

3000 W Surface Mount Transient Voltage Suppressor

DO-214AB (SMC) 	Voltage 9.5 V to 95 V (Uni) 9.5 V to 95 V (Bid) Current 3000 W / ms HYPERECTIFIER®
	FEATURE • Low profile package • Ideal for automated placement • 3000 peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle): 0.01% • Excellent clamping capability • Very fast response time • Solder dip 260 °C, 10s • Available in uni-directional and bi-directional • AEC-Q101 qualified • Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC • Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C MECHANICAL DATA • Case: DO-214AB (SMC). Epoxy meets UL 94V-0 flammability rating. • Polarity: For unidirectional types color band denotes cathode end. No marking on bidirectional types. • Terminals: Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JESD 201 class 1A whisker test. • HE3 suffix for high reliability grade, meets JESD 201 class 2 whisker test.
	TYPICAL APPLICATIONS Used in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive and telecommunication.
	RoHS COMPLIANT e3 AUTOMOTIVE GRADE Available

Maximun Ratings and Electrical Characteristics at 25 °C

P_{PPM}	Peak Pulse Power Dissipation with 10/1000 μ s exponential pulse	3000 W
I_{FSM}	Peak Forward Surge Current 8.3 ms. (Note 1) (Jedec Method) (Note 2)	200 A
V_F	Max. Forward Voltage Drop at $I_F = 100$ A (Note 1)	3.5 V
$T_j - T_{stg}$	Operating Junction and Storage Temperature Range	-65 to + 175 °C

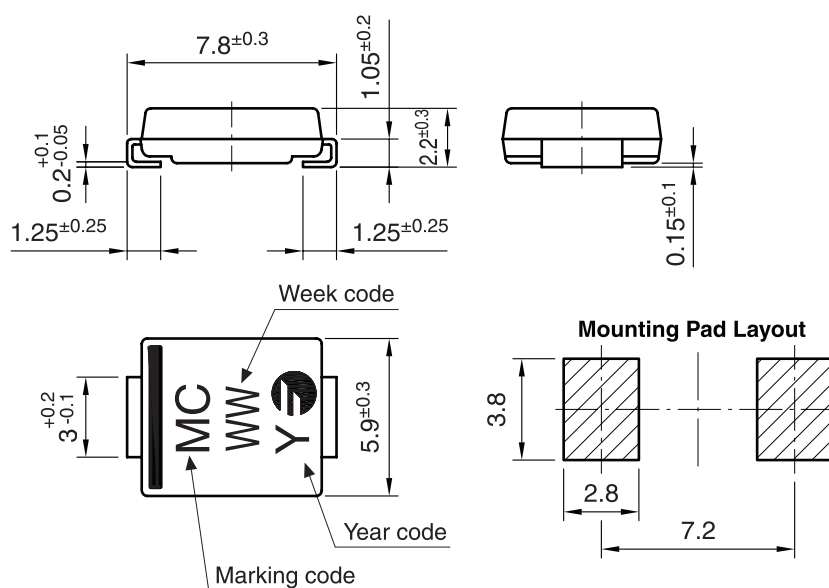
Notes: 1. Only for unidirectional
 2. Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal

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Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
3KSMC33A TRTB	TRTB	13" diameter tape and reel	3,500	0.211
3KSMC33A HE3 TRTB	TRTB	13" diameter tape and reel	3,500	0.211
3KSMC33CA TRTB	TRTB	13" diameter tape and reel	3,500	0.211
3KSMC33CA HE3 TRTB		13" diameter tape and reel	3,500	0.211

Package Outline Dimensions: (mm) DO-214AB (SMC)



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Rating and Characteristics (Ta 25 °C unless otherwise noted)

