

### Characteristics

$I_F$	5	A
$V_{RRM}$	20~100	V
$I_{FSM}$	125	A
$V_F$	0.50~0.85	V

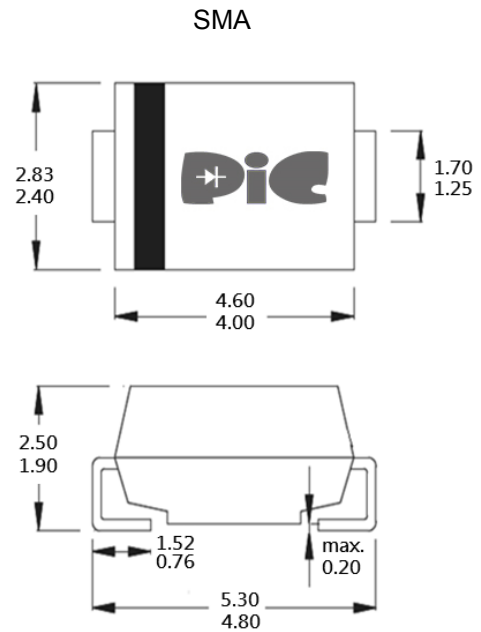
### Features

- Low Forward Voltage
- Epitaxial Construction with Oxide Passivation
- Surge Overload Rating to 125A Peak
- Low Power Loss
- Fast Switching
- Ideally Suited for Use in High Frequency SMPS, Inverters and As Free Wheeling Diodes

### Mechanical Data

- Terminals: Solder Plated, Solderable Per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.064 grams (approx.)

### Package Outline Dimensions



Dimensions in inches and millimeters

### Maximum Ratings (TA=25°C unless otherwise noted)

Parameter	Symbol	SK52	SK53	SK54	SK55	SK56	SK58	SK59	SK510	UNITS
Peak Repetitive Reverse Voltage	$V_{RRM}$									Volts
Working Peak Reverse Voltage	$V_{RWM}$	20	30	40	50	60	80	90	100	Volts
DC Blocking Voltage	$V_R$									Volts
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	35	42	56	63	70	Volts
Maximum average forward rectified current	$I_F$	5.0								Amps
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDC Method)	$I_{FSM}$	125								Amps
Forward Voltage $I_F = 5.0A$	$V_F$	0.50			0.75		0.85			Volts
Peak Reverse Current $T_J = 25^\circ C$	$I_R$	0.5								mA
At Rated DC Blocking Voltage $T_J = 100^\circ C$		20								
Typ. Junction Capacitance (Note 2)	$C_J$	500				380				pF
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	70								°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	18								
Operating Temperature Range	$T_J$	-55 to +125				-55 to +150				°C
Storage Temperature Range	$T_{STG}$	-55 to +150								°C

Notes:

- (1) Mounted on FR-4 PCB with 8.0 X 8.0mm copper pads.
- (2) Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.

