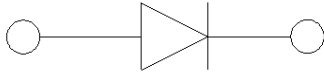
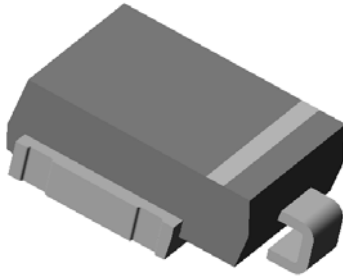
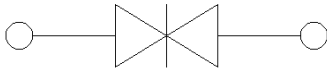
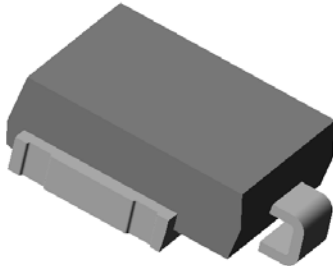


## Surface Mount Transient Voltage Suppressors

Uni-directional



Bi-directional



### Features

- Optimized glass passivated chip  
TJ = 175 °C capability suitable for high reliability and automotive requirement
- 4600 W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle):0.01 %
- Meet ISO 7637-2 5a/5b and ISO 16750 load dump test (varied by test condition)
- Part no. with suffix "Q" means AEC-Q101 qualified
- Low leakage current
- Low forward voltage drop
- Uni-directional polarity
- Excellent clamping capability
- Very fast response time
- RoHS compliant

### Mechanical Data

- **Package:** DO-218AB
- **Molding compound:** UL94V-0 flammability
- **Polarity:** Heatsink is anode

### ■Maximum Ratings (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Value
Peak power dissipation with a 10/1000 $\mu$ s waveform(1)	P <sub>pp</sub>	W	4600
Peak power dissipation with a 10/10,000 $\mu$ s waveform	P <sub>pp</sub>	W	3600
Peak pulse current with a 10/1000 $\mu$ s waveform(1)	I <sub>pp</sub>	A	See Next Table
Power dissipation on infinite heatsink at T <sub>L</sub> = 25 °C	PD	W	6.0
Peak forward surge current 8.3 ms single half sine-wave	IFSM	A	600
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	°C	- 55 to +175

#### Note:

(1) Non-repetitive current pulse per Fig.2 and derated above T<sub>A</sub>= 25 °C per Fig.1



# SM6S10AQ THRU SM6S43AQ

## ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

Part Number		Breakdown Voltage VBR @IT			Maximum Reverse Leakage IR @VRWM (uA)	Maximum IR @VRWM TJ=175 (uA)	Working Peak Reverse Voltage VRWM (V)	Maximum Reverse Surge Current IPP (A) (1)	Maximum Clamping Voltage VC @IPP (V)
		Min (V)	Max (V)	IT (mA)					
SM6S10AQ	SM6S10CAQ	11.10	12.30	5.0	15	250	10	271	17.0
SM6S11AQ	SM6S11CAQ	12.20	13.50	5.0	10	150	11	253	18.2
SM6S12AQ	SM6S12CAQ	13.30	14.70	5.0	10	150	12	231	19.9
SM6S13AQ	SM6S13CAQ	14.40	15.90	5.0	10	150	13	214	21.5
SM6S14AQ	SM6S14CAQ	15.60	17.20	5.0	10	150	14	198	23.2
SM6S15AQ	SM6S15CAQ	16.70	18.50	5.0	10	150	15	189	24.4
SM6S16AQ	SM6S16CAQ	17.80	19.70	5.0	10	150	16	177	26.0
SM6S17AQ	SM6S17CAQ	18.90	20.90	5.0	10	150	17	167	27.6
SM6S18AQ	SM6S18CAQ	20.00	22.10	5.0	10	150	18	158	29.2
SM6S20AQ	SM6S20CAQ	22.20	24.50	5.0	10	150	20	142	32.4
SM6S22AQ	SM6S22CAQ	24.40	26.90	5.0	10	150	22	130	35.5
SM6S24AQ	SM6S24CAQ	26.70	29.50	5.0	10	150	24	118	38.9
SM6S26AQ	SM6S26CAQ	28.90	31.90	5.0	10	150	26	109	42.1
SM6S28AQ	SM6S28CAQ	31.10	34.40	5.0	10	150	28	101	45.4
SM6S30AQ	SM6S30CAQ	33.30	36.80	5.0	10	150	30	95	48.4
SM6S33AQ	SM6S33CAQ	36.70	40.60	5.0	10	150	33	86	53.3
SM6S36AQ	SM6S36CAQ	40.00	44.20	5.0	10	150	36	79	58.1
SM6S40AQ	SM6S40CAQ	44.40	49.10	5.0	10	150	40	71	64.5
SM6S43AQ	SM6S43CAQ	47.80	52.80	5.0	10	150	43	66	69.4

