



3.0Amp. Surface Mount Schottky Barrier Diodes

SK32SB thru SK3BSB

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, JEDEC DO-214AA/SMB.
- Terminals: Solder plated, solderable per MIL-STD-750 method 2026.
- Polarity: Indicated by cathode band.
- Mounting position: Any.
- Weight: 0.093 gram.

Maximum Ratings and Electrical Characteristics

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

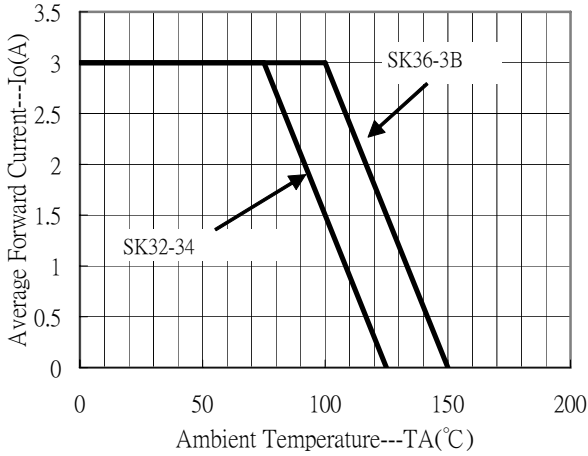
Parameter	Conditions	Symbols	SK32 SB	SK33 SB	SK34 SB	SK36 SB	SK3B SB	Units
Repetitive peak reverse voltage		V _{RRM}	20	30	40	60	100	V
Maximum RMS voltage		V _{RMS}	14	21	28	42	70	V
Maximum DC blocking voltage		V _R	20	30	40	60	100	V
Maximum instantaneous forward voltage	I _F =3A (Note 1)	V _F	0.475	0.5	0.5	0.7	0.85	V
Maximum 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}	100					A
Maximum DC reverse current	V _R =V _{RRM} , T _A =25°C (Note 1)	I _R	0.5					mA
	V _R =V _{RRM} , T _A =125°C (Note 1)		20					mA
Maximum thermal resistance, Junction to ambient (Note 2)		R _{th,JA}	40 (typ)					°C/W
Diode junction capacitance	f=1MHz and applied 4V reverse voltage	C _J	50 (typ)					pF
Storage temperature		T _{stg}	-65~+150					°C
Operating temperature		T _J	-55~+125			-55~+150		°C

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

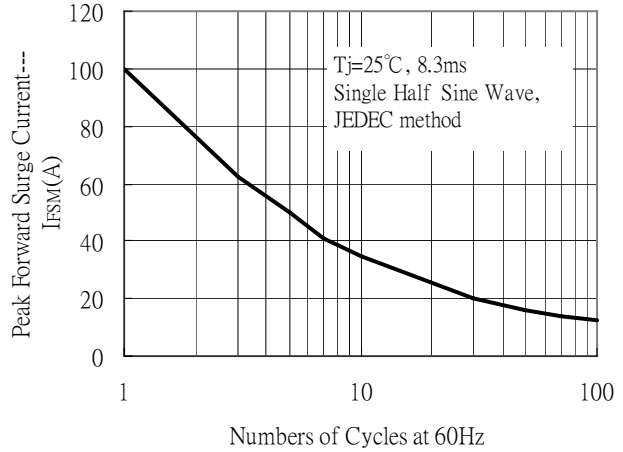
2.Mounted on PCB with 0.2"×0.2"mm² (0.5mm×0.5mm) copper pad area.