### Rating and Characteristics Curves

Fig. 1 Forward Current Derating Curve

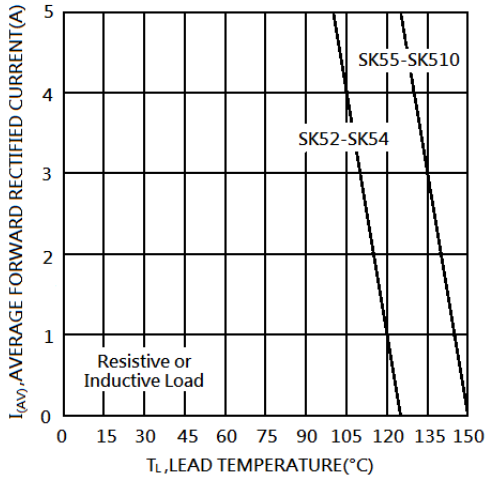


Fig. 2 Typ. Forward Characteristics

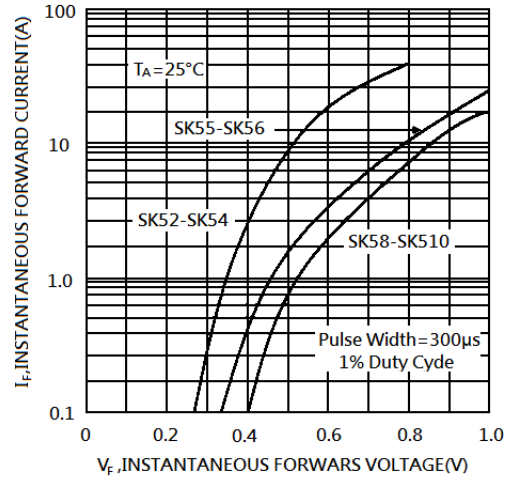


Fig. 3 Forward Surge Current Derating Curve

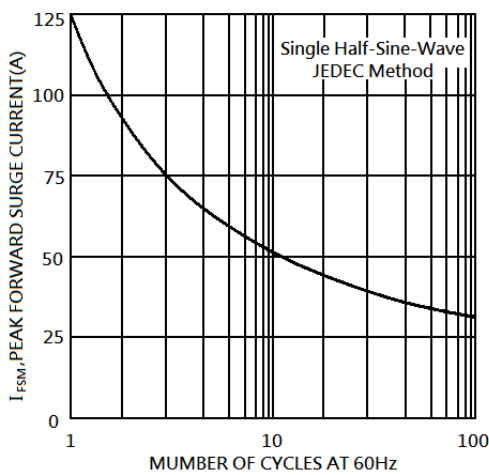


Fig. 4 Typical Reverse Characteristics

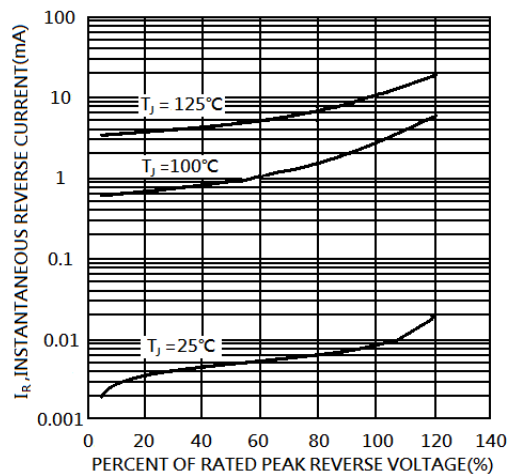
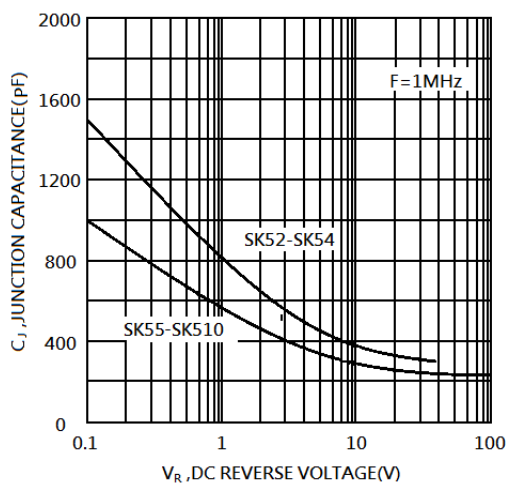
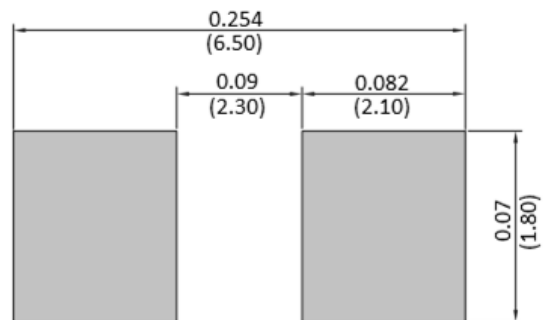


