



**THE DATASHEET OF  
SM8S10AHE3-TP**



## Features

- AEC-Q101 Qualified
- Meet ISO 7637-2 5a/5b and ISO 16750 Load Dump Test (Varied by Test Condition)
- Low Leakage Current
- Glass Passivated Junction
- Excellent Clamping Capability
- Bi-directional Polarity
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant <sup>(Note1)</sup> ("P" Suffix Designates RoHS Compliant. See Ordering Information)
- ESD protection of data lines in accordance with IEC 61000-4-2, ±30kV(Air), ±30kV (Contact)

## Maximum Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Surge Current with a 10/1000µs Waveform <sup>(Note2)</sup>	I <sub>PPM</sub>	See Next Table	A
Peak Pulse Power Dissipation with a 10/1000µs Waveform	P <sub>PPM</sub>	6600	W
Peak Pulse Power Dissipation with a 10/10000µs Waveform	P <sub>PPM</sub>	5200	W
Power Dissipation On Infinite Heatsink TL=25°C	P <sub>D</sub>	8.0	W
Peak Forward Surge Current Unidirectional Only <sup>(Note3)</sup>	I <sub>FSM</sub>	700	A
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +175	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +175	°C
Typical Thermal Resistance Junction to Case	R <sub>θJC</sub>	1.1	°C/W

Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.  
 2. Non-repetitive current pulse, per Fig.2 and derated above T<sub>A</sub>=25°C per Fig.3  
 3. 8.3 ms single half sine-wave

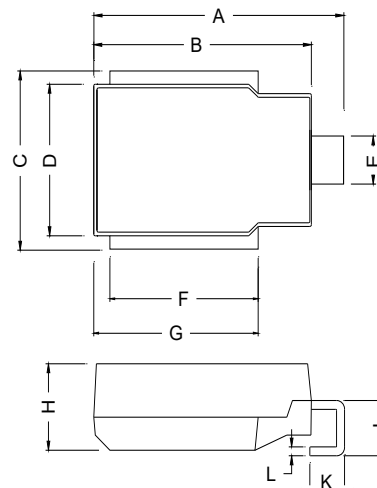
## Internal Structure

Description	Simplified outline	Graphic symbol
Uni-directional		
Bi-directional		

XXXX = Marking code YYWW = Date Code

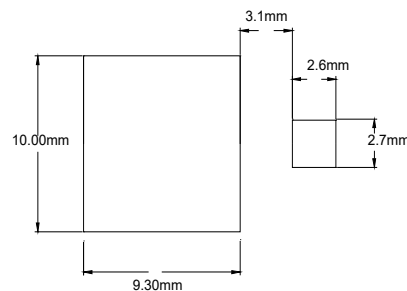
**6600 Watt  
TVS  
10 to 43 Volts**

## DO-218AB



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.590	0.630	15.00	16.00	
B	0.524	0.539	13.30	13.70	
C	0.374	0.413	9.50	10.50	
D	0.323	0.339	8.20	8.70	
E	0.091	0.114	2.30	3.00	
F	0.343	0.366	8.70	9.50	
G	0.382	0.406	9.70	10.50	
H	0.189	0.205	4.70	5.20	
J	0.098	0.138	2.50	3.50	
K	0.067	0.106	1.70	2.80	
L	0.020	0.028	0.50	0.70	

## SUGGESTED SOLDER PAD LAYOUT



**Electrical Characteristics @ 25°C Unless Otherwise Specified**

MCC Part Number		Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage $I_R$	Maximum $I_R$ @ $V_{RWM}$ $T_J=175$	Working Peak Reverse Voltage $V_{RWM}$	Maximum Reverse Surge Current IPP	Maximum Clamping Voltage
Uni-directional	Bi-directional	Min (V)	Max (V)	$I_T$ (mA)	@ $V_{RWM}$ ( $\mu A$ )	( $\mu A$ )	(V)	(A) <sup>(1)</sup>	$V_C$ @ $I_{PP}$ (V)
SM8S10AHE3		11.10	12.30	5	15	250	10	388.0	17.0
SM8S11AHE3		12.20	13.50	5	10	150	11	363.0	18.2
SM8S12AHE3		13.30	14.70	5	10	150	12	332.0	19.9
SM8S13AHE3		14.40	15.90	5	10	150	13	307.0	21.5
SM8S14AHE3	SM8S14CAHE3	15.60	17.20	5	10	150	14	284.0	23.2
SM8S15AHE3	SM8S15CAHE3	16.70	18.50	5	10	150	15	270.0	24.4
SM8S16AHE3	SM8S16CAHE3	17.80	19.70	5	10	150	16	254.0	26.0
SM8S17AHE3	SM8S17CAHE3	18.90	20.90	5	10	150	17	239.0	27.6
SM8S18AHE3	SM8S18CAHE3	20.00	22.10	5	10	150	18	226.0	29.2
SM8S20AHE3	SM8S20CAHE3	22.20	24.50	5	10	150	20	204.0	32.4
SM8S22AHE3	SM8S22CAHE3	24.40	26.90	5	10	150	22	186.0	35.5
SM8S24AHE3	SM8S24CAHE3	26.70	29.50	5	10	150	24	170.0	38.9
SM8S26AHE3	SM8S26CAHE3	28.90	31.90	5	10	150	26	157.0	42.1
SM8S28AHE3	SM8S28CAHE3	31.10	34.40	5	10	150	28	145.0	45.4
SM8S30AHE3	SM8S30CAHE3	33.30	36.80	5	10	150	30	136.0	48.4
SM8S33AHE3	SM8S33CAHE3	36.70	40.60	5	10	150	33	124.0	53.3
SM8S36AHE3	SM8S36CAHE3	40.00	44.20	5	10	150	36	114.0	58.1
SM8S40AHE3	SM8S40CAHE3	44.40	49.10	5	10	150	40	102.0	64.5
SM8S43AHE3	SM8S43CAHE3	47.80	52.80	5	10	150	43	95.1	69.4

