

Primary Characteristics

I_F	1.0	A
V_{RRM}	50~1000	V
I_{FSM}	30	A
V_F	1.0~1.7	V

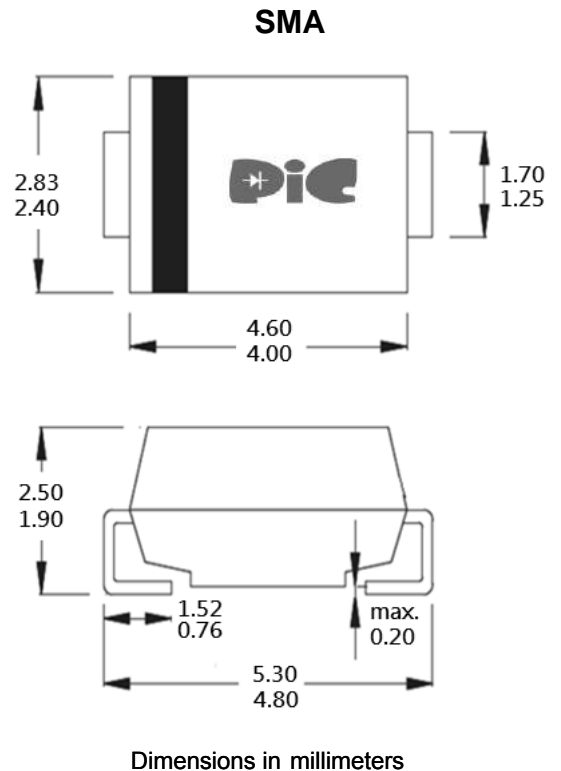
Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- For surface mounted applications
- Ultra fast switching for high efficiency
- Low reverse leakage
- Built-in strain relief, ideal for automated placement
- High forward surge current capability
- High temperature soldering guaranteed:
260 °C /10 seconds at terminals
- Glass passivated chip junction

Mechanical Data

- Case: JEDEC SMA molded plastic body
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Weight: Approx. 0.0023ounce, 0.07grams

Package Outline Dimensions



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

Rating at 25°C ambient temperature unless otherwise specified. Single phase half wave 60Hz, resistive or inductive load. For capacitive load current derate by 20%.

Parameter	Symbol	US1A	US1B	US1D	US1G	US1J	US1K	US1M	UNITS
Marking Code	-	US1A	US1B	US1D	US1G	US1J	US1K	US1M	-
Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	Volts
RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	Volts
DC Blocking Voltage	V_R	50	100	200	400	600	800	1000	Volts
Average Forward Current	$I_{F(AV)}$	1.0							Amps
Peak Forward Surge Current: 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30.0							Amps
Forward Voltage at 1.0A	V_F	1		1.4		1.7		Volts	
DC Reverse Current at Rated DC Blocking Voltage	I_R	5							μA
Typical Thermal Resistance (NOTE 1)	$R_{\theta JA}$	50							°C/W
Reverse recovery time (NOTE 2)	T_{rr}	50				75			ns
Operating junction and storage temperature range	T_J, T_{STG}	-55~+150							°C

Notes:

- (1) P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas
- (2) Reverse recovery condition $I_F=0.5A, I_R=1.0A, I_{rr}=0.25A$

