3.0Amp. Surface Mount Schottky Barrier Diodes

SK3XSA Series

Features

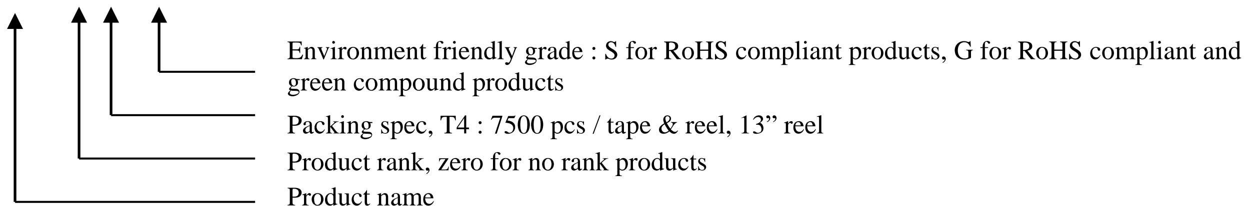
- For surface mounted applications.
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- Low leakage current
- High surge capability
- High temperature soldering: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

Mechanical Data

- Case: SMA/DO-214AC molded plastic.
- Terminals: Solder plated, solderable per MIL-STD-750 method 2026
- Polarity: Indicated by cathode band.
- Packaging: 12mm tape per EIA STD RS-481.
- Weight: approx. 0.064 gram, 0.002 ounce

Ordering Information

Device	Package	Shipping	Marking
SK32SA-0-T4-G	SMA (Pb-free lead plating and halogen-free package)	7500 pcs / Tape & Reel	SK32
SK34SA-0-T4-G			SK34
SK36SA-0-T4-G			SK36
SK38SA-0-T4-G			SK38
SK3BSA-0-T4-G			SK3B



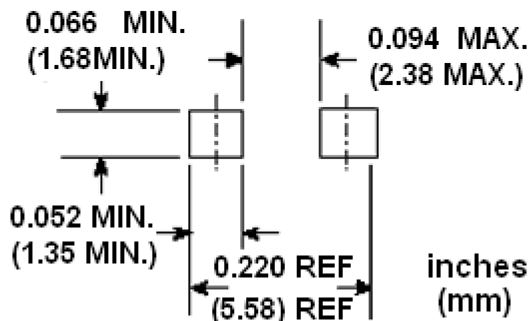
Maximum Ratings and Electrical Characteristics

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

Parameter	Symbol	Type					Units
		SK32	SK34	SK36	SK38	SK3B	
Repetitive peak reverse voltage	V_{RRM}	20	40	60	80	100	V
Maximum RMS voltage	V_{RMS}	14	28	42	56	70	V
Maximum DC blocking voltage	V_R	20	40	60	80	100	V
Maximum instantaneous forward voltage, IF=3A (Note 1)	V_F	0.5	0.5	0.75	0.85	0.85	V
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}	80					A
Maximum DC reverse current $V_R=V_{RRM}, T_A=25$℃ (Note 1) $V_R=V_{RRM}, T_A=125$℃ (Note 1)	I_R	0.5 10					mA mA
Maximum thermal resistance, Junction to ambient(Note 2)	$R_{th,JA}$	65 (typ)					℃/W
Typical thermal resistance, junction to case	$R_{th,\,JC}$	14					°C/W
Power Dissipation, $T_A=25$°C	P_D	1.5					W
Power Dissipation, $T_C=25$°C	P_D	7					W
Diode junction capacitance @ f=1MHz and applied 4V reverse voltage	C_J	200 (typ)					pF
Storage temperature	Tstg	-55 ~ +150					℃
Operating temperature	T_J	-55 ~ +125					℃

Notes : 1.Pulse test, pulse width=300 μ sec, 2% duty cycle
2.Mounted on PCB with 14mm² (0.013mm thickness) copper pad area.

