

SM6KCJ Series Transient Voltage Suppressor

SM6KCJ Series

Description

SM6KCJ series TVS is designed for DC power supply equipment in outdoor exposure environment. It is used to replace the traditional PTC, GDT and TVS combination solution, which is widely used in GPS module of the tower base station.etc

Features

- ◆ Planar junction
- ◆ Excellent clamping capability
- ◆ Repetition rate (duty cycle) : 0.01%
- ◆ Low profile package and low inductance
- ◆ 6KV/3KA peak pulse power capability at 8/20μs waveform
- ◆ Fast response time: typically less than 1.0ps from 0V to V_{BR} min
- ◆ High temperature soldering:260°C/10s at terminals
- ◆ Plastic package has Underwriters Laboratory Flammability 94V-0
- ◆ For surface mounted applications in order to optimize board space



SMC



Bi-directional



Uni-direction

Symbol

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$, $\text{RH}=45\%-75\%$, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_{stg}	-55 to +150	$^{\circ}\text{C}$
Operating junction temperature range	T_j	-55 to +125	$^{\circ}\text{C}$
Steady state power dissipation at $T_L=75^{\circ}\text{C}$	$P_{M(AV)}$	8.0	W
Peak pulse power dissipation on 8/20μs waveform	V_{PP}/I_{PP}	6KV/3KA	V/A
Maximum Instantaneous Forward Voltage at 80A for Unidirectional	V_F	5.0	V

Marking



SM6KCJ Series:Device Marking Code

SM6KCJ Series Transient Voltage Suppressor

SM6KCJ Series

Electrical Characteristics (T_A=25°C)

Part Number		Marking		V _R	I _R @V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	V _{PP} /I _{PP}
Uni-Polar	Bi-Polar	Uni	Bi	V	μA	min(V)	max(V)	mA	max(V)	V/A
SM6KCJ5.0A	SM6KCJ5.0CA	6K5.0U	6K5.0B	5.0	800	6.40	7.10	10	20	6KV/3KA
SM6KCJ6.0A	SM6KCJ6.0CA	6K6.0U	6K6.0B	6.0	800	6.50	7.40	10	22	6KV/3KA

① Surge wave :1.2-50us-8/20us (Meet IEC61000-4-5)

V_R : Stand-off Voltage -- Maximum voltage that can be applied

V_{BR}: Breakdown Voltage

V_C: Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{pp}

I_R: Reverse Leakage Current

Ratings And V-I Characteristics Curves (T_A=25°C, unless otherwise noted)

FIG.1:V- I curve characteristics (Uni-directional)

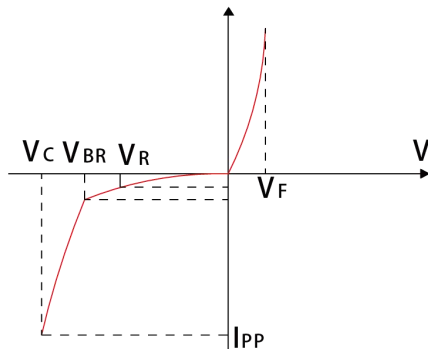


FIG.2:V- I curve characteristics (Bi-directional)

