5.0SMDJ11(C)A THRU 5.0SMDJ440(C)A

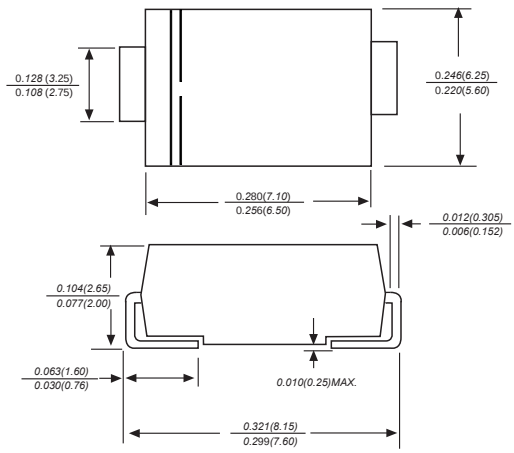
Stand-off Voltage - 11 to 440 Volts Peak Pulse Power: 5000 Watts

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Features

- 5000 W peak pulse power capability with a 10/1000 μs waveform
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- Meets MSL level 1

DO-214AB/SMC



Dimensions in inches and (millimeters)

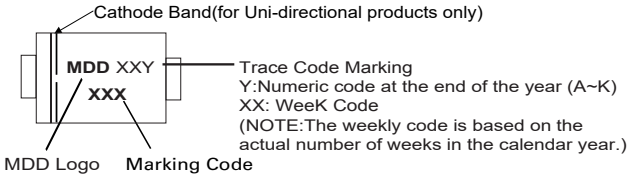
Mechanical Data

- **Package**: DO-214AB (SMC)
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** For uni-directional types the band denotes cathode end, no marking on bi-directional types

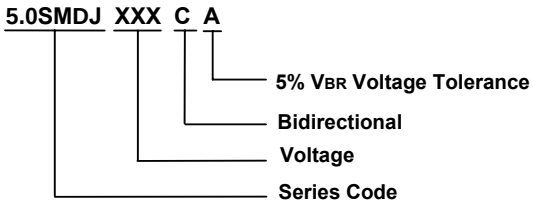
Applications

Use 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, telecommunication.

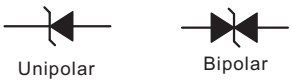
Marking Code



Part Number Code



Circuit Diagram



MAXIMUM RATINGS AND CHARACTERISTICS			
Ratings at 25℃ ambient temperature unless otherwise specified.			
Peak pulse power dissipation at 10/1000μs waveform (Note1, Note2)	P_{PPM}	5000	W
Maximum Instantaneous Forward Voltage at 100A for Unidirectional only(Note4)	V_F	3.5/5.0	V
Steady state power dissipation at TA=75℃(Note2)	P_D	6.5	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3)	I_{FSM}	300	A
Operating junction and Storage Temperature Range.	T_J,T_{STG}	-55 to +150	℃
Typical thermal resistance junction to lead(Note5)	$R_{\theta JL}$	15	℃/W
Typical thermal resistance junction to ambient(Note5)	$R_{\theta JA}$	75	℃/W

Notes: (1) Non-repetitive current pulse, per Fig. 3 and derated above T_A= 25℃ per Fig.2.
(2) Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal
(3) Measured on 8.3ms single half sine-wave or equivalent square wave,duty cycle=4 pulses per minute maximum.
(4) V_F=3.5V Max for devices of V_{BR}≤85V，and V_F=5.0V Max for devices of V_{BR}＞85V.
(5) Mounted on minimum recommended pad layout.

