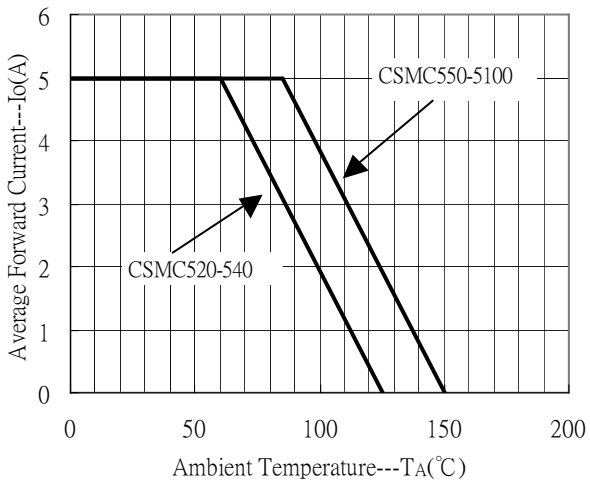
Maximum Ratings and Electrical Characteristics

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

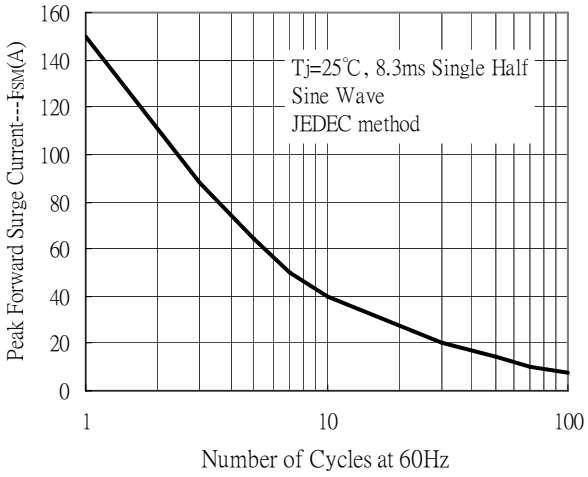
Parameter	Symbol	Type							Units
		SK520	SK530	SK540	SK550	SK560	SK580	SK5100	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	80	100	V
Maximum RMS voltage	V_{RMS}	14	21	28	35	42	56	70	V
Maximum DC blocking voltage	V_R	20	30	40	50	60	80	100	V
Maximum instantaneous forward voltage, I_F=5A (Note 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(typ)							℃/W
Maximum thermal resistance, Junction to case	$R_{th,JC}$	24(typ)							℃/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				℃

Characteristic Curves

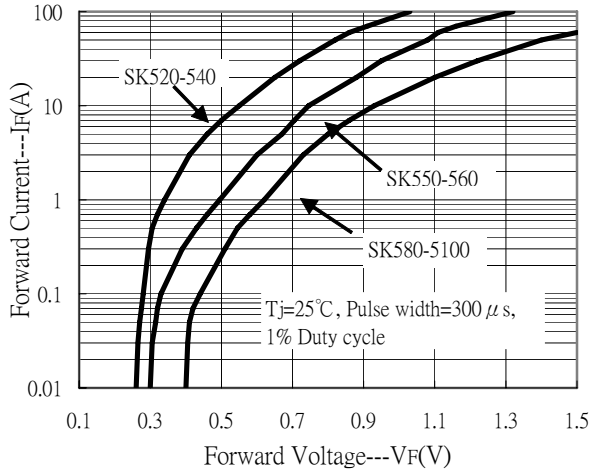
Forward Current Derating Curve



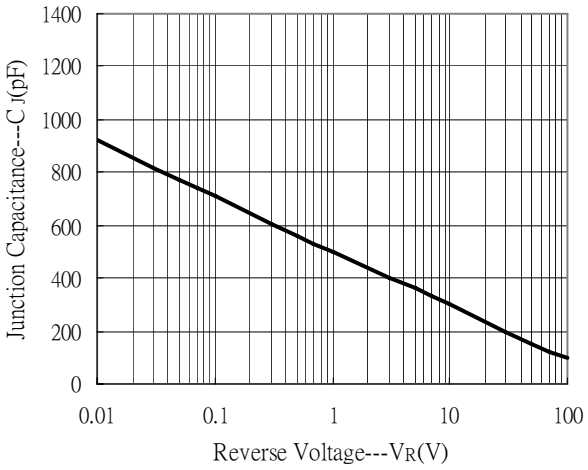
Maximum Non-Repetitive Forward Surge Current