Recommended soldering footprint



Characteristic Curves

FIG.1 - FORWARD CURRENT DERATING CURVE

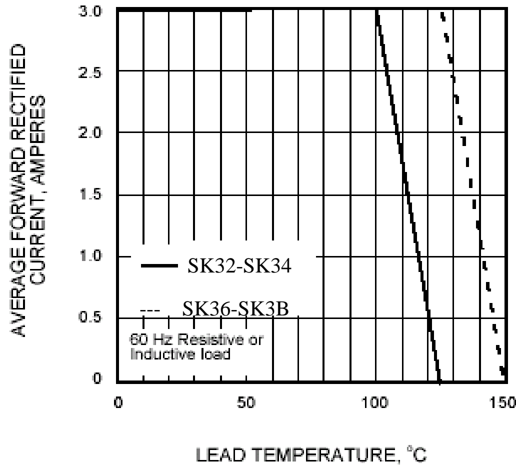


FIG.2 - MAXIMUM NON-REPETITIVE 9 PEAK FORWARD SURGE CURRENT

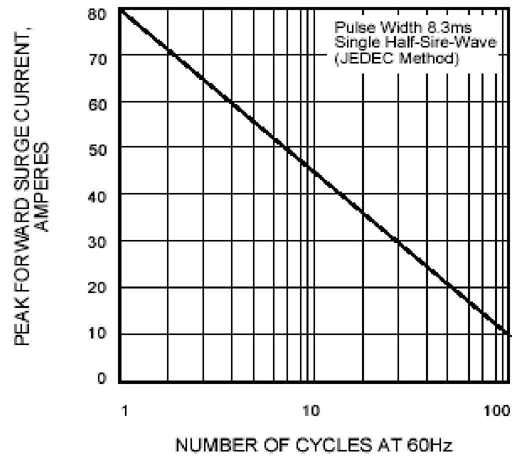


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

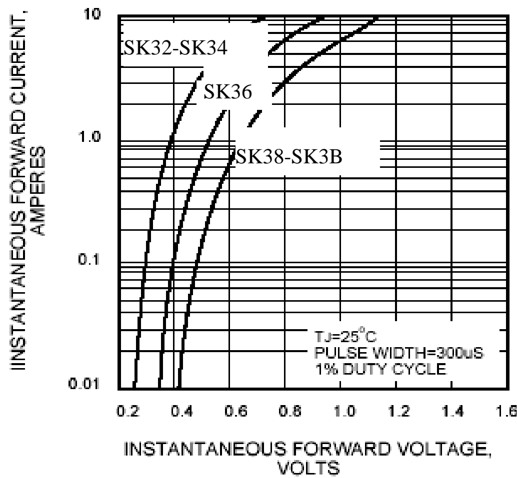


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

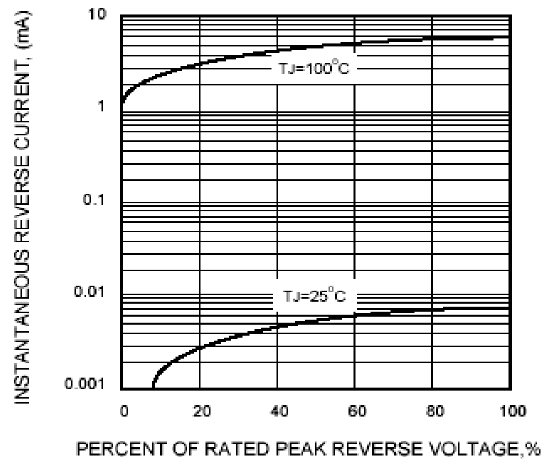
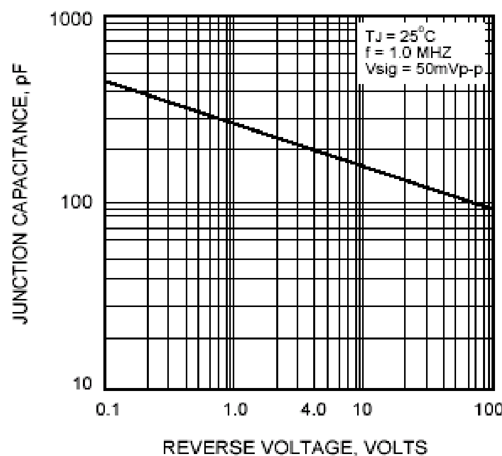
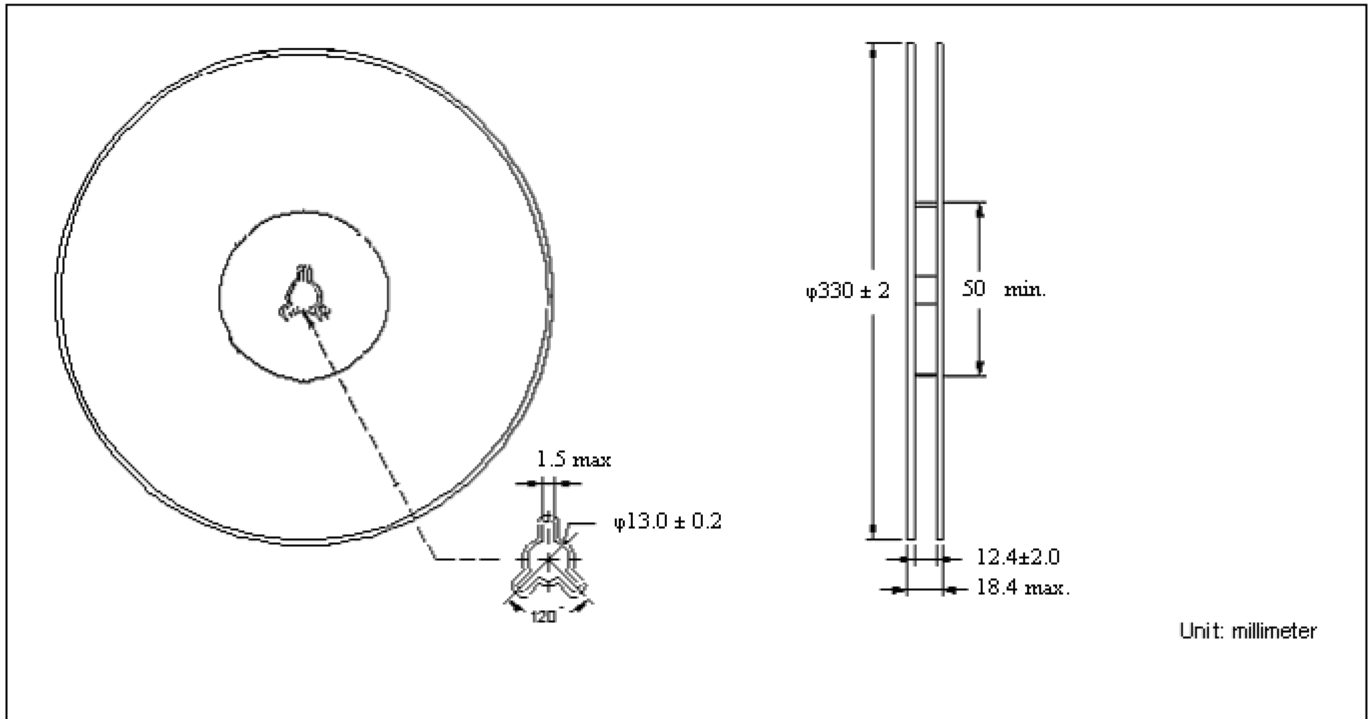


