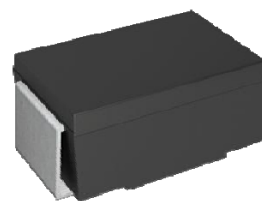


SM6P Series Transient Voltage Suppressor

Rev.1.1

APPLICATIONS

- ✧ Auto power syttems
- ✧ Can bus
- ✧ Audio、 video and GPS
- ✧ ABS powers



SMC



Bi-directional



Uni-direction

Symbol

FEATURES:

- ✧ Glass passivated or planner junction
- ✧ Lower clamping voltage.
- ✧ High temperature soldering: 260°C/10s at terminals.
- ✧ Plastic package has Underwriters Laboratory Flammability 94V-0.
- ✧ Surface mount DO-214AB

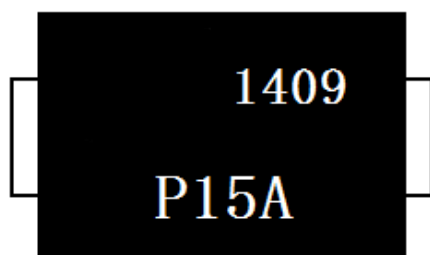
IEC COMPATIBILITY

- ✧ ISO16750-2 P5 A 12V system (87V/2Ω/150ms 10c)
- ✧ ISO16750-2 P5A 24V system (123V/8Ω/150ms 10c)

ABSOLUTE MAXIMUM RATINGS (T_A=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T _{stg}	-55 to +150	°C
Operating junction temperature range	T _j	-55 to +125	°C
Steady state power dissipation at T _L =75°C	P _{M(AV)}	8.0	W
Peak pulse power dissipation on 10/1000μs waveform	P _{PP}	6600	W

MARKING



P15A: Device Marking Code
1409: In Ninth Week, 2014

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}	I _{PP} ^①
Uni-Polar	Bi-Polar	Uni	Bi	V	μA	min(V)	max(V)	mA	max(V)	A
SM6P15A	SM6P15C	P15A	P15C	15	50	16.70	18.60	5	24.4	272.7
SM6P16A	SM6P16C	P16A	P16C	16	50	17.80	19.80	5	26.0	253.8
SM6P18A	SM6P18C	P18A	P18C	18	30	20.00	22.20	5	29.2	226
SM6P20A	SM6P20C	P20A	P20C	20	5	22.20	24.50	5	32.4	203.7
☆SM6P22A	SM6P22C	P22A	P22C	22	5	24.40	26.90	5	35.5	185.9
SM6P24A	SM6P24C	P24A	P24C	24	5	26.70	29.50	5	38.9	169.6
☆SM6P26A	SM6P26C	P26A	P26C	26	5	28.90	31.90	5	42.1	156.7
SM6P30A	SM6P30C	P30A	P30C	30	5	33.30	36.80	5	48.4	136.3
SM6P33A	SM6P33C	P33A	P33C	33	5	36.70	40.60	5	53.3	123.8
☆SM6P36A	SM6P36C	P36A	P36C	36	5	40.00	44.20	5	58.1	113.5
SM6P40A	SM6P40C	P40A	P40C	40	5	44.40	49.10	5	64.5	102.4
SM6P43A	SM6P43C	P43A	P43C	43	5	47.80	52.80	5	69.4	95.1

① Surge waveform: 10/1000μs

V_R : Stand-off Voltage -- Maximum voltage that can be applied V_{BR}:

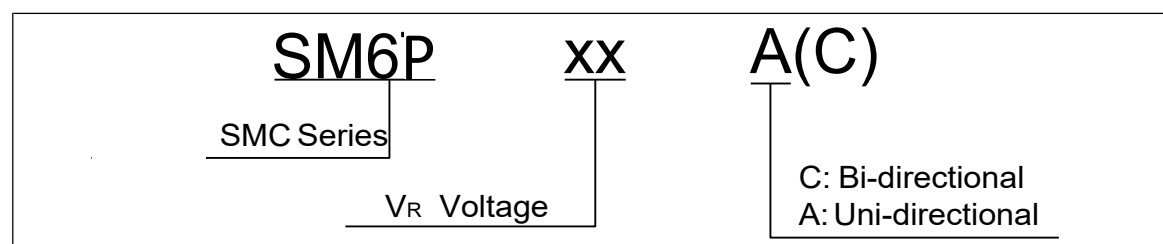
Breakdown Voltage

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

I_R : Reverse Leakage Current

☆ : Commonly used models

ORDERING INFORMATION



RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^\circ\text{C}$, unless otherwise noted)

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

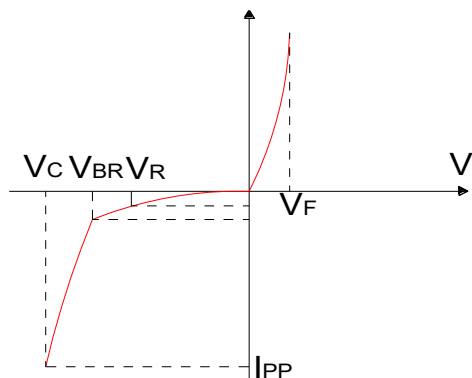


FIG.2:V- I curve characteristics (Bi-directional)