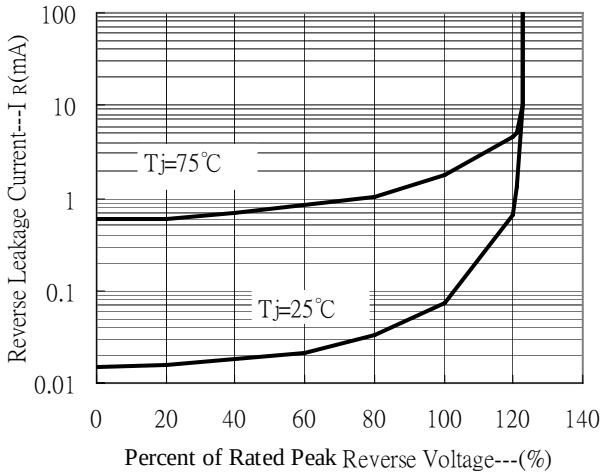
Forward Current vs Forward Voltage



Junction Capacitance vs Reverse Voltage



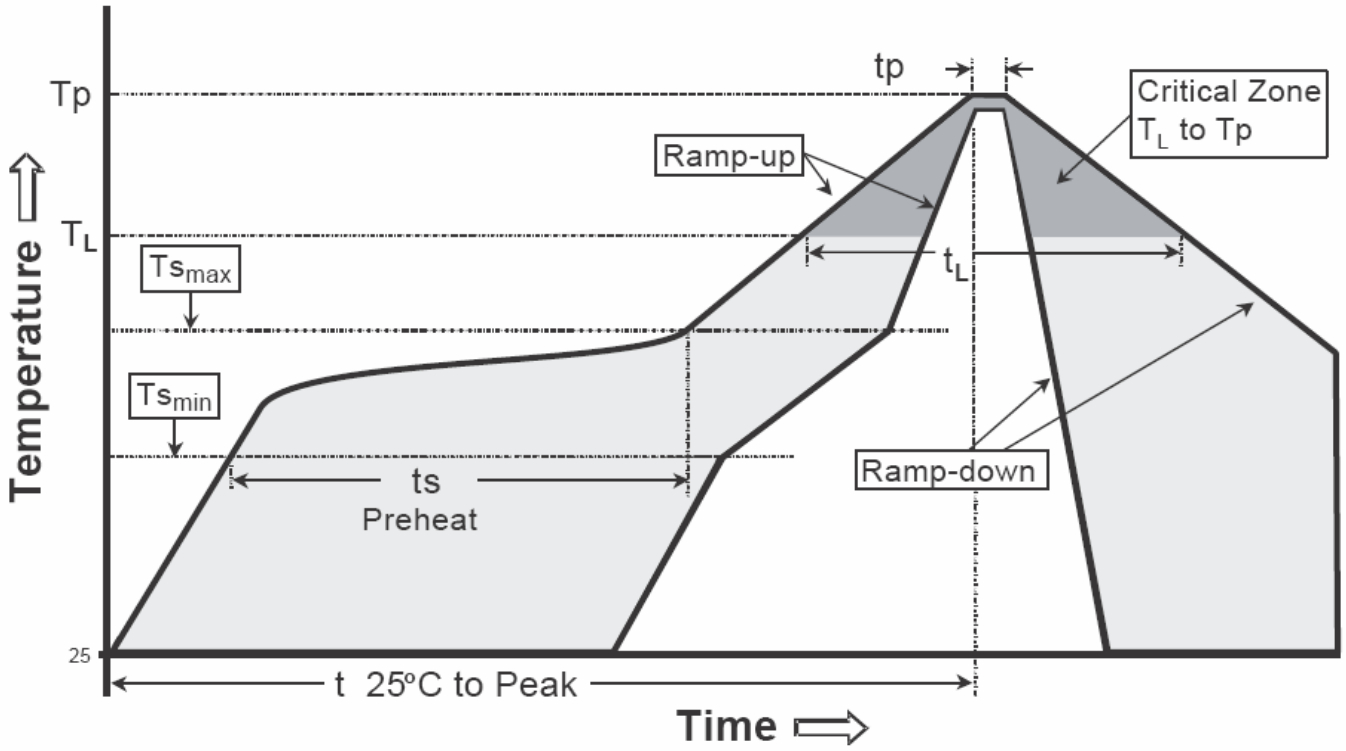
Reverse Leakage Current vs Reverse Voltage



Ordering Information

Device	Package	Shipping	Marking
SK520SC	SMC	3000 pcs / Tape & Reel	SS52
SK530SC	SMC	3000 pcs / Tape & Reel	SS53
SK540SC	SMC	3000 pcs / Tape & Reel	SS54
SK550SC	SMC	3000 pcs / Tape & Reel	SS55
SK560SC	SMC	3000 pcs / Tape & Reel	SS56
SK580SC	SMC	3000 pcs / Tape & Reel	SS58
SK5100SC	SMC	3000 pcs / Tape & Reel	S510

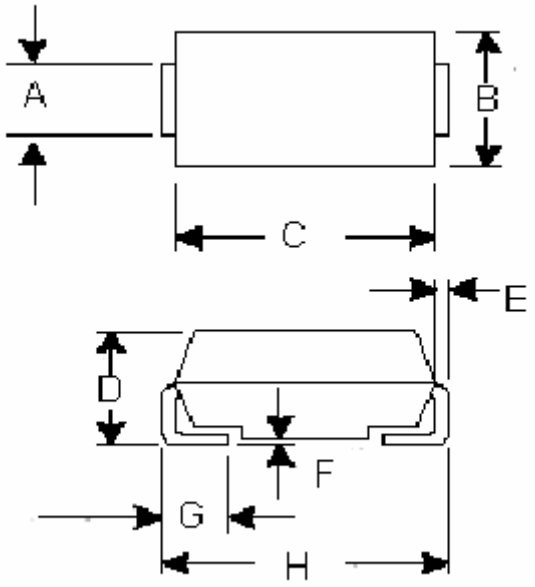
Recommended temperature profile for IR reflow



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(T_S min) −Temperature Max(T_S max) −Time($t_{s\ min}$ to $t_{s\ max}$)	 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



DO-214AB/SMC Plastic
Surface Mounted Package
CYStek Package Code : SC

*: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.