Note: 1. Surge current waveform is defined at 10/1000us waveform

**Curve Characteristics**

Fig. 1 - Peak Pulse Power Rating Curve

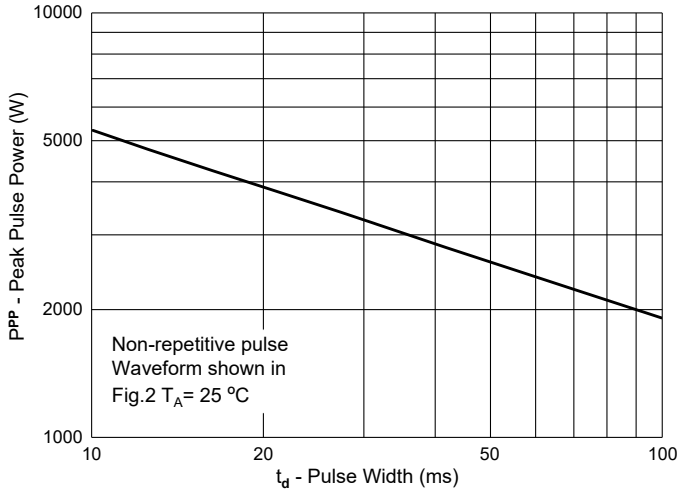


Fig. 2 - Pulse Waveform

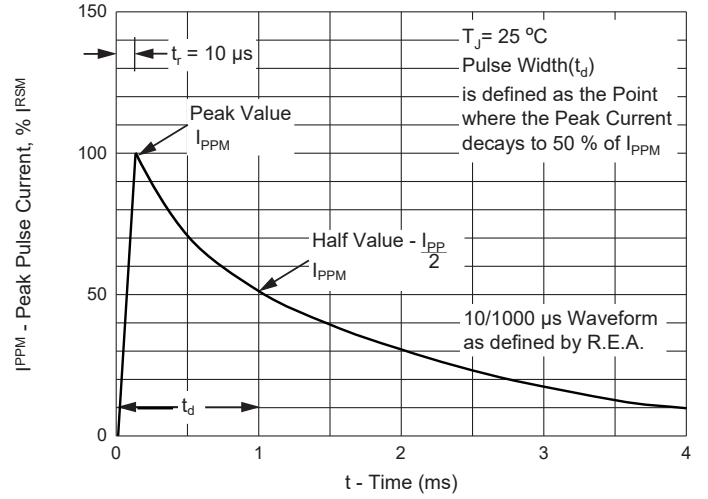


Fig. 3 - Pulse Derating Curve

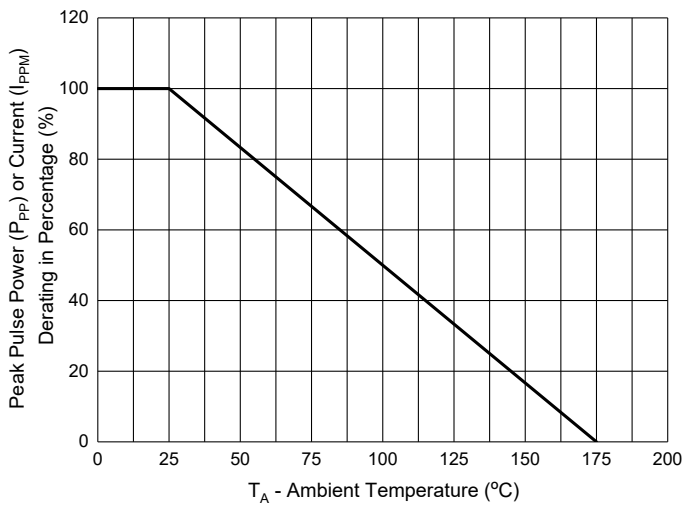
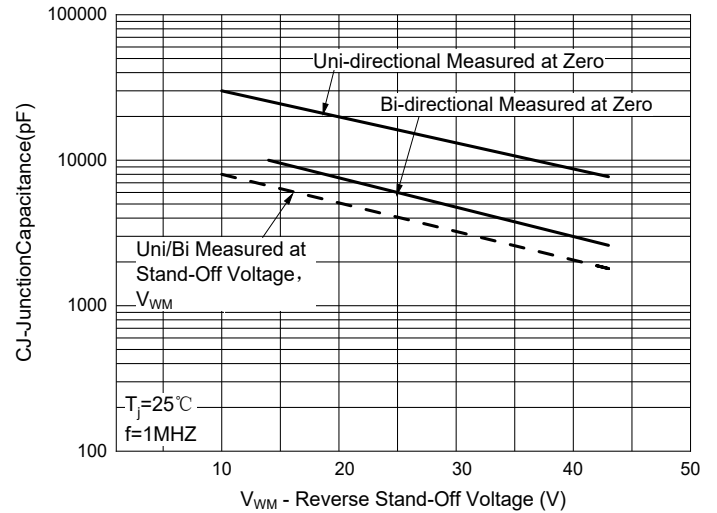


Fig. 4 - Typical Junction Capacitance



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:750pcs/Reel

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