Characteristic Curves

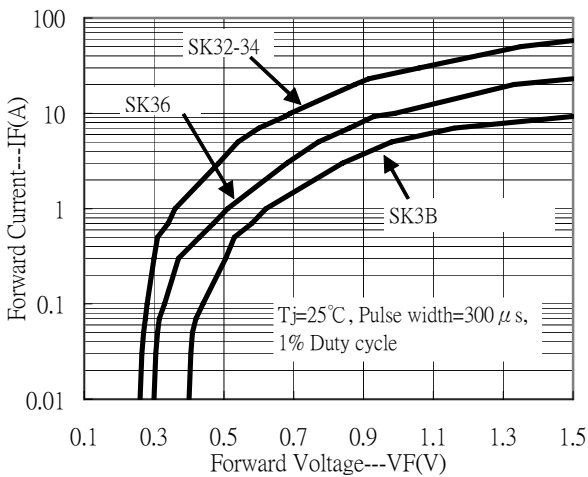
Forward Current Derating Curve



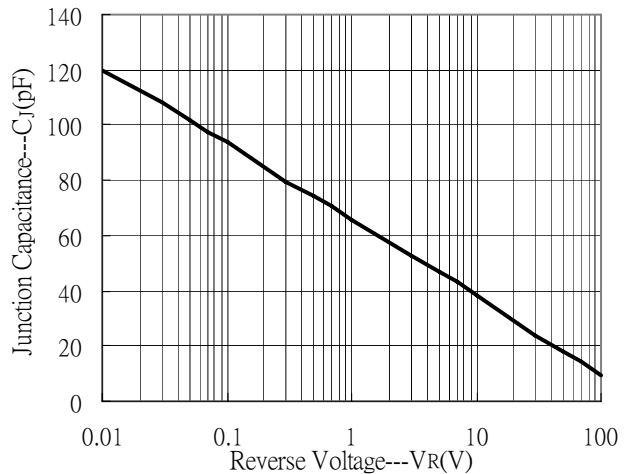
Maximum Non-Repetitive Forward Surge Current