DEVICE TYPE	MC	VBR @ IT (1)			IR @ VR		IRM @	VCL @ IPP		RD	VCL @ IPP		RD	αT
Unidirectional	(3)	(V)			(V) (μA)		T _j = 150°C (μA)	10/1000 μs (V) (A)		10/1000 μs (Ω)	8/20 μs		8/20 μs (Ω)	(%/°C)
		min	max	mA							(V)	(A)		
3KSMC8.5A	CAT	9.44	10.4	1.0	8.5	10.0	50	14.4	208.4	0.020	19.9	1389	0.006	0.070
3KSMC10A	CAA	11.1	12.3	1.0	10	5.0	50	17.0	177	0.026	22.5	1217	0.008	0.075
3KSMC11A	CAB	12.2	13.5	1.0	11	5.0	50	18.2	165	0.028	23.7	1156	0.009	0.075
3KSMC12A	CAC	13.3	14.7	1.0	12	2.0	20	19.9	151	0.034	25.4	1078	0.010	0.080
3KSMC13A	CAD	14.4	15.9	1.0	13	2.0	20	21.5	140	0.040	27.0	1014	0.011	0.080
3KSMC14A	CAE	15.6	17.2	1.0	14	1.0	10	23.2	129	0.046	28.7	955	0.012	0.085
3KSMC15A	CAF	16.7	18.5	1.0	15	1.0	10	24.4	123	0.048	30.0	910	0.013	0.085
3KSMC16A	CAG	17.8	19.7	1.0	16	1.0	10	26.0	115	0.055	31.5	870	0.013	0.085
3KSMC17A	CAH	18.9	20.9	1.0	17	1.0	10	27.6	109	0.061	33.1	827	0.015	0.075
3KSMC18A	CAI	20.0	22.1	1.0	18	1.0	10	29.2	103	0.069	35.0	790	0.016	0.090
3KSMC20A	CAJ	22.2	24.5	1.0	20	1.0	10	32.4	92.6	0.085	37.5	730	0.018	0.090
3KSMC22A	CAK	24.4	26.9	1.0	22	1.0	10	35.5	84.5	0.102	40.5	680	0.020	0.095
3KSMC24A	CAL	26.7	29.5	1.0	24	1.0	10	38.9	77.1	0.122	43.9	630	0.023	0.095
3KSMC26A	CAM	28.9	31.9	1.0	26	1.0	10	42.1	71.3	0.143	42.0	600	0.025	0.095
3KSMC28A	CAN	31.1	34.4	1.0	28	1.0	10	45.4	66.1	0.166	50.0	560	0.028	0.095
3KSMC30A	CAO	33.3	36.8	1.0	30	1.0	15	48.4	62.0	0.187	53.0	530	0.030	0.095
3KSMC33A	CAP	36.7	40.6	1.0	33	1.0	15	53.3	56.3	0.226	58.0	490	0.035	0.100
3KSMC36A	CAQ	40.0	44.2	1.0	36	1.0	20	58.1	51.6	0.269	62.7	437	0.042	0.100
3KSMC40A	CAR	44.4	49.1	1.0	40	1.0	20	64.5	46.5	0.331	69.0	396	0.050	0.105
3KSMC43A	CAS	47.8	52.8	1.0	43	1.0	20	69.4	43.2	0.384	73.9	371	0.057	0.105
3KSMC45A	CAU	50.0	55.3	1.0	45	2.0	20	72.7	41.3	0.421	77.4	354	0.062	0.105
3KSMC48A	CAV	53.3	58.9	1.0	48	2.0	20	77.4	38.8	0.477	82.0	334	0.069	0.105
3KSMC51A	CAW	56.7	62.7	1.0	51	2.0	20	82.4	36.4	0.541	87.0	314	0.077	0.105
3KSMC54A	CAX	60.0	66.3	1.0	54	2.0	20	87.1	34.4	0.605	91.7	298	0.085	0.105
3KSMC58A	CAY	64.4	71.2	1.0	58	2.0	20	93.6	32.1	0.698	98.3	278	0.097	0.110
3KSMC60A	CAZ	66.7	73.7	1.0	60	2.0	20	96.8	31.0	0.745	102	268	0.106	0.110
3KSMC64A	CCA	71.1	78.6	1.0	64	2.0	20	103	29.1	0.838	108	253	0.116	0.110
3KSMC70A	CCB	77.8	86.0	1.0	70	2.0	20	113	26.5	1.019	118	232	0.138	0.110
3KSMC75A	CCC	83.3	92.1	1.0	75	2.0	20	121	24.8	1.165	126	217	0.156	0.110
3KSMC78A	CCD	86.7	95.8	1.0	78	2.0	20	126	23.8	1.269	132	207	0.175	0.110

Notes: (1) Pulse Test: tp≤50 ms
(2) Surge current waveform per fig. 3 and derate per fig. 2
• All terms and symbols are consistent with ANSI / IEEE C62.35
(3) Marking code

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Rating and Characteristics (Ta 25 °C unless otherwise noted)