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP}[2] (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
		Min(V)	Max (V)	I_T[1](mA)				
5.0SMDJ11A	5.0SMDJ11CA	12.2	13.5	1.0	5.0	11.0	274.7	18.2
5.0SMDJ12A	5.0SMDJ12CA	13.3	14.7	1.0	5.0	12.0	251.3	19.9
5.0SMDJ13A	5.0SMDJ13CA	14.4	15.9	1.0	5.0	13.0	232.6	21.5
5.0SMDJ14A	5.0SMDJ14CA	15.6	17.2	1.0	5.0	14.0	215.5	23.2
5.0SMDJ15A	5.0SMDJ15CA	16.7	18.5	1.0	5.0	15.0	204.9	24.4
5.0SMDJ16A	5.0SMDJ16CA	17.8	19.7	1.0	5.0	16.0	192.3	26
5.0SMDJ17A	5.0SMDJ17CA	18.9	20.9	1.0	5.0	17.0	181.2	27.6
5.0SMDJ18A	5.0SMDJ18CA	20.0	22.1	1.0	5.0	18.0	171.2	29.2
5.0SMDJ19A	5.0SMDJ19CA	21.1	23.3	1.0	5.0	19.0	162.3	30.8
5.0SMDJ20A	5.0SMDJ20CA	22.2	24.5	1.0	5.0	20.0	154.3	32.4
5.0SMDJ22A	5.0SMDJ22CA	24.4	26.9	1.0	5.0	22.0	140.8	35.5
5.0SMDJ24A	5.0SMDJ24CA	26.7	29.5	1.0	5.0	24.0	128.5	38.9
5.0SMDJ26A	5.0SMDJ26CA	28.9	31.9	1.0	5.0	26.0	118.8	42.1
5.0SMDJ28A	5.0SMDJ28CA	31.1	34.4	1.0	5.0	28.0	110.1	45.4
5.0SMDJ30A	5.0SMDJ30CA	33.3	36.8	1.0	5.0	30.0	103.3	48.4
5.0SMDJ33A	5.0SMDJ33CA	36.7	40.6	1.0	5.0	33.0	93.8	53.3
5.0SMDJ36A	5.0SMDJ36CA	40.0	44.2	1.0	5.0	36.0	86.1	58.1
5.0SMDJ40A	5.0SMDJ40CA	44.4	49.1	1.0	5.0	40.0	77.5	64.5
5.0SMDJ43A	5.0SMDJ43CA	47.8	52.8	1.0	5.0	43.0	72.0	69.4
5.0SMDJ45A	5.0SMDJ45CA	50.0	55.3	1.0	5.0	45.0	68.8	72.7
5.0SMDJ48A	5.0SMDJ48CA	53.3	58.9	1.0	5.0	48.0	64.6	77.4
5.0SMDJ51A	5.0SMDJ51CA	56.7	62.7	1.0	5.0	51.0	60.7	82.4
5.0SMDJ54A	5.0SMDJ54CA	60.0	66.3	1.0	5.0	54.0	57.4	87.1
5.0SMDJ58A	5.0SMDJ58CA	64.4	71.2	1.0	5.0	58.0	53.4	93.6
5.0SMDJ60A	5.0SMDJ60CA	66.7	73.7	1.0	5.0	60.0	51.7	96.8
5.0SMDJ64A	5.0SMDJ64CA	71.1	78.6	1.0	5.0	64.0	48.5	103
5.0SMDJ70A	5.0SMDJ70CA	77.8	86.0	1.0	5.0	70.0	44.2	113
5.0SMDJ75A	5.0SMDJ75CA	83.3	92.1	1.0	5.0	75.0	41.3	121
5.0SMDJ78A	5.0SMDJ78CA	86.7	95.8	1.0	5.0	78.0	39.7	126
5.0SMDJ80A	5.0SMDJ80CA	88.96	97.6	1.0	5.0	80.0	38.6	129.6
5.0SMDJ85A	5.0SMDJ85CA	94.4	104.0	1.0	5.0	85.0	36.5	137
5.0SMDJ90A	5.0SMDJ90CA	100.0	111.0	1.0	5.0	90.0	34.2	146
5.0SMDJ100A	5.0SMDJ100CA	111.0	123.0	1.0	5.0	100.0	30.9	162
5.0SMDJ110A	5.0SMDJ110CA	122.0	135.0	1.0	5.0	110.0	28.2	177
5.0SMDJ120A	5.0SMDJ120CA	133.0	147.0	1.0	5.0	120.0	25.9	193
5.0SMDJ130A	5.0SMDJ130CA	144.0	159.0	1.0	5.0	130.0	23.9	209
5.0SMDJ140A	5.0SMDJ140CA	155.0	171.0	1.0	5.0	140.0	22.0	226.8
5.0SMDJ150A	5.0SMDJ150CA	167.0	185.0	1.0	5.0	150.0	20.6	243
5.0SMDJ160A	5.0SMDJ160CA	178.0	197.0	1.0	5.0	160.0	19.3	259
5.0SMDJ170A	5.0SMDJ170CA	189.0	209.0	1.0	5.0	170.0	18.2	275