Rating and Characteristics Curves

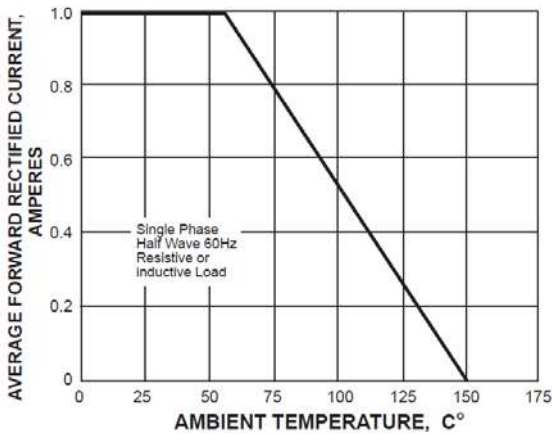


Fig. 1 Forward Current Derating Curve

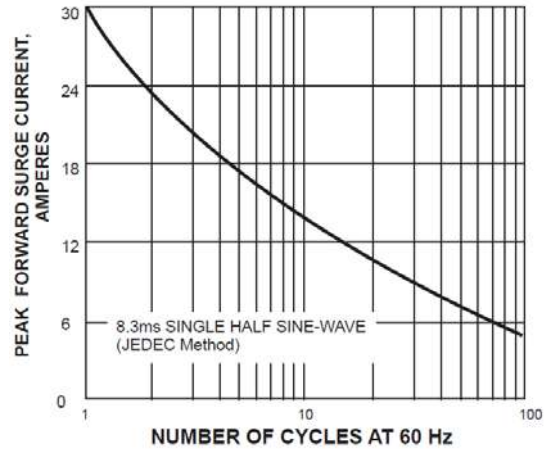


Fig. 2 Max Non-Repetitive Peak Forward Surge Current

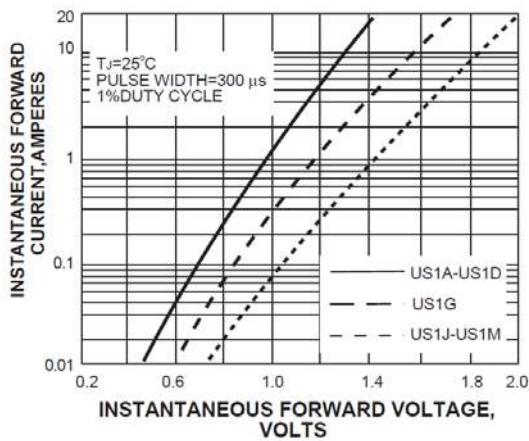


Fig. 3 Typical Instantaneous Forward Characteristics

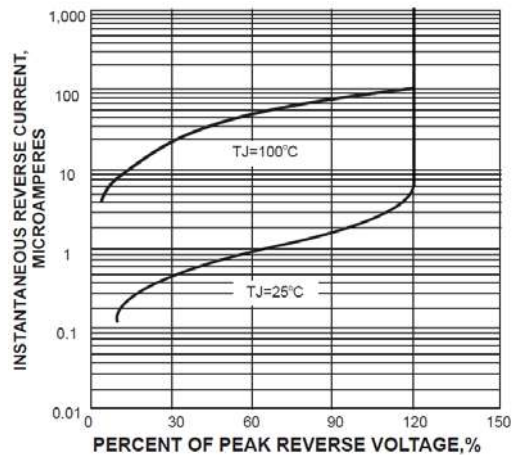


Fig. 4 Typical Reverse Characteristics

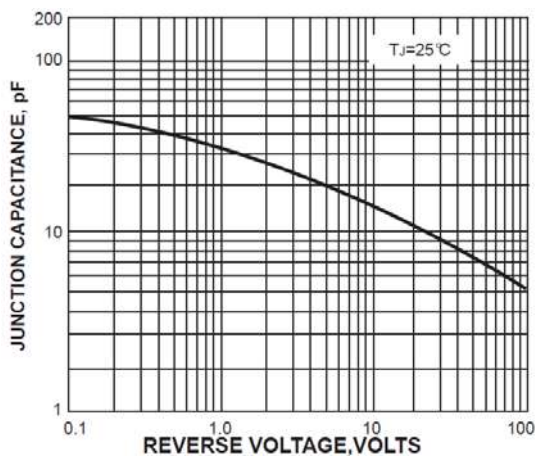


Fig. 5 Typical Junction Capacitance

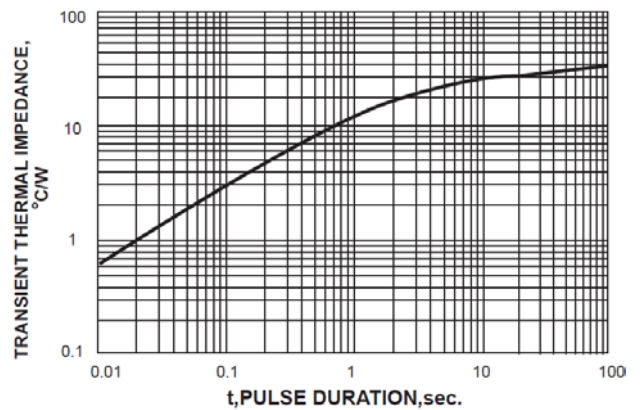
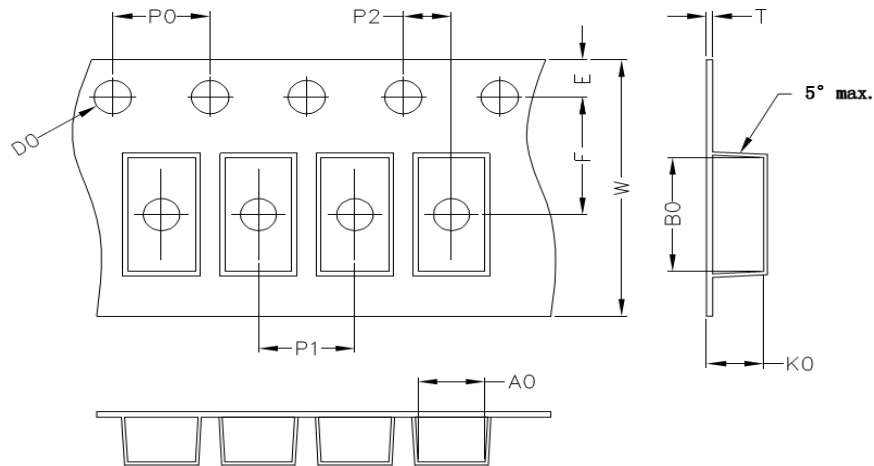