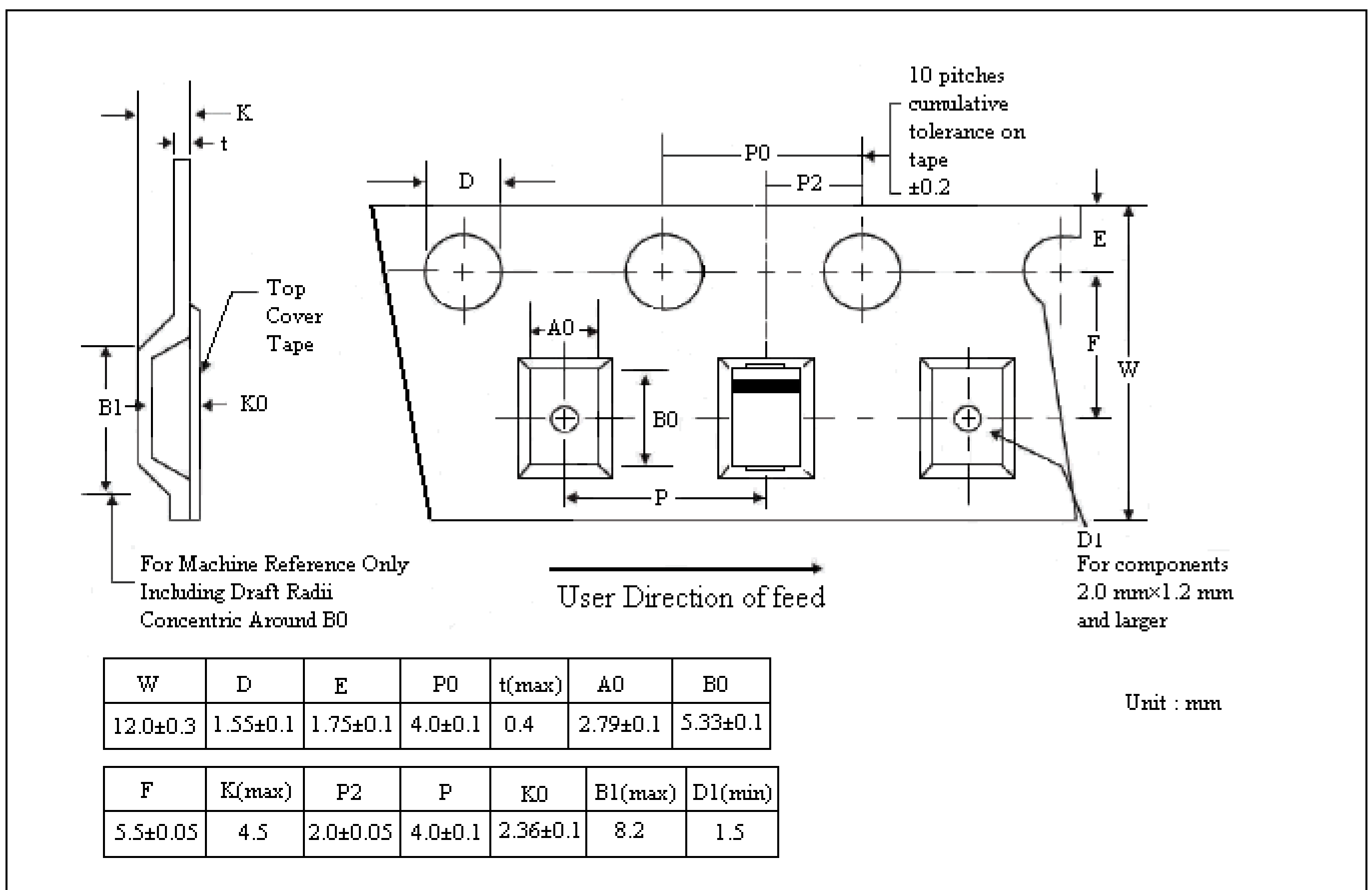
FIG.5 - TYPICAL JUNCTION CAPACITANCE



Reel Dimension



Carrier Tape Dimension