Electrical Characteristics (TA=25℃ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP}[2] (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
		Min(V)	Max (V)	I_T[1](mA)				
5.0SMDJ180A	5.0SMDJ180CA	200.2	220.0	1.0	5.0	180.0	17.1	291.6
5.0SMDJ190A	5.0SMDJ190CA	211.0	232.0	1.0	5.0	190.0	16.2	307.8
5.0SMDJ200A	5.0SMDJ200CA	224.0	247.0	1.0	5.0	200.0	15.4	324
5.0SMDJ220A	5.0SMDJ220CA	246.0	272.0	1.0	5.0	220.0	14.0	356
5.0SMDJ250A	5.0SMDJ250CA	279.0	309.0	1.0	5.0	250.0	12.3	405
5.0SMDJ300A	5.0SMDJ300CA	335.0	371.0	1.0	5.0	300.0	10.3	486
5.0SMDJ350A	5.0SMDJ350CA	391.0	432.0	1.0	5.0	350.0	8.8	567
5.0SMDJ400A	5.0SMDJ400CA	447.0	494.0	1.0	5.0	400.0	7.7	648
5.0SMDJ440A	5.0SMDJ440CA	492.0	543.0	1.0	5.0	440.0	7.0	713

Characteristics(Typical)

FIG1:Peak Pulse Power Rating Curve