### Note:

1. Surge current waveform is defined at 10/1000uS waveform

2. For all types maximum VF = 1.9 V at IF = 100 A measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum



# SM6S10AQ THRU SM6S43AQ

## ■ Characteristics (Typical)

FIG.1 Pulse Derating Curve

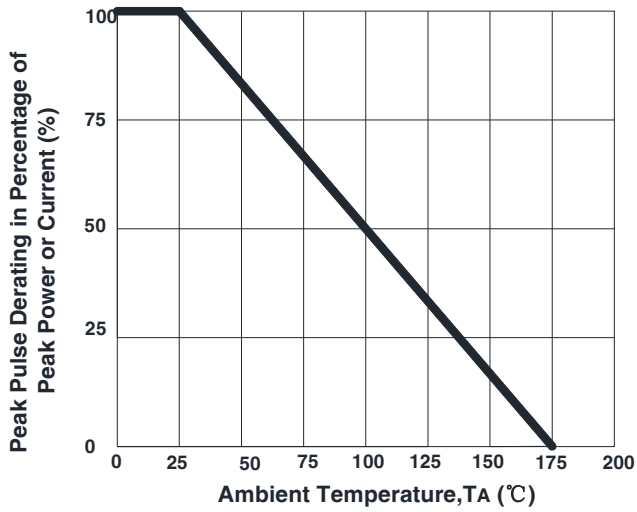


FIG.2 Pulse Waveform

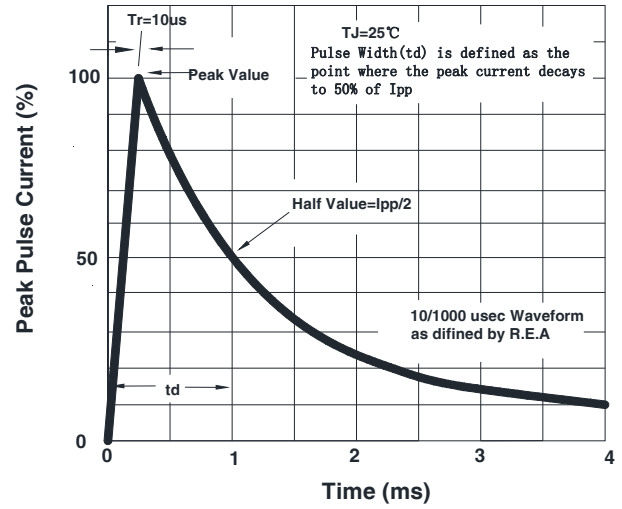


FIG.3 Steady State Power Derating Curve

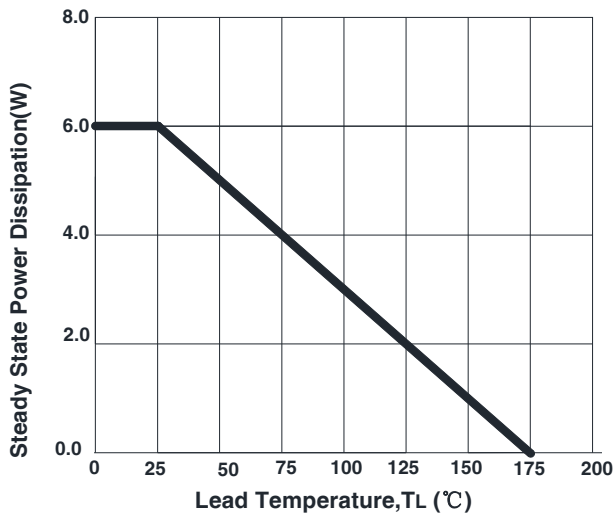
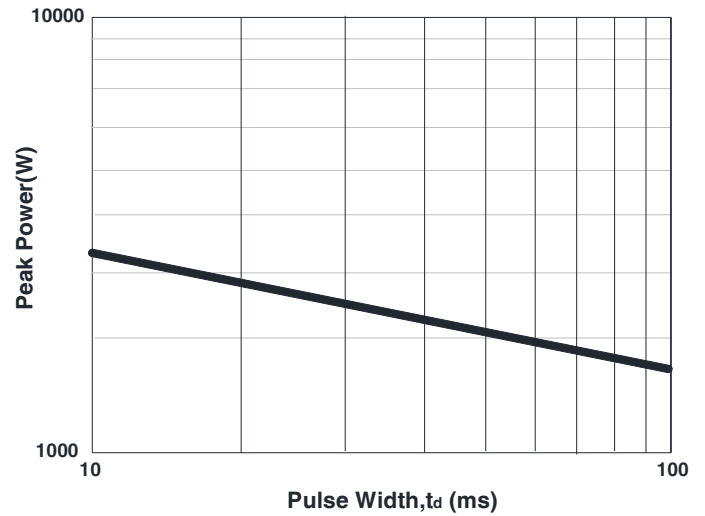


FIG.4 Peak Pulse Power Rating Curve



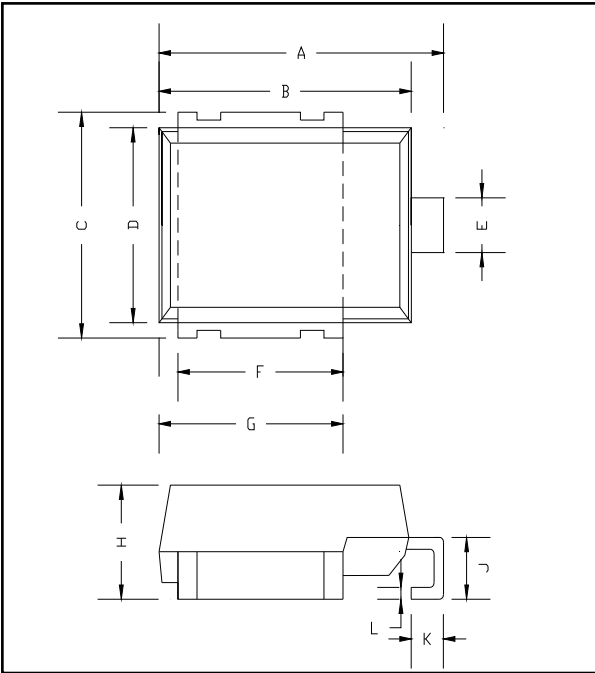