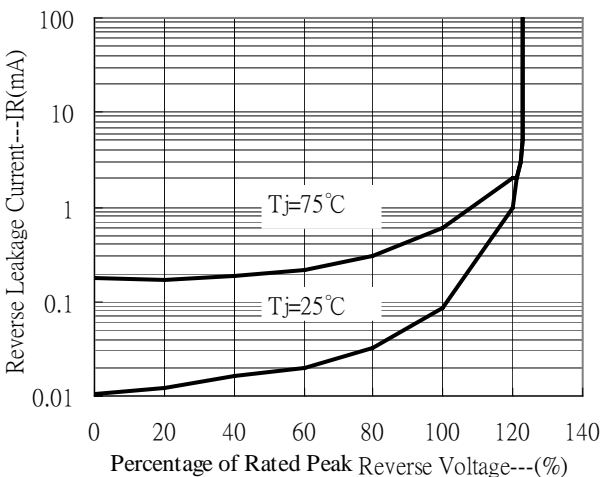
Forward Current vs Forward Voltage



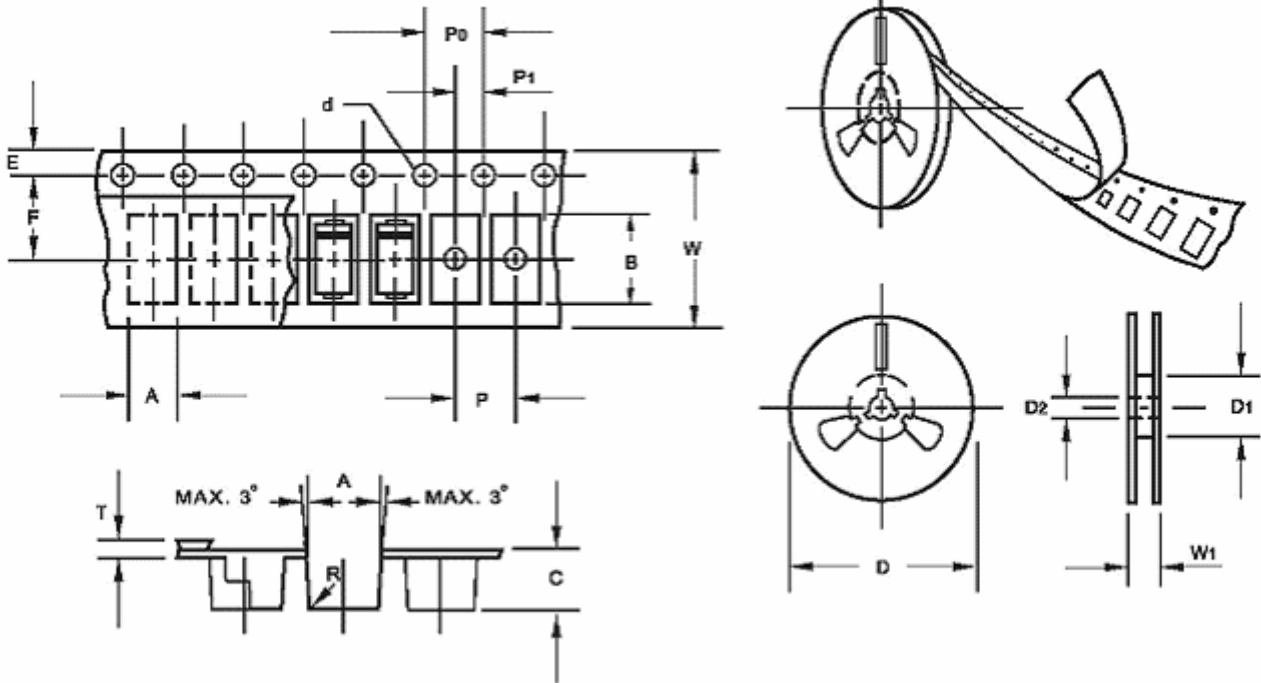
Junction Capacitance vs Reverse Voltage



Reverse Leakage Current vs Reverse Voltage



Taping Reel Dimension



unit : mm

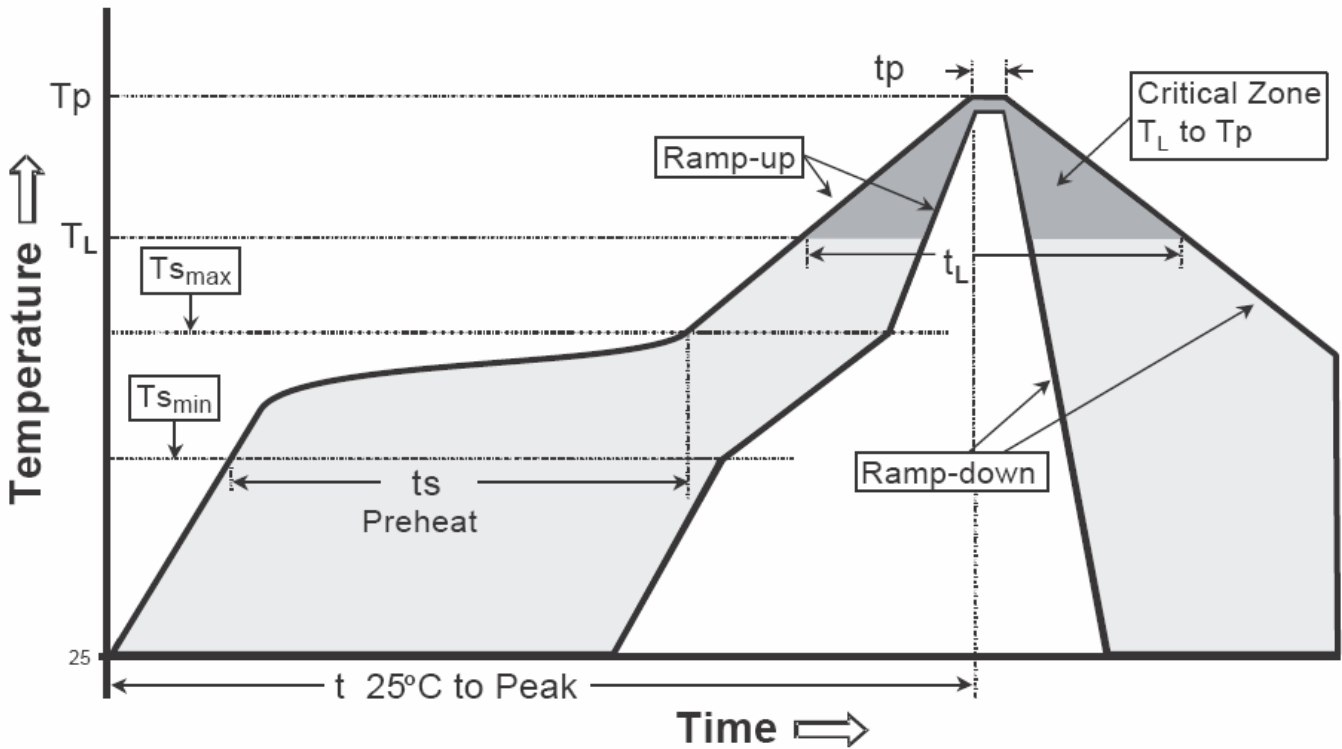
Item	Tolerance	Symbol	
Carrier width	0.10	A	SEE NOTE 2
Carrier length	0.10	B	
Carrier depth	0.10	C	
Sprocket hole	0.10	d	1.50
13" Reel outside diameter	2.00	D	330.0
13" Reel inner diameter	min.	D1	50.0
7" Reel outside diameter	2.00	D	178.0
7" Reel inner diameter	min.	D1	62.0
Feed hole diameter	0.50	D2	13.00
Sprocket hole position	0.10	E	1.75
Punch hole position	0.10	F	5.50
Punch hole pitch	0.10	P	8.00
Sprocket hole pitch	0.10	P0	4.00
Embossment center	0.10	P1	2.00
Tape width	0.30	W	12.00
Reel width	1.00	W1	16.80