DEVICE TYPE	MC	VBR @ IT (1)			IR @ VR		IRM @	VCL @ IPP		RD	VCL @ IPP		RD	αT
Bidirectional	(3)	(V)			(V) (μA)		T _j = 150°C (μA)	10/1000 μs		10/1000 μs	8/20 μs		8/20 μs	(%/°C)
		min	max	mA				(V)	(A)	(Ω)	(V)	(A)	(Ω)	
3KSMC8.5CA	CBT	9.44	10.4	1.0	8.5	10.0	50	14.4	208.4	0.020	19.9	1389	0.006	0.070
3KSMC10CA	CBU	11.1	12.3	1.0	10	5.0	50	17.0	177	0.026	22.5	1217	0.008	0.075
3KSMC11CA	CBV	12.2	13.5	1.0	11	5.0	50	18.2	165	0.028	23.7	1156	0.009	0.075
3KSMC12CA	CBW	13.3	14.7	1.0	12	2.0	20	19.9	151	0.034	25.4	1078	0.010	0.080
3KSMC13CA	CBX	14.4	15.9	1.0	13	2.0	20	21.5	140	0.040	27.0	1014	0.011	0.080
3KSMC14CA	CBY	15.6	17.2	1.0	14	1.0	10	23.2	129	0.046	28.7	955	0.012	0.085
3KSMC15CA	CBZ	16.7	18.5	1.0	15	1.0	10	24.4	123	0.048	30.0	910	0.013	0.085
3KSMC16CA	CCE	17.8	19.7	1.0	16	1.0	10	26.0	115	0.055	31.5	870	0.013	0.085
3KSMC17CA	CCF	18.9	20.9	1.0	17	1.0	10	27.6	109	0.061	33.1	827	0.015	0.075
3KSMC18CA	CCG	20.0	22.1	1.0	18	1.0	10	29.2	103	0.069	35.0	790	0.016	0.090
3KSMC20CA	CCH	22.2	24.5	1.0	20	1.0	10	32.4	92.6	0.085	37.5	730	0.018	0.090
3KSMC22CA	CBA	24.4	26.9	1.0	22	1.0	10	35.5	84.5	0.102	40.5	680	0.020	0.095
3KSMC24CA	CBB	26.7	29.5	1.0	24	1.0	10	38.9	77.1	0.122	43.9	630	0.023	0.095
3KSMC26CA	CBC	28.9	31.9	1.0	26	1.0	10	42.1	71.3	0.143	42.0	600	0.025	0.095
3KSMC28CA	CBD	31.1	34.4	1.0	28	1.0	10	45.4	66.1	0.166	50.0	560	0.028	0.095
3KSMC30CA	CBE	33.3	36.8	1.0	30	1.0	15	48.4	62.0	0.187	53.0	530	0.030	0.095
3KSMC33CA	CBF	36.7	40.6	1.0	33	1.0	15	53.3	56.3	0.226	58.0	490	0.035	0.100
3KSMC36CA	CBG	40.0	44.2	1.0	36	1.0	20	58.1	51.6	0.269	62.7	437	0.042	0.100
3KSMC40CA	CBH	44.4	49.1	1.0	40	1.0	20	64.5	46.5	0.331	69.0	396	0.050	0.105
3KSMC43CA	CBI	47.8	52.8	1.0	43	1.0	20	69.4	43.2	0.384	73.9	371	0.057	0.105
3KSMC45CA	CBJ	50.0	55.3	1.0	45	2.0	20	72.7	41.3	0.421	77.4	354	0.062	0.105
3KSMC48CA	CBK	53.3	58.9	1.0	48	2.0	20	77.4	38.8	0.477	82.0	334	0.069	0.105
3KSMC51CA	CBL	56.7	62.7	1.0	51	2.0	20	82.4	36.4	0.541	87.0	314	0.077	0.105
3KSMC54CA	CBM	60.0	66.3	1.0	54	2.0	20	87.1	34.4	0.605	91.7	298	0.085	0.105
3KSMC58CA	CBN	64.4	71.2	1.0	58	2.0	20	93.6	32.1	0.698	98.3	278	0.097	0.110
3KSMC60CA	CBO	66.7	73.7	1.0	60	2.0	20	96.8	31.0	0.745	102	268	0.106	0.110
3KSMC64CA	CBP	71.1	78.6	1.0	64	2.0	20	103	29.1	0.838	108	253	0.116	0.110
3KSMC70CA	CBQ	77.8	86.0	1.0	70	2.0	20	113	26.5	1.019	118	232	0.138	0.110
3KSMC75CA	CBR	83.3	92.1	1.0	75	2.0	20	121	24.8	1.165	126	217	0.156	0.110
3KSMC78CA	CBS	86.7	95.8	1.0	78	2.0	20	126	23.8	1.269	132	207	0.175	0.110

- Notes:**
- (1) Pulse Test: tp ≤ 50 ms
 - (2) Surge current waveform per fig. 3 and derate per fig. 2
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Rating and Characteristics (T_a 25 °C unless otherwise noted)