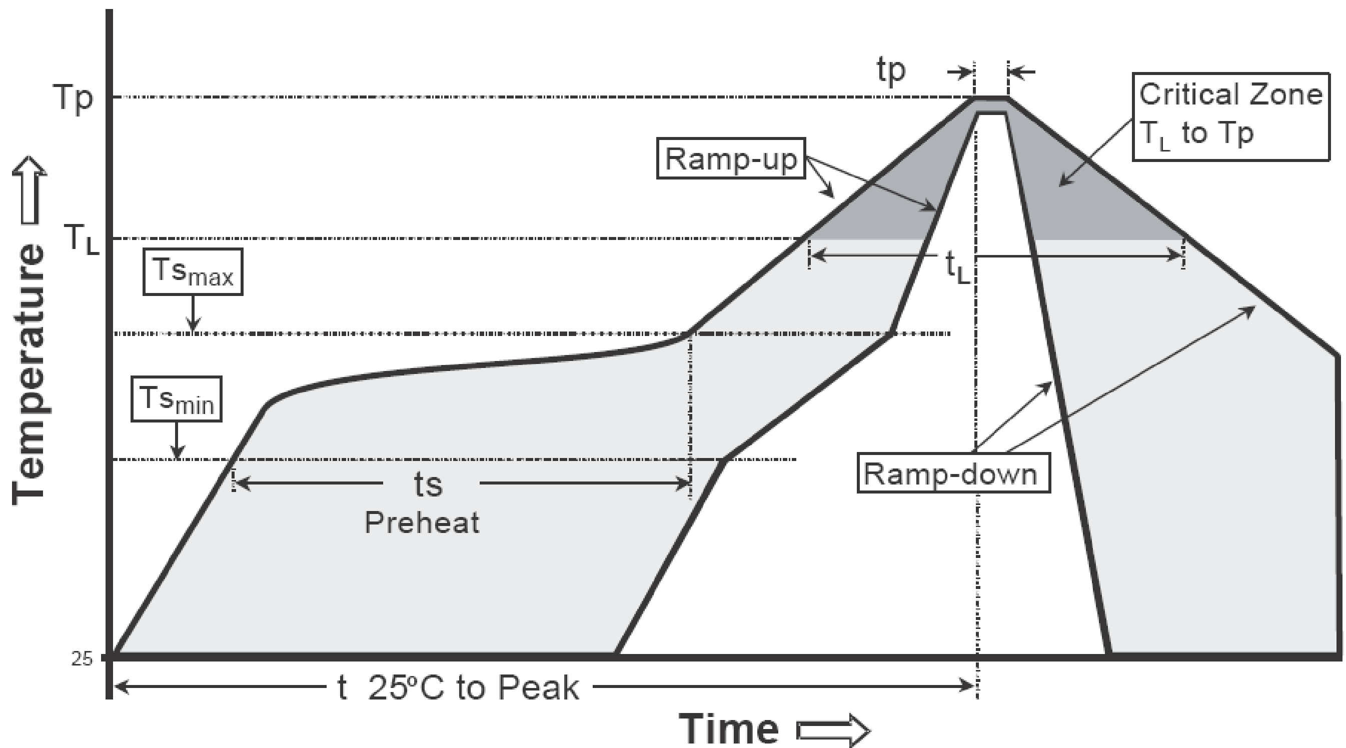
W	D	E	P0	t(max)	A0	B0
12.0±0.3	1.55±0.1	1.75±0.1	4.0±0.1	0.4	2.79±0.1	5.33±0.1