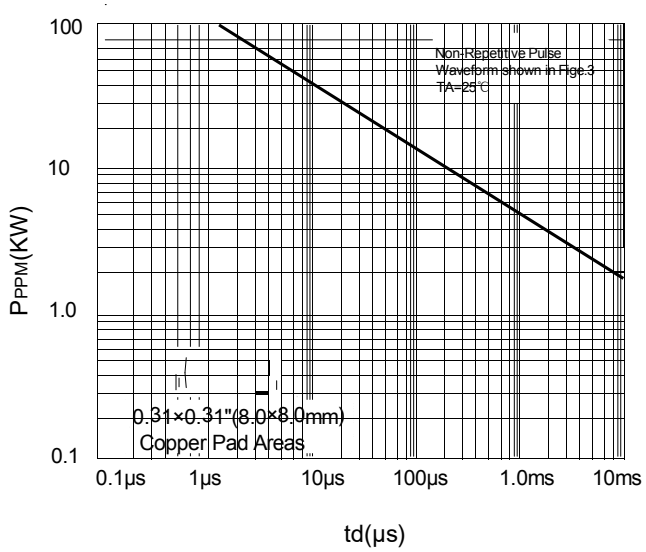


FIG2: Pulse Power or Current vs. Initial Junction Temperature

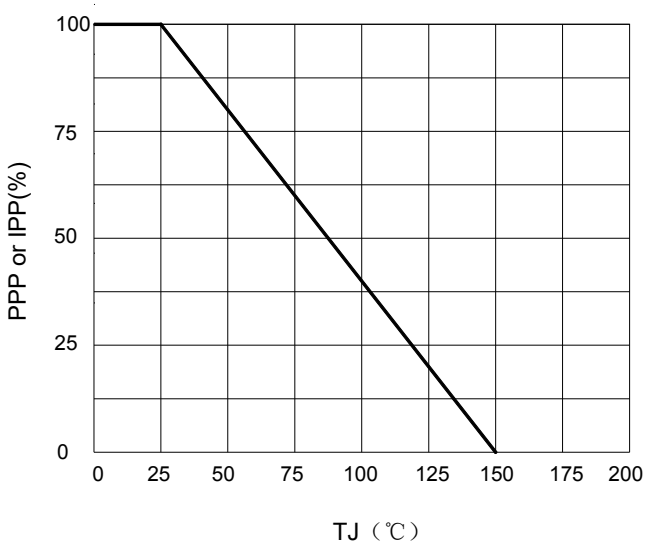


FIG3: Pulse Waveform

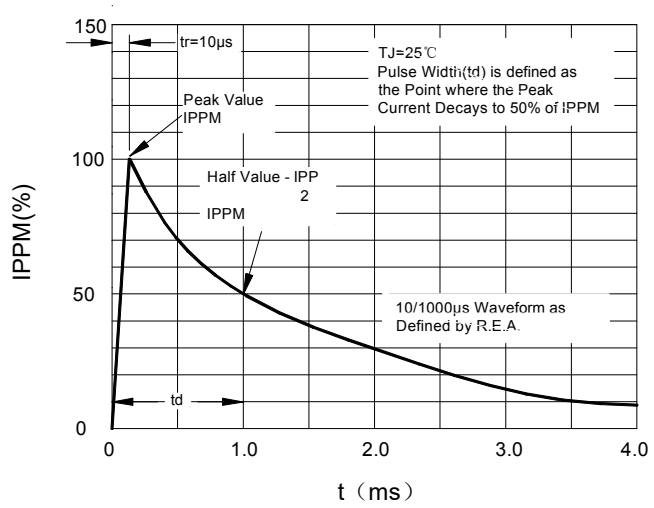


FIG4:Typical Transient Thermal Impedance

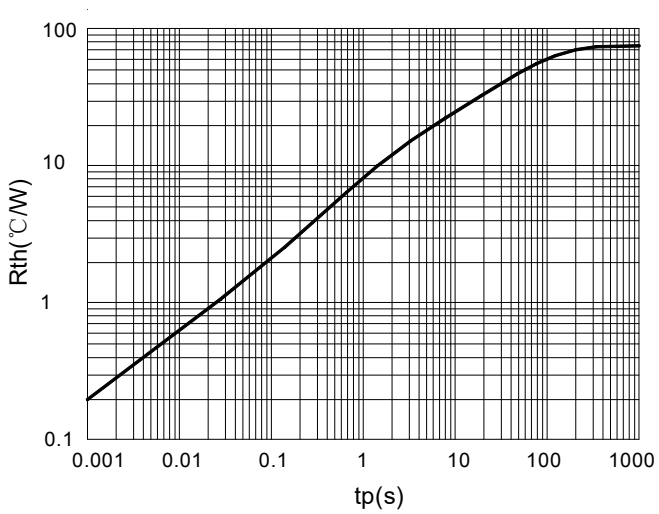


FIG5: Maximum Non-Repetitive Surge Current

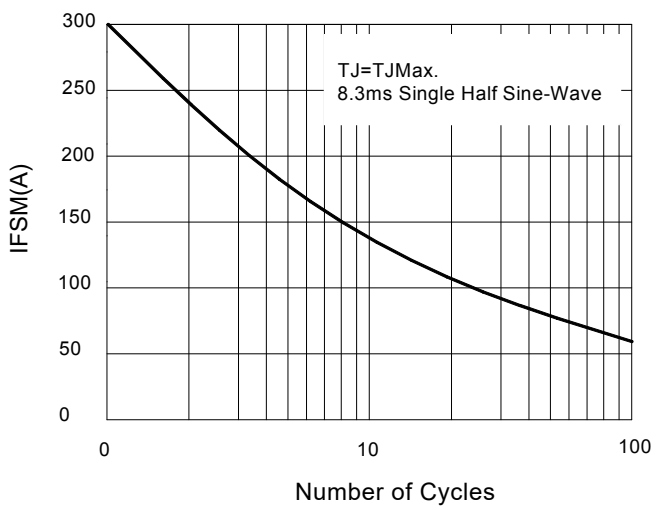
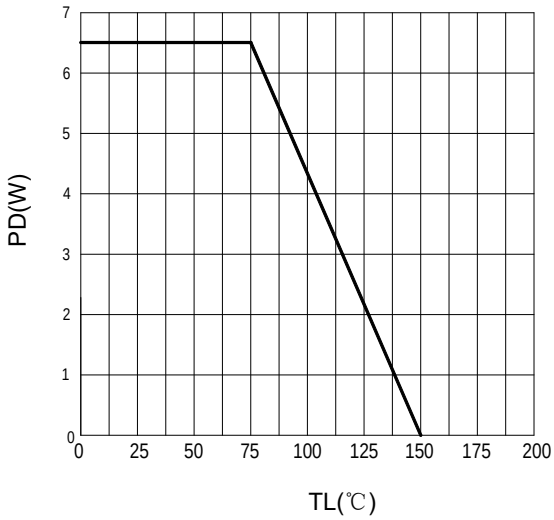
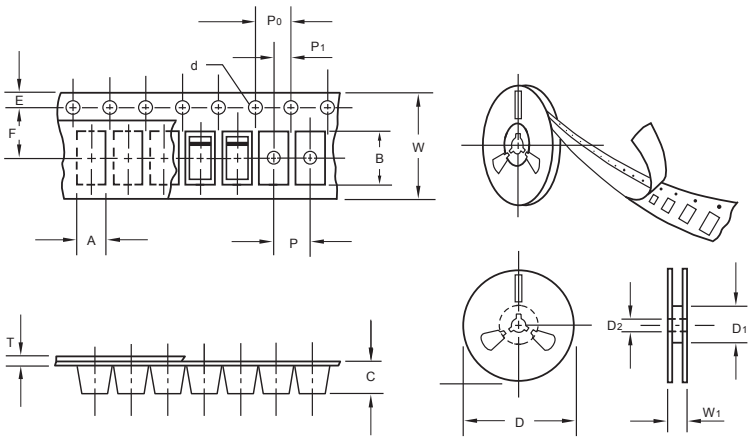


FIG6:Steady State Power Dissipation



Packing information



unit:mm

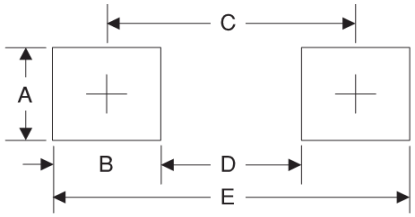
Item	Symbol	Tolerance	SMC
Carrier width	A	0.1	6.15
Carrier length	B	0.1	8.41
Carrier depth	C	0.1	2.42
Sprocket hole	d	0.05	1.50
13" Reel outside diameter	D	2.0	330.00
13" Reel inner diameter	D_1	min	50.00
Feed hole diameter	D_2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	7.50
Punch hole pitch	P	0.1	8.00
Sprocket hole pitch	P_0	0.1	4.00
Embossment center	P_1	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	16.00
Reel width	W_1	1.0	16.50

Note:Devices are packed in accor dance with EIA standar RS-481-A and specifications listed above.

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (mm)	BOX (pcs)	INNER BOX (mm)	REEL DIA, (mm)	CARTON SIZE (mm)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SMC	13"	3,000	4.0	6000	340*350*47	330	370*370*370	42000	14.0

Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	4.3	0.170
B	4.1	0.160
C	7.9	0.311
D	3.8	0.150
E	12	0.472

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