MOSPEC

Surface Mount Schottky Rectifier SK310

Features

- ◆ Low profile package
- ◆ Ideal for automated placement
- ◆ Guardring for overvoltage protection
- ◆ Low power losses, high efficiency
- ◆ High forward surge capability

Mechanical Data

Case: DO-214AC(SMA) Molded plastic body

Terminals: Plated leads solderable per MIL-STD-750, Method 2026

Polarity: Cathode line denotes the cathode end

Mounting Position: Any

Maximum Ratings & Electrical Characteristics

Ratings at TA = 25°C unless otherwise specified

Characteristic	Symbol	SK32	SK34	SK36	SK38	SK310	SK315	SK320	Units
Peak repetitive reverse voltage	VRRM	20	40	60	80	100	150	200	V
RMS reverse voltage	VRMS	14	28	42	56	70	105	140	V
DC blocking voltage	VDC	20	40	60	80	100	150	200	V
Maximum average forward output current	IF(AV)	3							A
Peak forward surge current,8.3ms single half-sine-wave, @TJ = 25°C	IFSM	80							A
Rating for fusing(t<8.3ms)	I2t	26.56							A2sec
Maximum instantaneous forward voltage @ 3A	VF	0.55		0.7	0.85		0.9		V
Maximum Reverse current Rated VR @TA =25°C	IR	0.5			0.1				mA
Maximum Reverse current Rated VR @TA =100°C	IR	20			5				mA

Thermal Characteristics

Characteristic	Symbol	SK32A	SK34	SK36	SK38	SK310	SK315	SK320	Units
Typical thermal resistance (Note 1)	R ΘJA	55							°C /W
	R ΘJL	17							°C /W
Operating junction temperature range	TJ	-55~+125			-55~+150				°C
Storage temperature range	TSTG	-55~+150							°C

Note:

(1) Units mounted on P.C.B. with 5.0 x 5.0 mm land areas.

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Ratings and Characteristic Curves (T_A=25°C unless otherwise noted)

