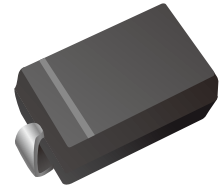


## General Purpose Silicon Rectifier

### Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Construction utilizes void-free molded plastic technique
- Low reverse leakage
- High forward surge current capability
- Lead free in comply with EU RoHS 2011/65/EU directives



### Mechanical Data

- Case:SMA
- Terminals: leads solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any

### Ordering Information

Part Number	Marking	Shipping	Reel
SM528-TR5	M528	5000PCS Tape&Reel	13 inches
SM528-TR7K5	M528	7500PCS Tape&Reel	13 inches

### Maximum Ratings And Electrical Characteristics

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

Rating	Symbol	SM528	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	3000	V
Maximum RMS voltage	$V_{RMS}$	2100	V
Maximum DC blocking voltage	$V_{DC}$	3000	V
Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A=75^\circ\text{C}$ Peak forward surge current	$I_{(AV)}$	1.0	A
8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	25.0	A
Maximum instantaneous forward voltage at 1 A	$V_F$	2.0	V
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=100^\circ\text{C}$	$I_R$	5.0 150.0	$\mu\text{A}$
Typical junction capacitance (Note1)	$C_J$	15.0	pF
Typical thermal resistance (Note2)	$R_{\theta JA}$	95	$^\circ\text{C/W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-50 to +150	$^\circ\text{C}$

Note:(1) Measured at 1MHz and applied reverse voltage of 4.0V D.C.

(2) Thermal resistance from junction to ambient at 0.2 "(5mm)lead length,P.C.B. mounted.