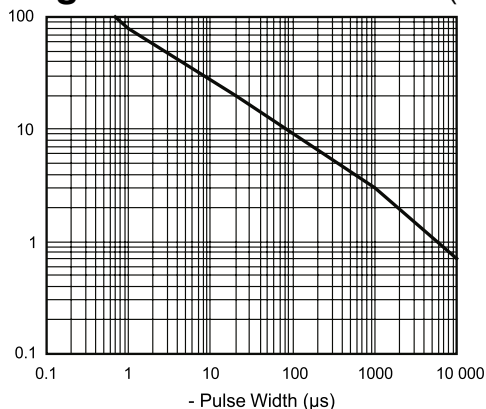


Fig. 1 - Peak Pulse Power Rating Curve

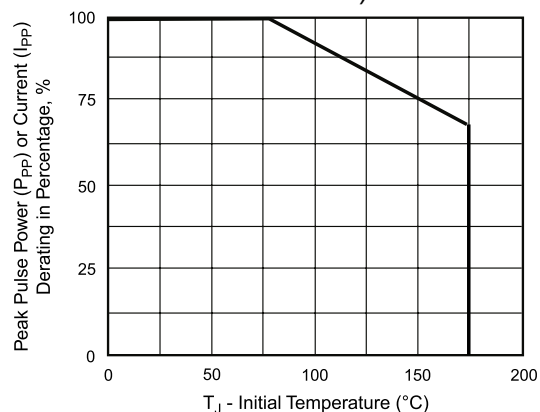


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

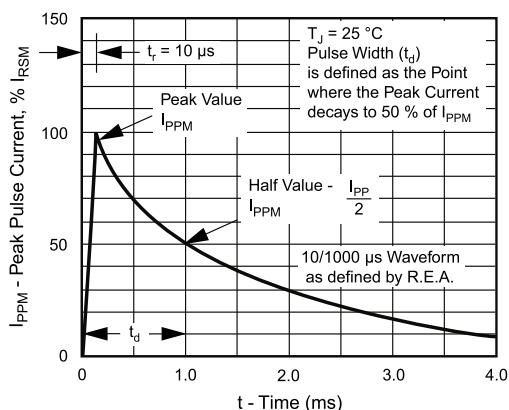


Fig. 3 - Pulse Waveform

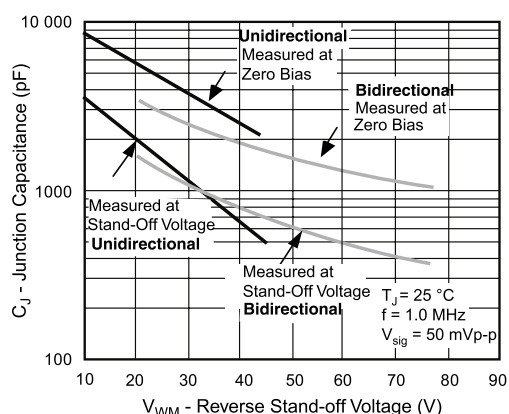


Fig. 4 - Typical Junction Capacitance

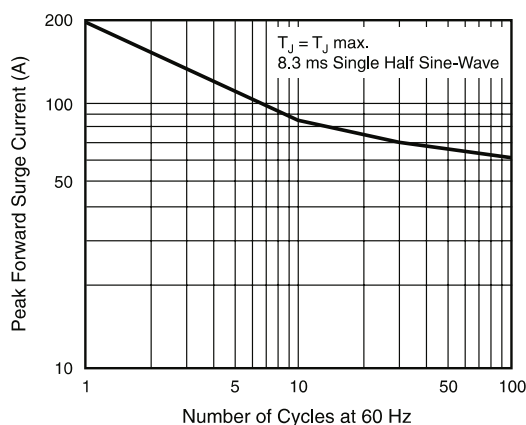


Fig. 5 - Maximum Non-Repetitive/Peak Forward Surge Current

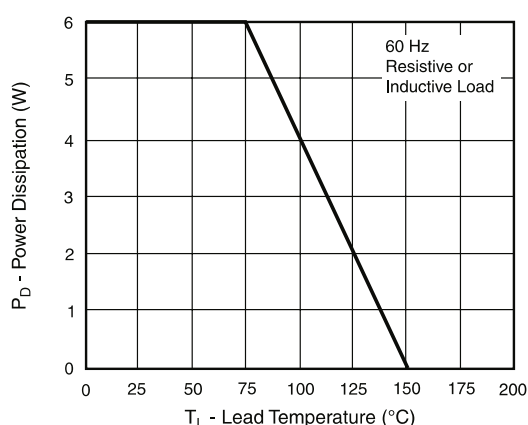


Fig. 6 - Power Derating Curve

3000 W Surface Mount Transient Voltage Suppressor**Revision History**

DATE	REVISION	DESCRIPTION OF CHANGES
21-Feb-2018	0	Original Data Sheet
09-Jan-2022	1	Qualification at 175 °C of Tj

All product, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.

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