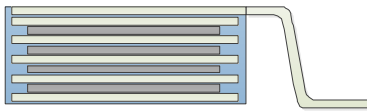
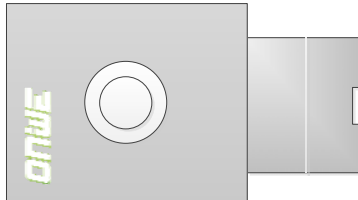


## Transient Voltage Suppression Diodes



### RoHS Features

- 10kA peak pulse current ( $t_p=8/20\mu s$ )
- Glass Passivated Junction for reliability
- Bi-directional
- Very Low Clamping Voltage
- Low Slope Resistance
- Sharp Breakdown Voltage



### Description

The SP10 series of high current transient suppressors have been specially designed for use in A.C. line protection and any demanding applications (AC or DC). They offer superior clamping characteristics than the avalanche voltage (but above the rated working voltage). Therefore, any voltage rise due to increased current conduction is contained to a minimum, providing the best possible protection level.

### Applications

- AC line
- DC line
- Power line

### Maximum Ratings and Thermal Characteristics( $T_A=25^\circ C$ unless otherwise noted)

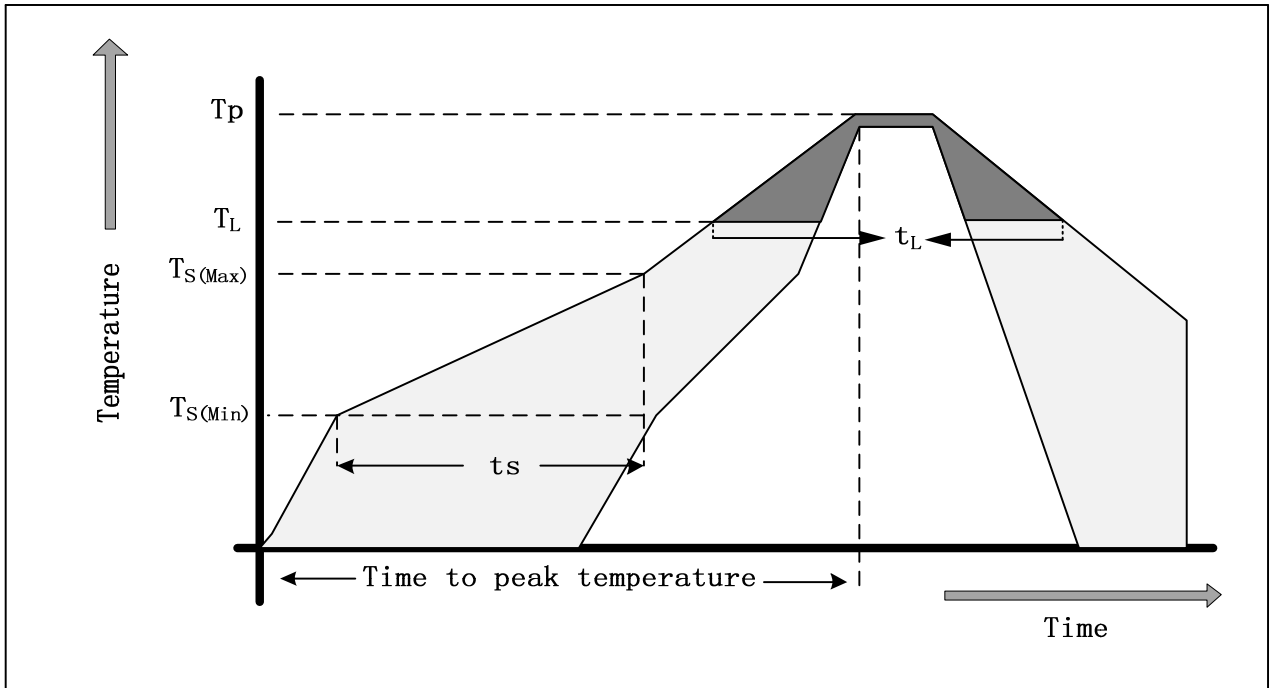
Parameter	Symbol	Value	Units
Current Rating(note 1)	$I_{pp}$	10	kA
Operating Junction Temperature Range	$T_J$	-55 to 125	$^\circ C$
Operating Storage Temperature Range	$T_{STG}$	-55 to 150	$^\circ C$