Characteristics Curves

FIG. 1 FORWARD CURRENT DERATING CURVE

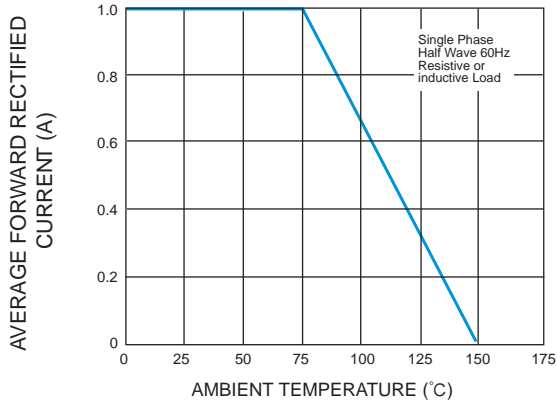


FIG. 2 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

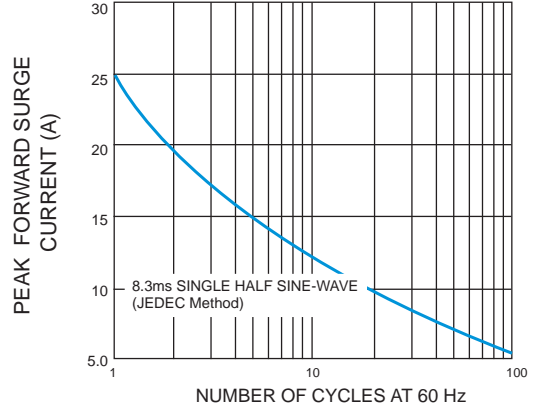


FIG. 3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

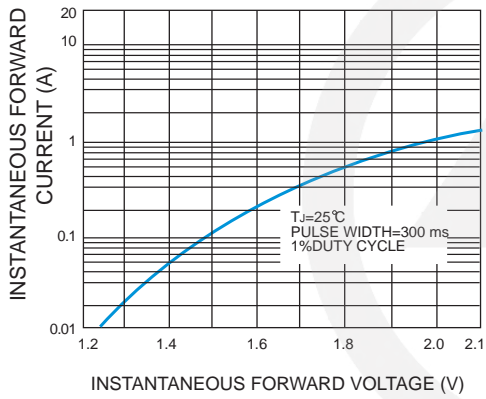


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

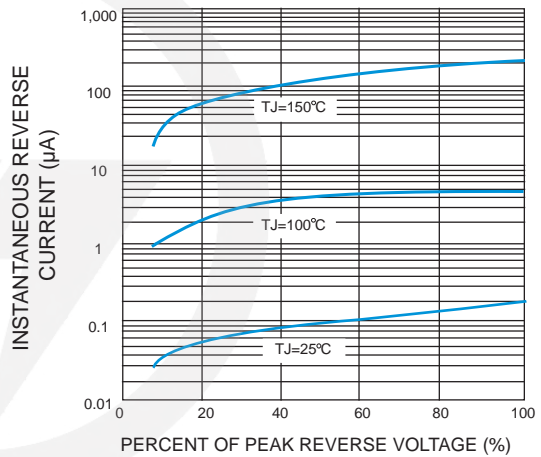


FIG. 5 TYPICAL JUNCTION CAPACITANCE

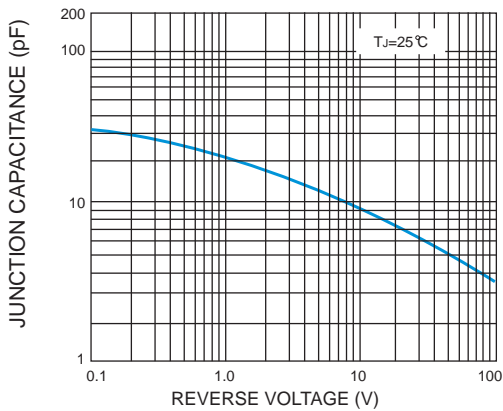
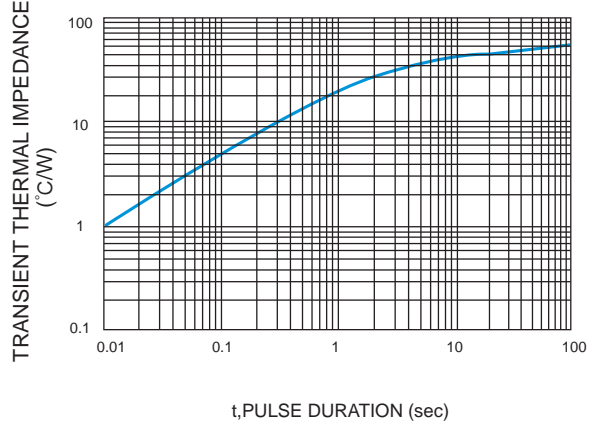
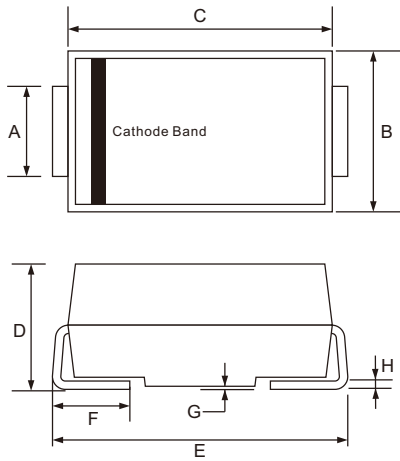


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE



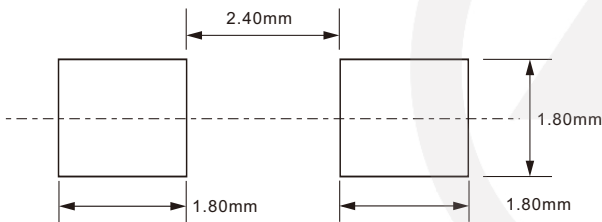
**SMA Package Outline**



Unit : mm

SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	1.25	1.65
B	2.30	2.79
C	3.90	4.75
D	1.90	2.50
E	4.70	5.28
F	0.76	1.52
G	0.203 TYP.	
H	0.15	0.31