F	K(max)	P2	P	K0	B1(max)	D1(min)
5.5±0.05	4.5	2.0±0.05	4.0±0.1	2.36±0.1	8.2	1.5

Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

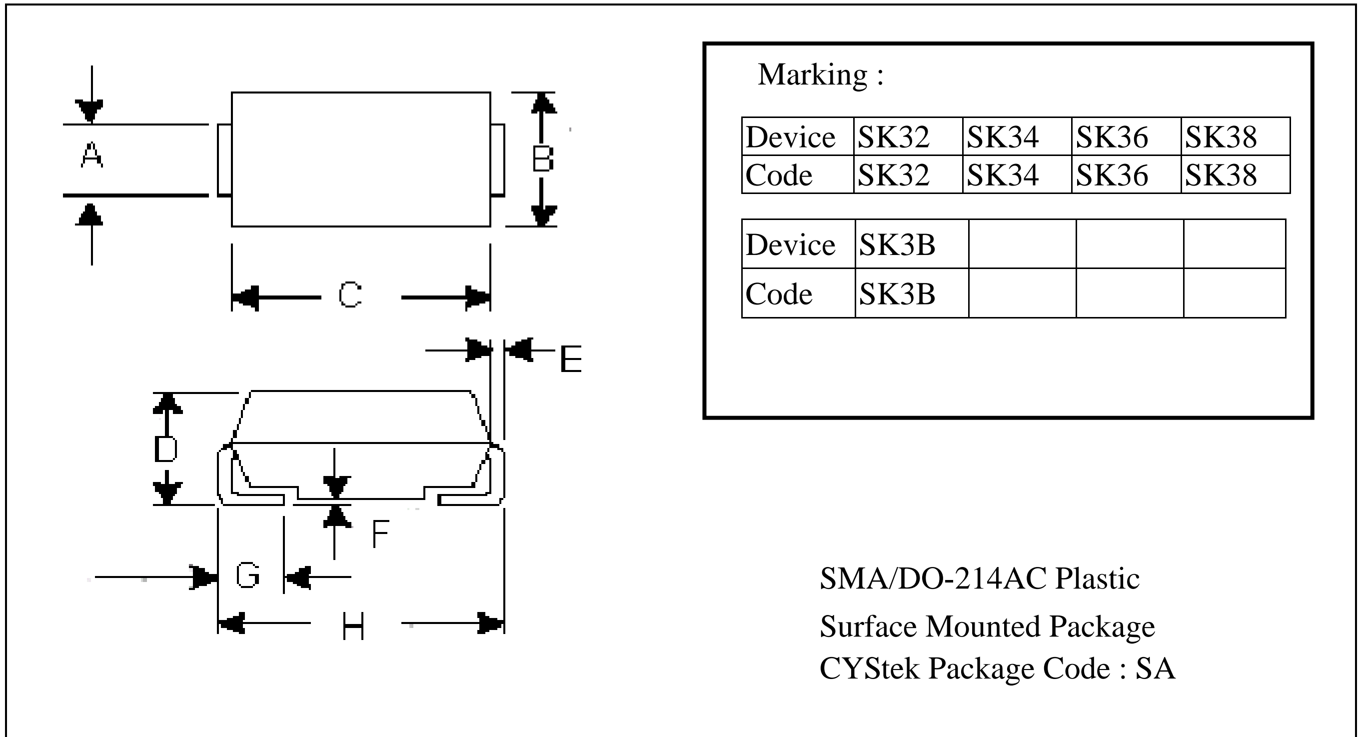
Recommended temperature profile for IR reflow



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 (TL) − Time (tL)	183°C 60-150 seconds	217°C 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.

SMA Dimension



*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.052	0.062	1.32	1.60	E	0.006	0.012	0.15	0.31
B	0.098	0.114	2.50	2.90	F	0.002	0.008	0.05	0.20
C	0.154	0.181	3.90	4.60	G	0.030	0.060	0.76	1.52
D	0.067	0.091	1.70	2.30	H	0.188	0.208	4.80	5.28

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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