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# 5.0Amp. Surface Mount Schottky Barrier Diodes SK520SB thru SK5100SB

### **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
- Exceeds environmental standards of MIL-S-19500/228

### **Mechanical Data**

- Case: Molded plastic, SMB/JEDEC DO-214AA.
- Terminals: Solder plated, solderable per MIL-STD-750 method 2026
- Polarity: Indicated by cathode band.
- Mounting Position : Any.
- Weight: 0.0878 gram

### **Ordering Information**

Device	Package	Shipping		
SK5X0SB - 0-T6-G	SMB (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel		
	Environment friendly grade : S for RoHS compliant produc green compound products Packing spec, T6 : 3000 pcs / tape & reel, 13" reel	ts, G for RoHS compliant and		

Product rank, zero for no rank products

Product name



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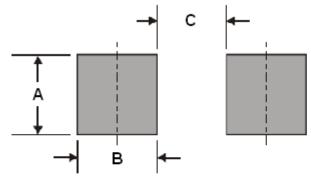
### **Maximum Ratings and Electrical Characteristics**

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

	_								
	Туре								
Parameter	Symbol	SK	SK	SK	SK	SK	SK	SK	Units
		520	530	540	550	560	580	5100	
Repetitive peak reverse voltage	Vrrm	20	30	40	50	60	80	100	V
Maximum RMS voltage	Vrms	14	21	28	35	42	56	70	V
Maximum DC blocking voltage	VR	20	30	40	50	60	80	100	V
Maximum instantaneous forward voltage, IF=5A (Note 1)	VF	0.55	0.55	0.55	0.7	0.7	0.85	0.85	V
Average forward rectified current	Io		•		5		•		Α
Peak forward surge current @8.3ms single half sine wave superimposed on rated load (JEDEC method)	IFSM	FSM 150					A		
Maximum DC reverse current $V_R=V_{RRM}, T_A=25^{\circ}C$ (Note) $V_R=V_{RRM}, T_A=125^{\circ}C$ (Note)	IR	0.5 50				mA mA			
Maximum thermal resistance, Junction to Lead	R <sub>th</sub> ,JL	h,JL 12 (typ)						°C/W	
Diode junction capacitance @ f=1MHz and applied 4VDC reverse voltage	CJ	380(typ)					pF		
Storage temperature	Tstg	-55 ~ +150						°C	
Operating temperature	TJ	-55 ~ +125 -55 ~ +150				°C			

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

### **Recommended Footprint**



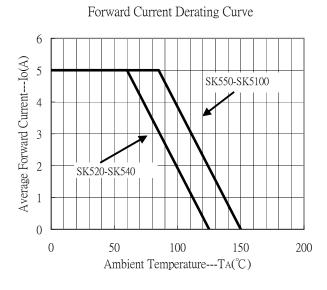
DIM	Inches	Millimeters			
	Тур	Тур			
А	0.142	3.60			
В	0.059	1.50			
С	0.118	3.00			

Dimensions in inches and (millimeter)

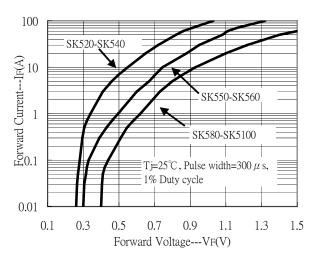


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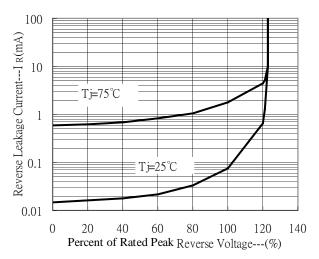
### **Typical Characteristics**



Forward Current vs Forward Voltage



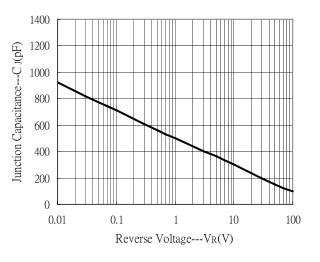
Reverse Leakage Current vs Reverse Voltage



160 Peak Forward Surge Current---FsM(A) 140 Tj=25°C, 8.3ms Single Half Sine Wave 120 JEDEC method 100 80 60 40 20 0 10 100 1 Number of Cycles at 60Hz