Fig.1-Forward Current Derating Curve

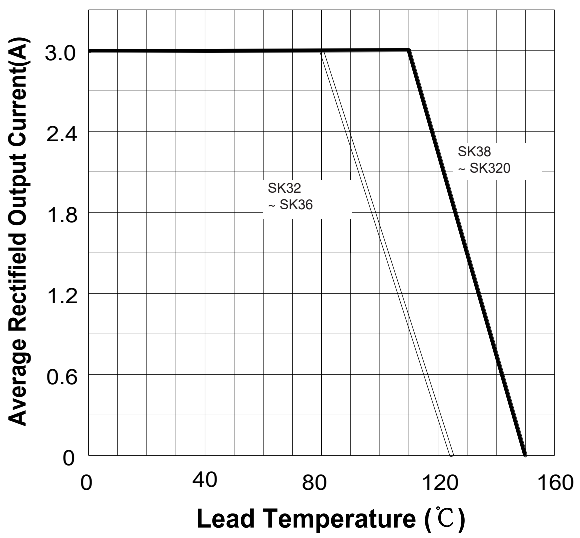


Fig.2- Surge Current Derating Curve

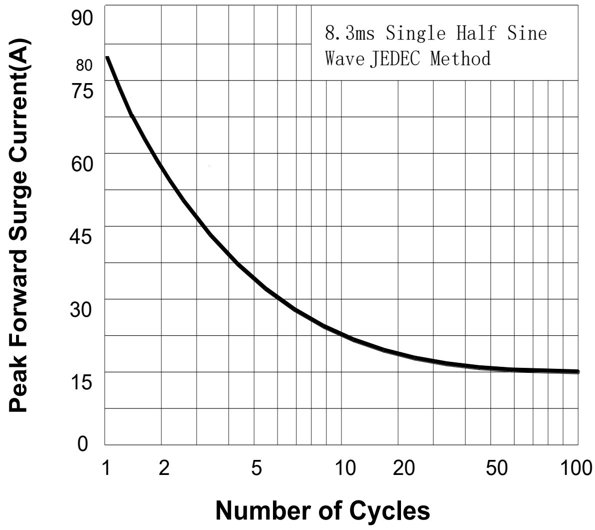


Fig.3- Typical Forward Voltage Characteristic

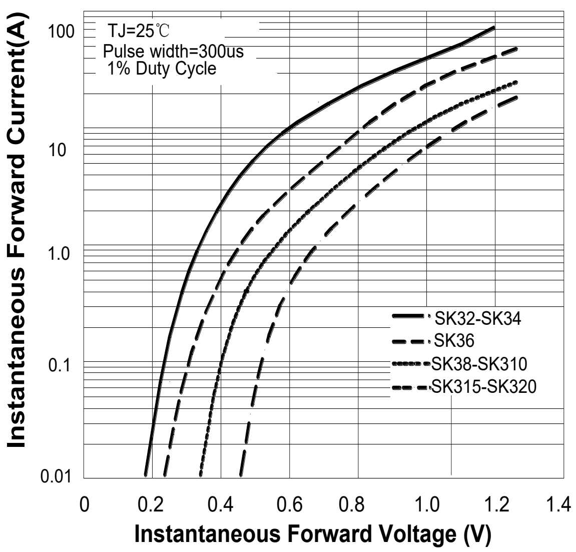
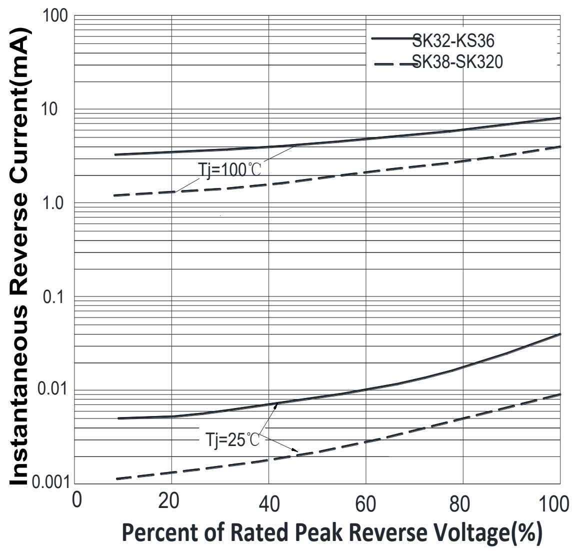


Fig.4- Typical Reverse Characteristic



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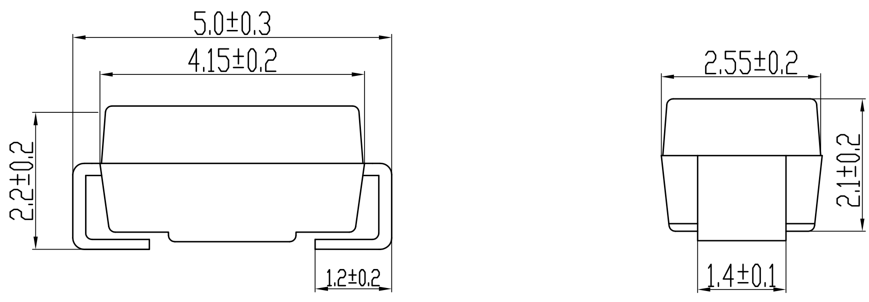
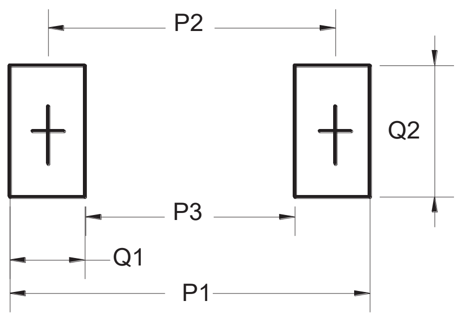
Package Outline Dimensions(unit:mm)

DO-214AC (SMA)



Mounting Pad Layout(unit:mm)



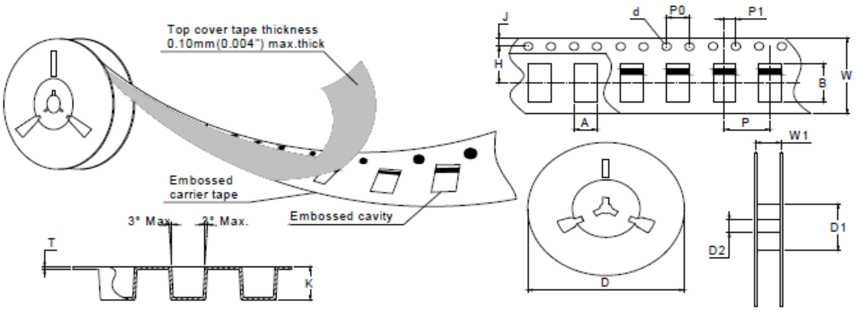
Dim	Millimeters
P1	6.50
P2	4.00
P3	1.50
Q1	2.50
Q2	1.70

Ordering Information

Part No.	Marking	Package	Shipping
SK32	SK32	SMA	5000PCS /Tape&Reel
SK34	SK34	SMA	5000PCS /Tape&Reel
SK36	SK36	SMA	5000PCS /Tape&Reel
SK38	SK38	SMA	5000PCS /Tape&Reel
SK310	SK310	SMA	5000PCS /Tape&Reel
SK315	SK315	SMA	5000PCS /Tape&Reel
SK320	SK320	SMA	5001PCS /Tape&Reel