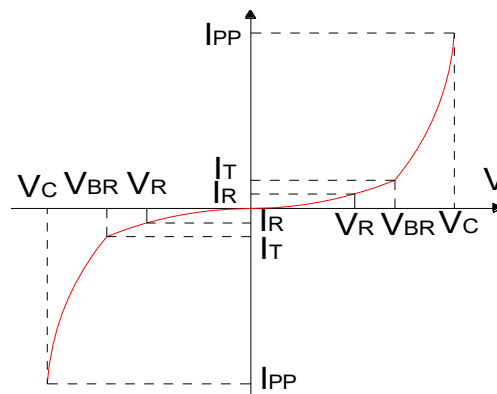


FIG.3: Pulse waveform

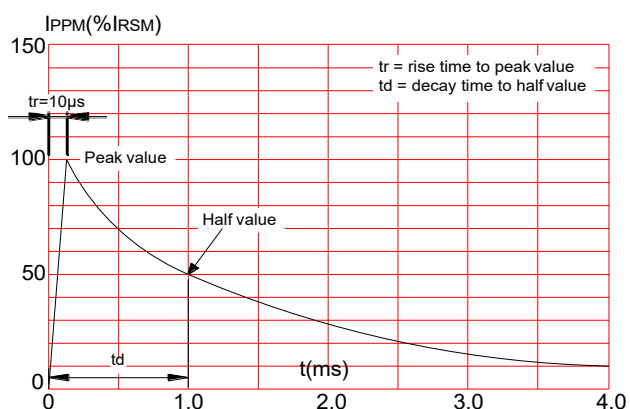


FIG.4: Pulse derating curve

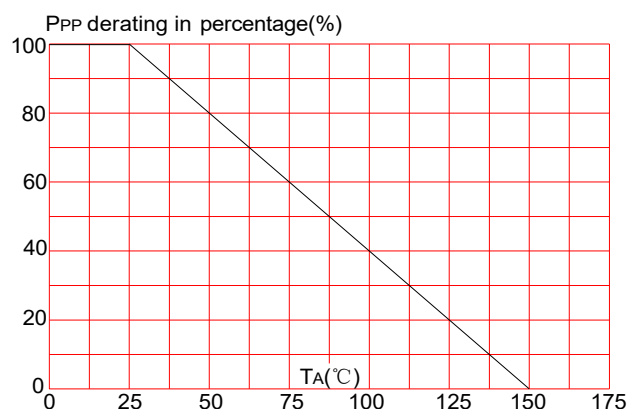


FIG.6: ISO16750 -2 test pulse 5A

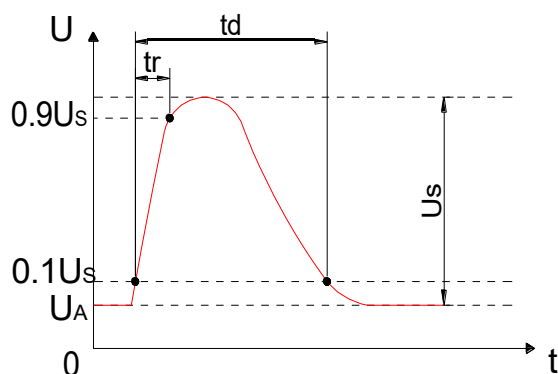
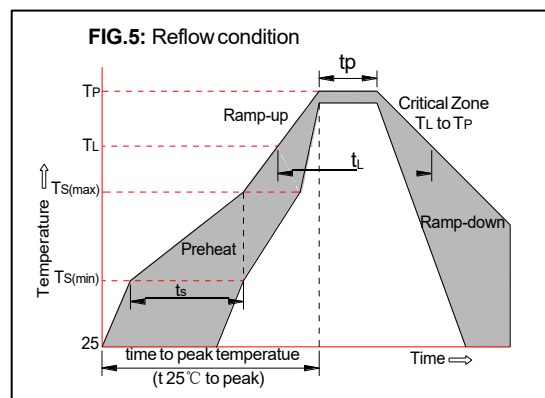


FIG.7: Parameters for test pulse 5a

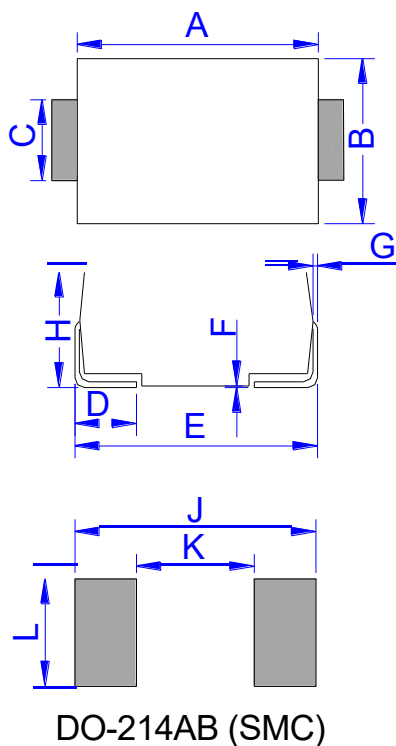
Parameter	12V system	24V system
U _s	79V to 101V	123 V to 202V
R _i	0.5Ω to 4Ω	1 Ω to 8Ω
t _d	40ms to 400ms	100ms to 350ms
t _r	5-10ms	5-10ms

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



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.	PACKAGE	QUANTITY	TAPE & REEL
SM6PxxA/C	SMC(DO214AB)	3,000	13inch