Fig. 5 Typ. Junction Capacitance



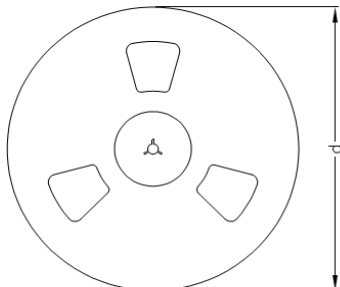
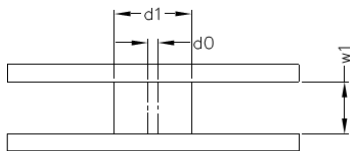
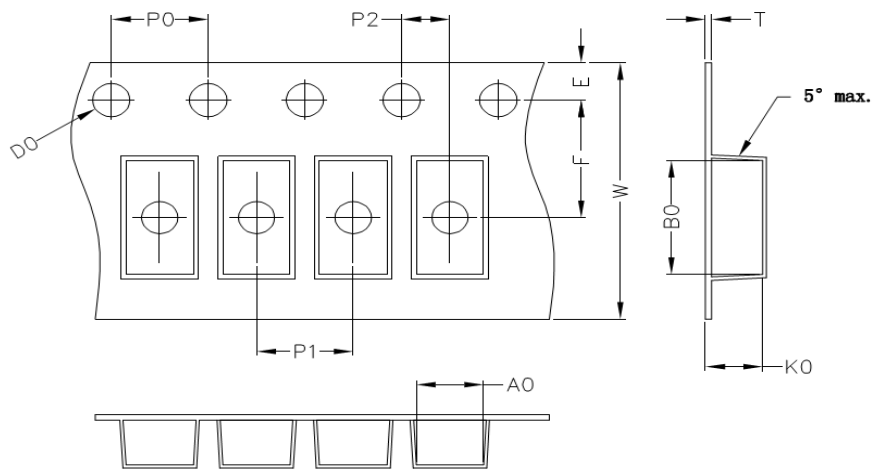
### Suggested Pad Layout



Unit: inch (mm)