NOTE: 1. Devices are packed in accordance with EIA standard RS-481-A and specification given above

2. A, B, and C are determined by the maximum dimensions of the component size.

The clearance between the component and the cavity must be within
 0.05mm (0.002") min. to 0.5mm (0.02") max. for 8mm tape and 12mm tape,
 0.15mm (0.066") min. to 0.90mm (0.035") max. for 16mm tape and
 0.15mm (0.066") min. to 1.0mm (0.59") max. for 24mm tape.

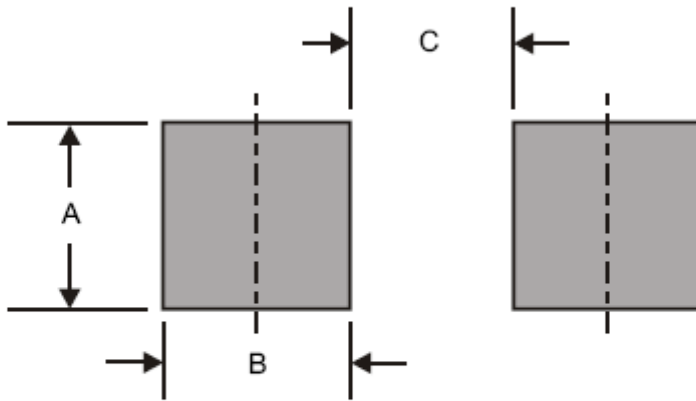
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(T _{s min})	100°C	150°C
-Temperature Max(T _{s max})	150°C	200°C
-Time(t _{s min} to t _{s max})	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (T _L)	183°C	217°C
- Time (t _L)	60-150 seconds	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.

Recommended Footprint



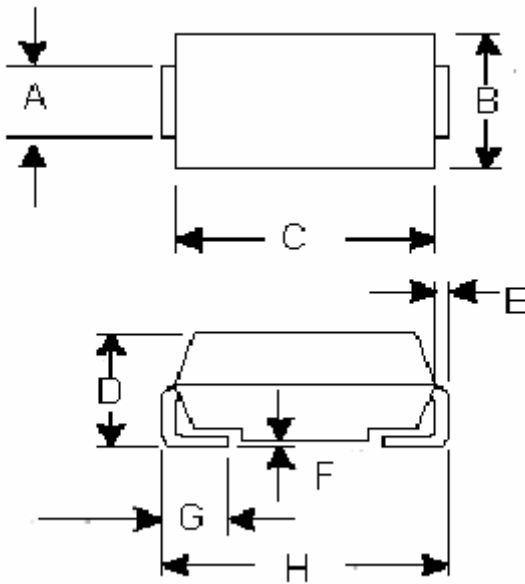
Dimensions in inches and (millimeters)

DIM	Inches	Millimeters
	Typ	Typ
A	0.142	3.60
B	0.059	1.50
C	0.118	3.00

Ordering Information

Device	Package	Shipping	Marking
SK32SB	SMB	3000 pcs / Tape & Reel	SK32
SK33SB	SMB	3000 pcs / Tape & Reel	SK33
SK34SB	SMB	3000 pcs / Tape & Reel	SK34
SK36SB	SMB	3000 pcs / Tape & Reel	SK36
SK3BSB	SMB	3000 pcs / Tape & Reel	SK3B

SMB/DO-214AA Dimension



Marking Code :

SK32SB	SK33SB	SK34SB
SK32	SK33	SK34

SK36SB	SK3BSB	
SK36	SK3B	

SMB/DO-214AA Plastic
 Surface Mounted Package
 CYStek Package Code : SB

*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.075	0.083	1.91	2.11	E	0.006	0.012	0.152	0.305
B	0.130	0.155	3.30	3.94	F	0.002	0.008	0.051	0.203
C	0.160	0.185	4.06	4.70	G	0.030	0.060	0.76	1.52
D	0.083	0.096	2.13	2.44	H	0.200	0.220	5.08	5.59

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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