**SMA Suggested Pad Layout**

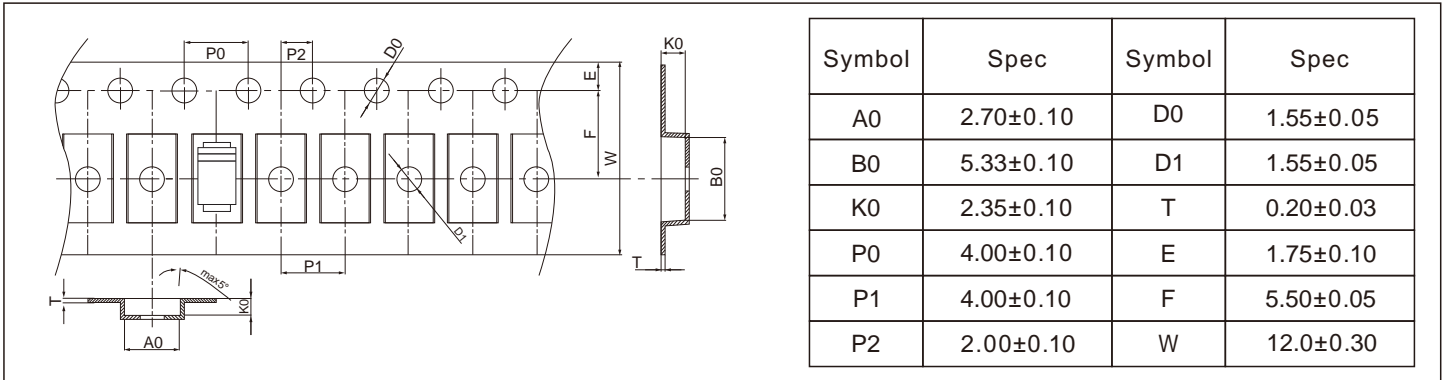


**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purpose only.

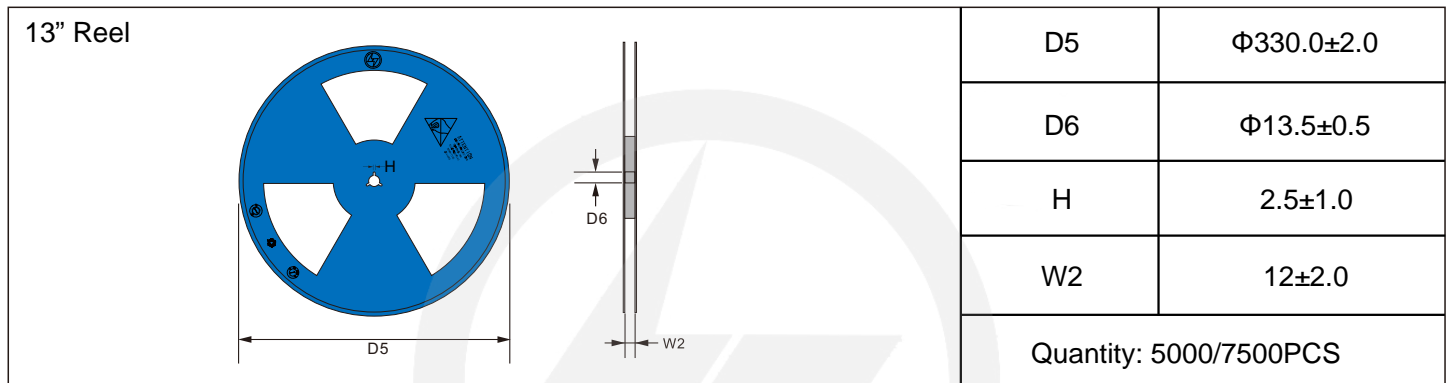
**Carrier Tape Dimensions**

Unit : mm

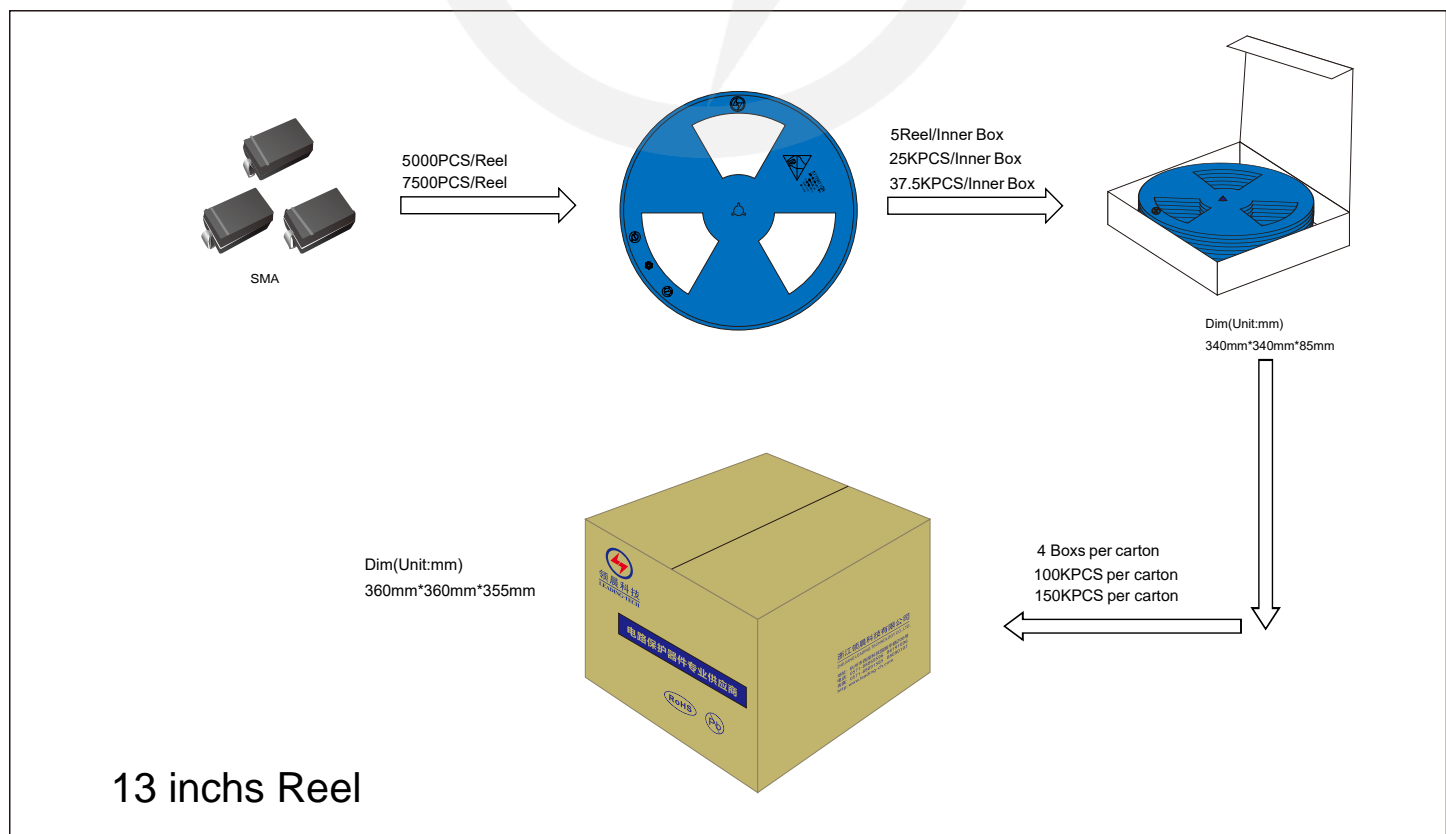


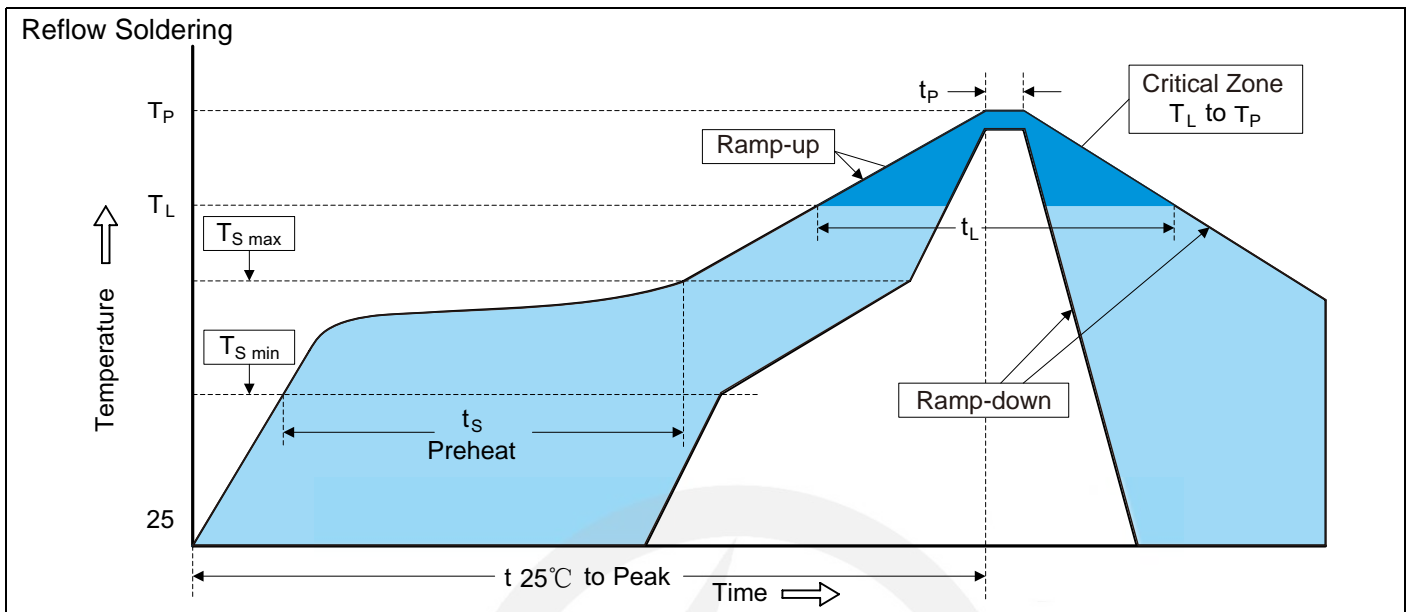
**Reel Dimensions**

Unit : mm



**Packaging**



**Recommended Soldering Conditions**

**Recommended Conditions**

Profile Feature	Pb-Free Assembly
Average ramp-up rate ( $T_L$ to $T_P$ )	3°C/second max.
Preheat -Temperature Min ( $T_{S\ min}$ ) -Temperature Max ( $T_{S\ max}$ ) -Time (min to max) ( $t_s$ )	150°C 200°C 60-180 seconds
$T_{S\ max}$ to $T_L$ -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature ( $T_L$ ) -Time ( $t_L$ )	217°C 60-150 seconds
Peak Temperature ( $T_P$ )	260°C
Time within 5°C of actual Peak Temperature ( $t_P$ )	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

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## Version Update information

Series NO.	Enactment/Revision Date	Effective Date	Version	Revision content	Revision Reason	Revision Person	Note
01	2024.12.06	2024.12.06	3.0	New File	/	Ding	