### Packaging Specifications

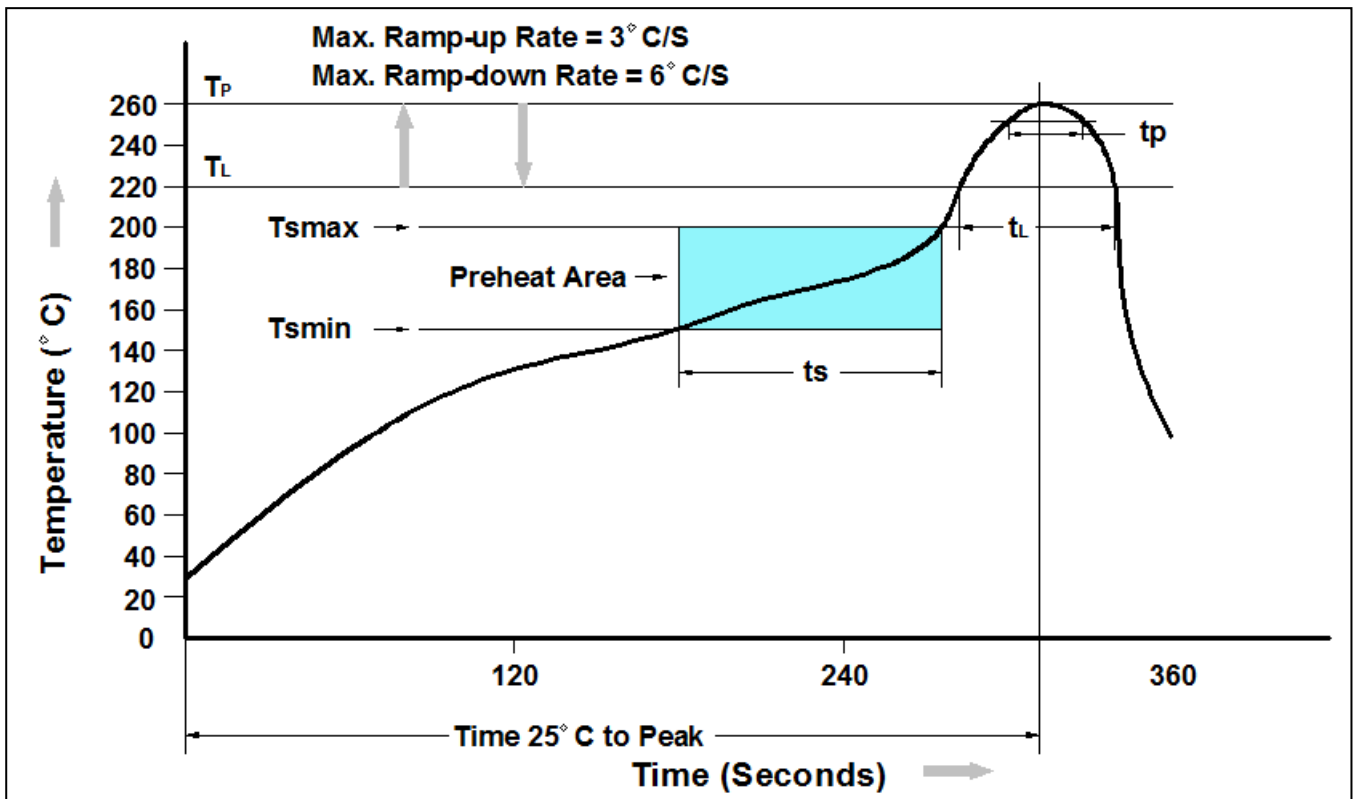
Package	A0 (mm)	B0 (mm)	K0 (mm)	D0 (mm)	E (mm)	F (mm)	P0 (mm)	P1 (mm)	P2 (mm)	T (mm)	W (mm)
SMA	2.8±0.1	5.33±0.1	2.36±0.1	1.55±0.1	1.75±0.1	5.50±0.1	4.0±0.1	4.0±0.01	2±0.1	0.25±0.1	9.4±0.1
SMB	3.8±0.1	5.40±0.1	2.45±0.1	1.55±0.1	1.75±0.1	5.50±0.1	4.0±0.1	8.0±0.01	2±0.1	0.25±0.1	9.4±0.1
SMC	6.05±0.1	8.31±0.1	2.54±0.1	1.55±0.1	1.75±0.1	7.50±0.1	4.0±0.1	8.0±0.05	2±0.1	0.25±0.1	12±0.1



Package	D1 (mm)	D0 (mm)	W1 (mm)	D (mm)
SMA	75	13.5	13.5	330
SMB	75	13.5	13.5	330
SMC	75	13.5	17.0	330

NOTE : The tolerance of reel is ±2mm

**Recommend IR Reflow Soldering Thermal Profile**



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T <sub>smin</sub> )	150°C
Temperature Max. (T <sub>smax</sub> )	200°C
Time (t <sub>s</sub> ) from (T <sub>smin</sub> to T <sub>smax</sub> )	60-120 seconds
Average Ramp-up Rate (t <sub>L</sub> to t <sub>P</sub> )	3°C/second max.
Liquidous Temperature (T <sub>L</sub> )	217°C
Time (t <sub>L</sub> ) Maintained Above (T <sub>L</sub> )	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (t <sub>P</sub> ) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (T <sub>P</sub> to T <sub>L</sub> )	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

**Ordering Information**

Part Number	Description	Quantity
SK52~SK510	SMA Reel	5000 pcs

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