REEL PACKING:

OUTLINE	PACKING METHOD	PCS/REEL	PCS/BOX	PCS/CARTON	INNER BOX SIZE(MM)	CARTON SIZE (MM)	SINGLE BOX WEIGHT(KG)	GROSS WEIGHT (KG)
SMA(13")	Reel Packing(13")	7500	15000	120000	340*340*38	360*330*370	1.68	14.18
SMA(11")	Reel Packing(11")	5000	10000	100000	290*290*41.5	310*310*440	1.15	12.25
SMAF(11")	Reel Packing(11")	5000	10000	100000	290*290*41.5	310*310*440	0.80	8.75
SMAF(13")	Reel Packing(13")	10000	20000	160000	340*340*39.5	360*360*325	1.35	11.55
SMB	Reel Packing(13")	3000	6000	48000	340*340*39.5	360*360*325	1.25	10.75
SMC	Reel Packing(13")	3000	6000	42000	340*340*46.5	360*360*350	2.2	16.22
SMP	Reel Packing(13")	3000	6000	42000	340*340*46.5	360*360*350	2.26	16.64
ABS	Reel Packing(13")	5000	15000	75000	340*340*59	360*360*325	2.55	13.5
MBS	Reel Packing(13")	3000	9000	45000	340*340*59	360*360*325	2.00	10.75
MBF	Reel Packing(13")	5000	15000	75000	340*340*59	360*360*325	2.30	12.25
DFS	Reel Packing(13")	1500	4500	18000	340*340*70	360*360*325	2.50	10.75



ITEM	SYMBOL	SMA	SMB	SMC	SMP	SMAF	MBF	MBS	ABS	DFS
Carrier width	A	3.0Typ.	3.80Typ.	6.05Typ.	6.05Typ.	3.00Typ.	5.05Typ.	5.02Typ.	5.31Typ.	8.70Typ.
Carrier length	B	5.4Typ.	5.4Typ.	8.31Typ.	8.70Typ.	5.20Typ.	7.20Typ.	7.22Typ.	6.80Typ.	10.41Typ.
Sprocket hole	d	ø1.55Typ.	ø1.55Typ.	ø1.55Typ.	ø1.55Typ.	ø1.55Typ.	ø1.55Typ.	ø1.55Typ.	ø1.55Typ.	ø1.55Typ.
Reel outer diameter	D	330.0/280Typ.	330Typ.	330Typ.	330Typ.	330Typ.	330Typ.	330Typ.	330Typ.	330Typ.
Reel inner diameter	D1	50.0Min	50.0Min	50.0Min	50.0Min	50.0Min	50.0Min	50.0Min	50.0Min	50.0Min
Feed hole diameter	D2	13.0Typ.	13.0Typ.	13.0Typ.	13.0Typ.	13.0Typ.	13.0Typ.	13.0Typ.	13.0Typ.	13.0Typ.
Sprocket hole position	J	1.75Typ.	1.75Typ.	1.75Typ.	1.75Typ.	1.75Typ.	1.75Typ.	1.75Typ.	1.75Typ.	1.75Typ.
Punch hole position	H	5.55Typ.	5.55Typ.	7.50Typ.	7.50Typ.	5.55Typ.	5.50Typ.	5.50Typ.	5.50Typ.	7.50Typ.
Carrier depth	K	2.45Typ.	2.45Typ.	2.54Typ.	2.54Typ.	1.20Typ.	1.60Typ.	3.60Typ.	1.59Typ.	2.60Typ.
Punch hole pitch	P	4.00Typ.	8.00Typ.	8.00Typ.	8.00Typ.	4.00Typ.	8.00Typ.	8.00Typ.	8.00Typ.	12.00Typ.
Sprocket hole pitch	P0	4.00Typ.	4.00Typ.	4.00Typ.	4.00Typ.	4.00Typ.	4.00Typ.	4.00Typ.	4.00Typ.	4.00Typ.
Embossment center	P1	2.00Typ.	2.00Typ.	2.00Typ.	2.00Typ.	2.00Typ.	2.00Typ.	2.00Typ.	2.00Typ.	2.00Typ.
Overall tape thickness	T	0.25 Typ.	0.25 Typ.	0.25Typ.	0.25Typ.	0.25Typ.	0.30Typ.	0.30Typ.	0.30Typ.	0.30Typ.
Tape width	W	12.0Typ.	12.0Typ.	16.0Typ.	16.0Typ.	12.0Typ.	12.0Typ.	12.0Typ.	12.0Typ.	16.0Typ.
Reel width	W1	12.4Min	12.4Min	16.5 Min	16.5 Min	12.4 Min.	12.4Min.	12.4Min.	12.4Min.	16.5 Min