## ■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SM6S10AQ-SM6S43CAQ	F1	Approximate 2.82	750	750	3750	13"reel



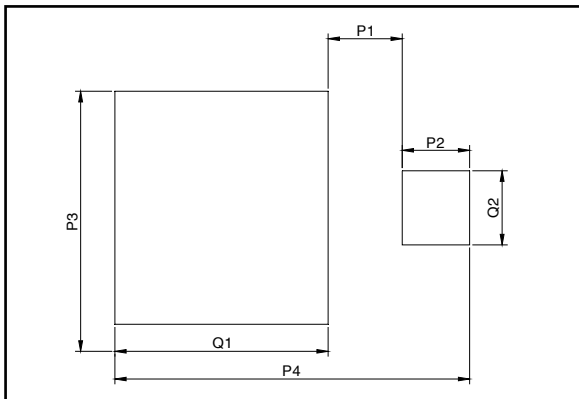
# SM6S10AQ THRU SM6S43AQ

## ■ Outline Dimensions



DO-218AB		
DIM	MIN (mm)	MAX(mm)
A	15.00	16.00
B	13.30	13.70
C	9.50	10.50
D	8.20	8.60
E	2.30	2.90
F	8.70	9.30
G	9.70	10.30
H	4.80	5.20
J	2.50	3.50
K	1.70	2.70
L	0.50	0.70

## ■ Suggested pad layout



DO-218AB	
Dim	Millimeters
P1	3.3
P2	3.0
P3	11.0
P4	15.8
Q1	9.5
Q2	3.5



## SM6S10AQ THRU SM6S43AQ

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