Fig. 6 Typical Transient Thermal Impedance

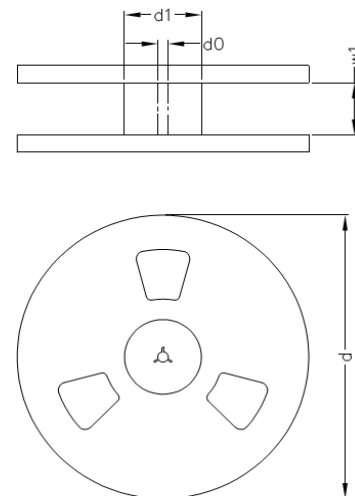
Packaging Specifications

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

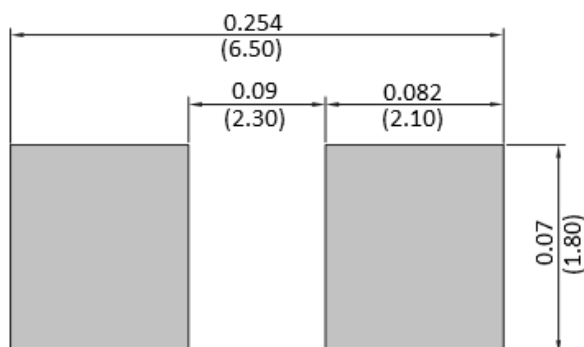


Package	D1 (mm)	D0 (mm)	W1 (mm)	D (mm)
SMA	75	13.5	13.5	330
SMB	75	13.5	13.5	330
SMC	75	13.5	17.0	330

NOTE : The tolerance of reel is ±2mm

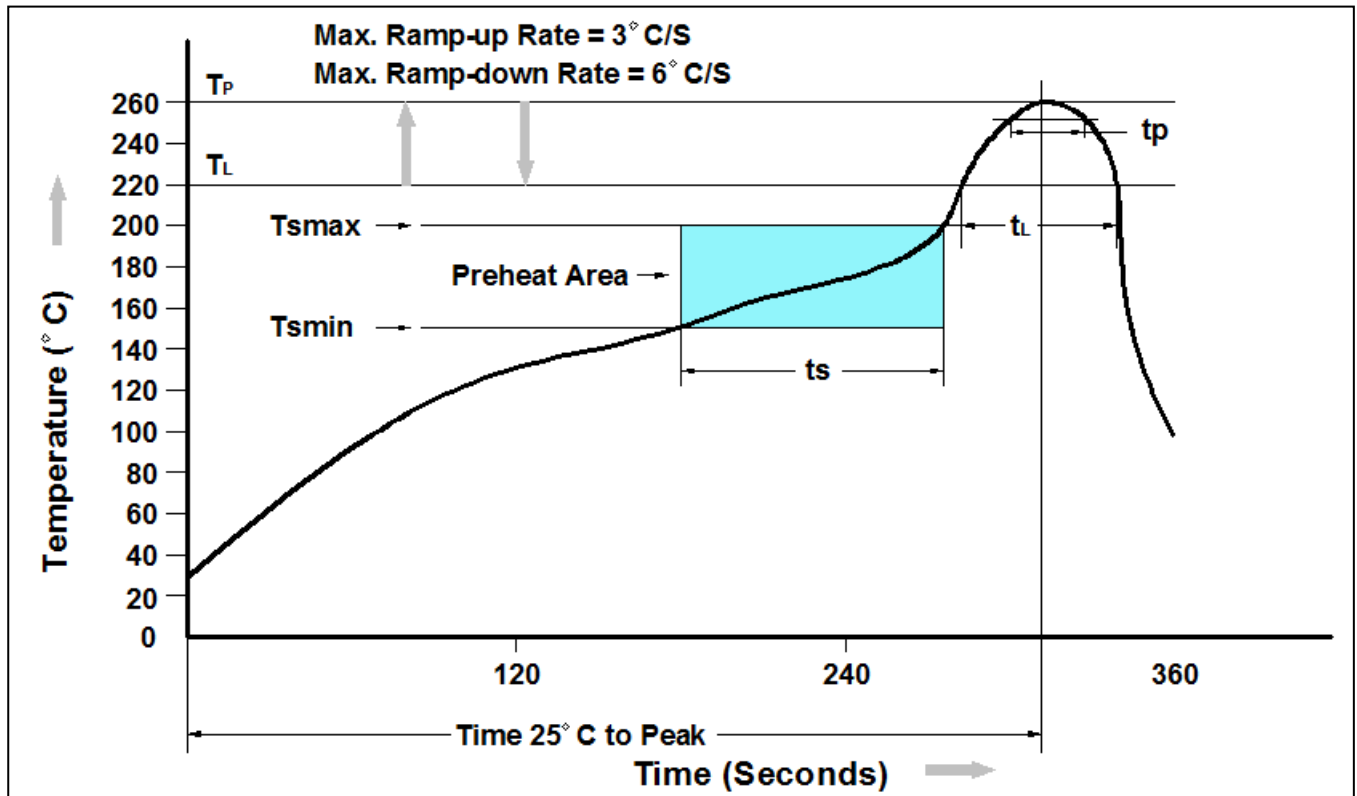


Pad Layout



Unit: inch (mm)

Recommend IR Reflow Soldering Thermal Profile



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

Ordering Information

Part Number	Description	Quantity
US1A~US1M	SMA Reel	5000 pcs

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