Note: 1. Rated IPP measured with 8x20 $\mu s$  pulse

### Electrical Characteristics

Part Number (Uni)	DC Reverse Standoff Voltage $V_R$ (Volts)	Maximum Reverse Leakage ( $I_R$ ) @ $V_R$ ( $\mu A$ )	DC Breakdown Voltage( $V_{BR}$ ) @ $I_T$		Test Current $I_T$ mA	Maximum Clamping Voltage $V_C$ @ $I_{PP}$		Maximum Temp Coefficient OF $V_{BR}$ %/ $^\circ C$	Maximum Capacitance 0 Bias 10kHz nF
			Min Volts	Max Volts		$V_C$ Volts	$I_{PP}$ Amps		
SP10-030C	30	20	32	37	10	58	10,000	0.1	11.0
SP10-058C	58	20	64	70	10	110	10,000	0.1	6.5
SP10-066C	66	20	72	80	10	120	10,000	0.1	6.5
SP10-076C	76	20	85	95	10	140	10,000	0.1	6.5
SP10-170C	170	20	180	220	10	260	10,000	0.1	2.8
SP10-190C	190	20	200	245	10	290	10,000	0.1	2.5
SP10-240C	240	20	250	285	10	340	10,000	0.1	2.2
SP10-380C	380	20	401	443	10	520	10,000	0.1	2.0
SP10-430C	430	20	440	490	10	625	10,000	0.1	1.4

**Soldering Parameters**

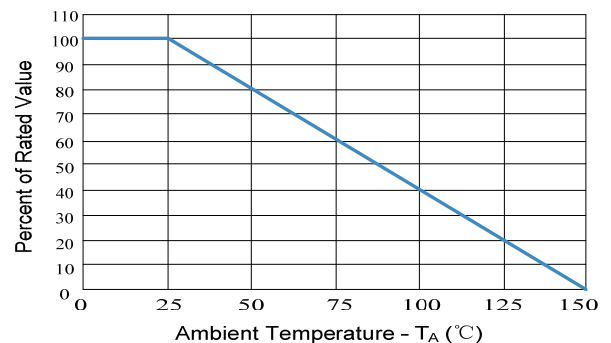


Reflow Condition		Lead – Free assembly
Pre Heat	- Temperature Min ( $T_{s(min)}$ )	150°C
	- Temperature Max ( $T_{s(max)}$ )	200°C
	- Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus) Temp( $T_l$ ) to peak		3°C/second max
$T_{s(max)}$ to $T_l$ - Ramp-up Rate		3°C/second max
Reflow	- Temperature ( $T_l$ ) (Liquidus)	217°C
	- Temperature ( $t_l$ )	60 – 150 seconds
Peak Temperature( $T_p$ )		260+0/-5 °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 ( $T_p$ )		8 minutes Max.
Do not exceed		280°C

**Flow/Wave Soldering (Solder Dipping)**

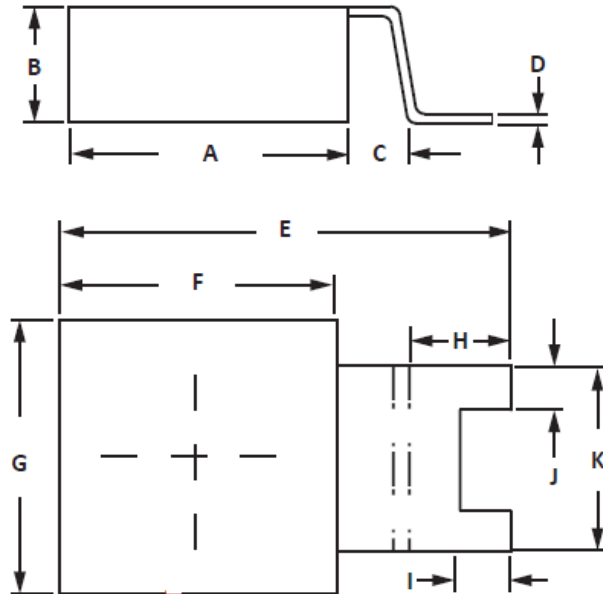
**Peak Power Derating**

Peak Temperature :	265°C
Dipping Time :	10 seconds
Soldering :	1 time



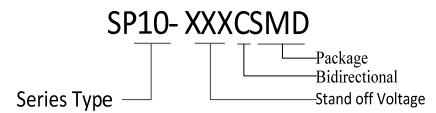
**Dimensions**

**PACKAGE OUTLINE**



**DIMENSIONS**

SYMBOL	INCHES	MILIMETER
A	0.413±0.024	10.50±0.60
B	0.787max	20max
C	0.13±0.010	3.31±0.26
D	0.020±0.002	0.51±0.05
E	0.725±0.010	18.42±0.25
F	0.413±0.024	10.50±0.60
G	0.413±0.024	10.50±0.60
H	0.130±0.010	3.31±0.26
I	0.051±0.005	1.30±0.13
J	0.126±0.005	3.21±0.13
K	0.345±0.006	8.77±0.15
A	0.413±0.024	10.50±0.60



**Ordering information**

Order code	Marking	Base qty	Delivery mode
SP10-030CSMD	SP10-030CM	500	Box
SP10-058CSMD	SP10-058CM	500	Box
SP10-066CSMD	SP10-066CM	500	Box
SP10-076CSMD	SP10-076CM	500	Box
SP10-170CSMD	SP10-170CM	500	Box
SP10-190CSMD	SP10-190CM	500	Box
SP10-240CSMD	SP10-240CM	500	Box
SP10-380CSMD	SP10-380CM	500	Box
SP10-430CSMD	SP10-430CM	500	Box