Maximum Non-Repetitive Forward Surge Current

Junction Capacitance vs Reverse Voltage

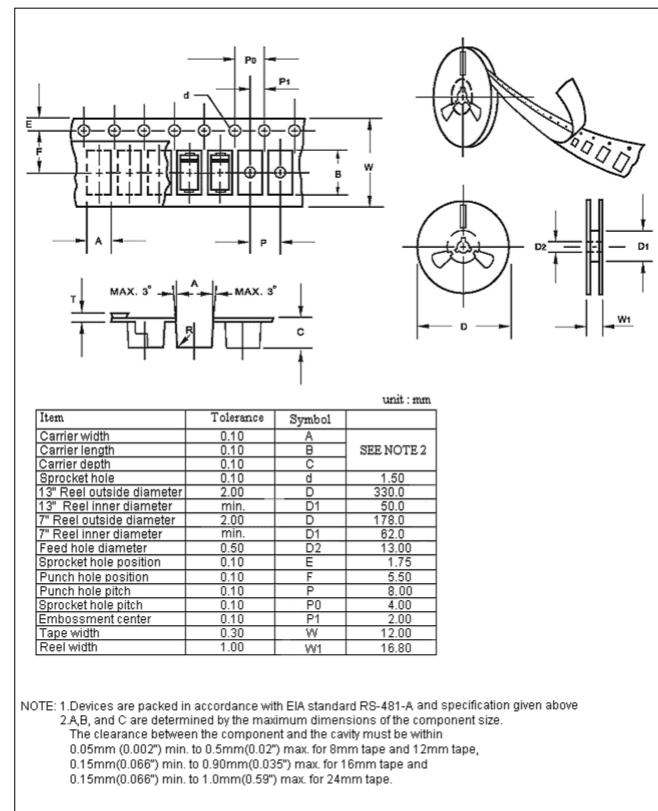




## **CYStech Electronics Corp.**

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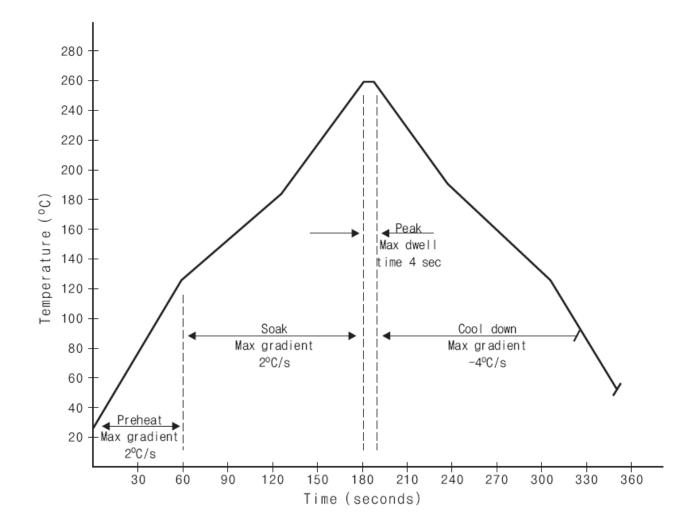
### **Taping Reel Dimension**





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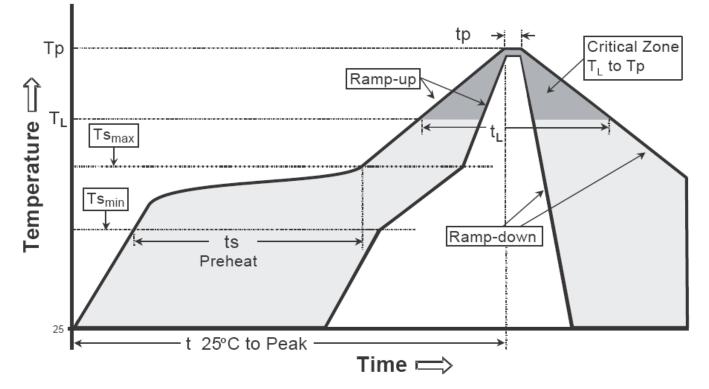
### **Recommended Wave Soldering Profile**





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### Recommended temperature profile for IR reflow



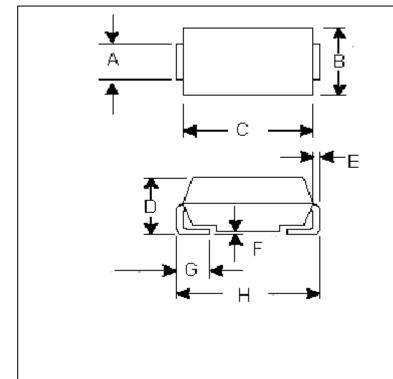
Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly		
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.		
Preheat -Temperature Min(Ts min) -Temperature Max(Ts max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds		
Time maintained above: –Temperature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



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### DO-214AA/SMB Dimension



SK540SB
SS54
SK580SB SS58
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DO-214AA/SMB Plastic Surface Mounted Package CYStek Package Code : SB

\*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
Α	0.076	0.082	1.93	2.08	E	0.006	0.012	0.15	0.31
В	0.137	0.147	3.48	3.73	F	0.004	0.008	0.10	0.20
С	0.167	0.187	4.25	4.75	G	0.035	0.056	0.90	1.41
D	0.078	0.103	1.99	2.61	Н	0.207	0.215	5.26	5.46

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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