SOLDER_REFLOW_PROFILE

Table 4-2 Pb-free Process – Package Classification Reflow Temperatures

Package Thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >2000
<1.6 mm	260 +0 °C *	260 +0 °C *	260 +0 °C *
1.6 mm - 2.5 mm	260 +0 °C *	250 +0 °C *	245 +0 °C *
≥2.5 mm	250 +0 °C *	245 +0 °C *	245 +0 °C *

* Tolerance: The device manufacturer/supplier **shall** assure process compatibility up to and including the stated classification temperature (this means Peak reflow temperature +0 °C. For example 260 °C+0°C) at the rated MSL level.

Table 5-2 Classification Reflow Profiles

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average Ramp-Up Rate (Ts_{max} 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/Classification Temperature (Tp)	See Table 4.1	See Table 4.2
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 1: All temperatures refer to topside of the package, measured on the package body surface.

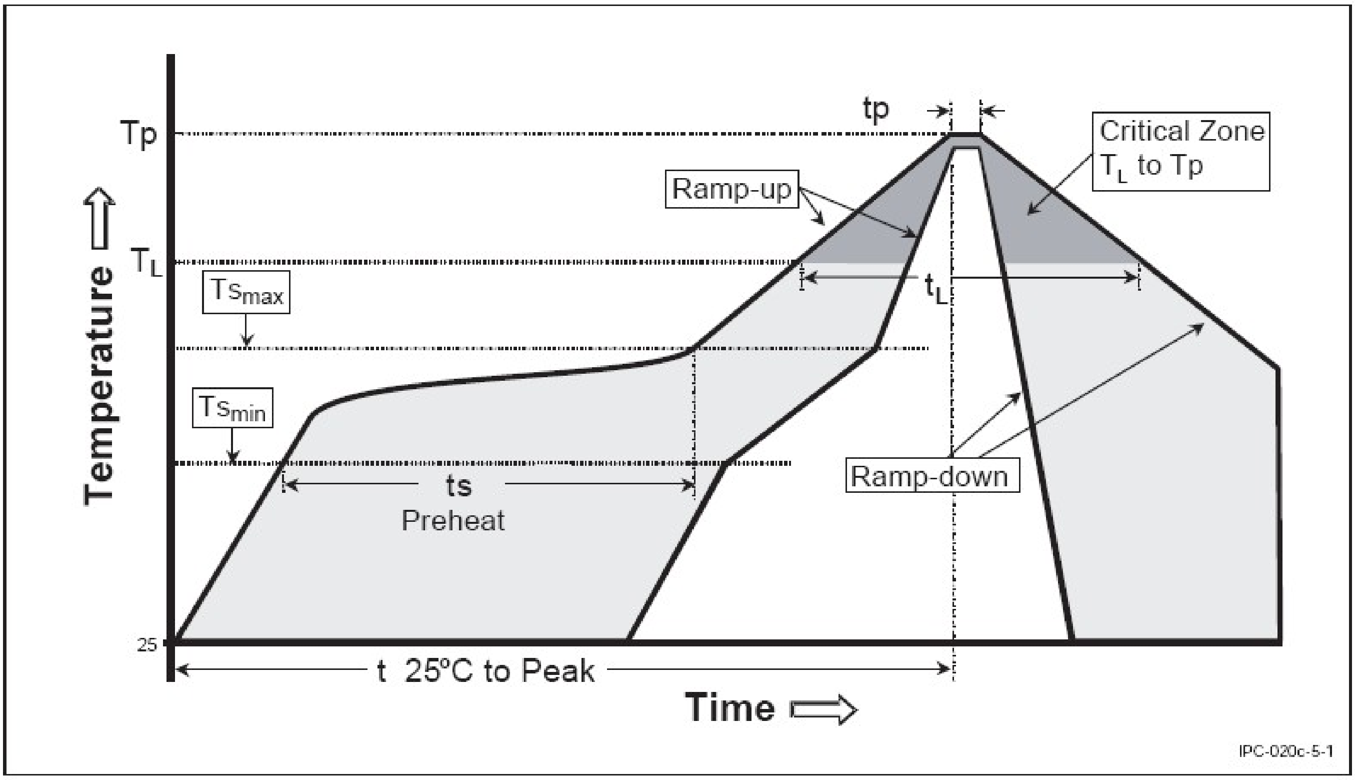


Figure 5-1 Classification Reflow Profile

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