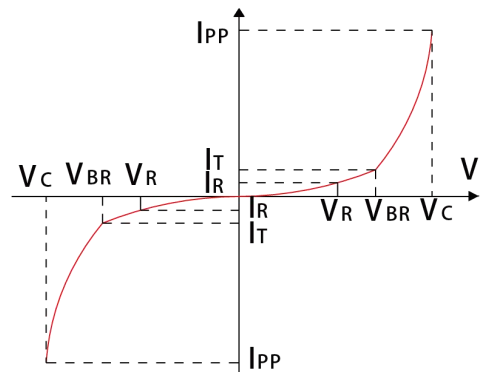


FIG.3: Pulse waveform

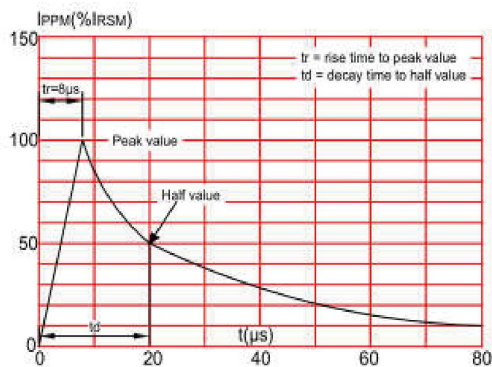
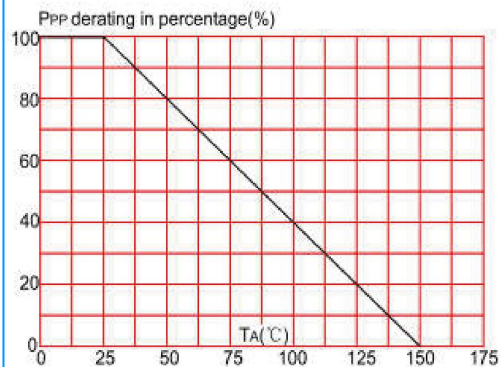


FIG.4: Pulse derating curve

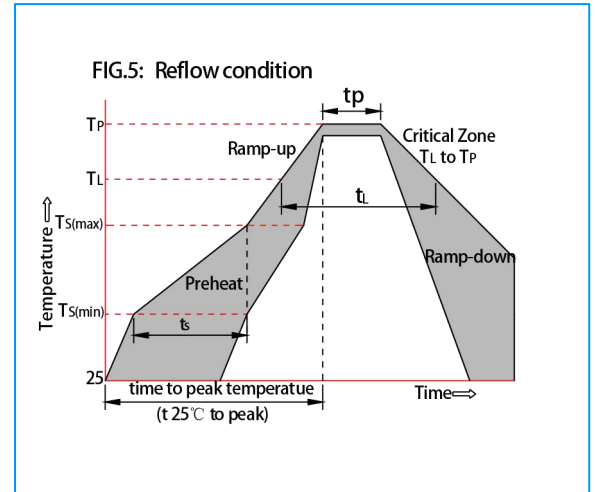


SM6KCJ Series Transient Voltage Suppressor

SM6KCJ Series

Soldering Parameters

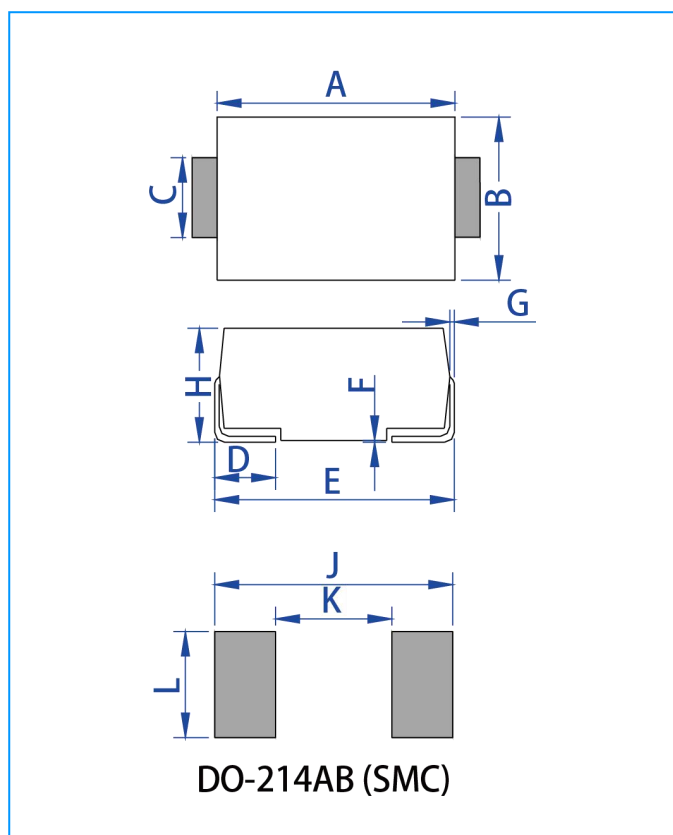
Reflow Condition		Pb-Free assembly (see FIG.5)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



SM6KCJ Series Transient Voltage Suppressor

SM6KCJ Series

Package Mechanical Data



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	6.60	7.11	0.260	0.280
B	5.59	6.20	0.220	0.244
C	2.75	3.20	0.108	0.126
D	0.76	1.52	0.030	0.060
E	7.74	8.13	0.305	0.320
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.15	2.62	0.085	0.103
J	8.12	---	0.320	---
K	---	4.69	---	0.185
L	3.07	---	0.121	---

Tape And Reel Specification-SMC

PART No.	PACK AGE	QUANTITY	TAPE & REEL
3.0KASMCJ5A	SMC	3,000	13inch