

# 5.0SMDJ11A(CA) - 5.0SMDJ440A(CA)

# SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR DIODES

VOLTAGE RANGE: 11 - 440V POWER: 5000Watts

### **Features**

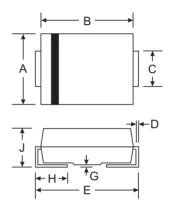
- For surface mount application
- Built-in strain relief
- Excellent clamping capability
- Low profile package
- Fast response time: Typically less than
- 1.0ps from 0 volt to BV min.
  Typical I<sub>R</sub> less than 1µA above 10V



- Case:DO-214AB(SMC)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Lead Free Plating (Matte Tin Finish).
  Solderable per MIL-STD-202, Method 208
- Marking: Date Code and Marking Code See Page 2
- Weight: 0.21 grams (approximate)







SMC/DO-214AB						
06,2 0 2 :, 12						
Dim	Min	Max				
Α	5.59	6.22				
В	6.60	7.11				
С	2.75	3.18				
D	0.15	0.31				
E	7.75	8.13				
G	0.10	0.20				
Н	0.76	1.52				
J	2.00	2.62				
All Dimensions in mm						

# Maximum Ratings and Electrical Characteristics T<sub>A</sub> = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

RATINGS	SYMBOL	VALUE	UNITS	
Peak Power Dissipation at Ta=25°C, Tp=1ms(NOTE 1)	Ррк	Minimum 5000	Watts	
Power Dissipation on infinite heatsink at TL=75°C	Рь	6.5	Watts	
Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3)	Ігѕм	300	Amps	
Maximum Instantenous Forward Voltage at 100A for Unidirectional only	VF	3.5/5.0	Volts	
Operating and Storage Temperature Range	Тл, Твтс	-55 to +150	°C	

#### NOTES

- 1. Non-repetitive current pulse per Fig. 3 and derated above T<sub>A</sub>=25°C per Fig. 2.
- 2. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.
- 3. VF<3.5V for devices of VBR<200V and VF<5.0V for devices of VBR>201V.



5.0SMDJ11A    5.0S      5.0SMDJ12    5.0S      5.0SMDJ12A    5.0S      5.0SMDJ13    5.0S      5.0SMDJ13A    5.0S      5.0SMDJ14    5.0S      5.0SMDJ15    5.0S      5.0SMDJ15    5.0S      5.0SMDJ16    5.0S      5.0SMDJ16A    5.0S      5.0SMDJ17    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ18    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22A    5.0S	SMDJ11C SMDJ11CA SMDJ12C SMDJ12CA	VR (V) 11.0 11.0	Min (V) 12.20	<b>Max (V)</b> 14.90	Iτ (mA)	IR (μA)	lpp (A)	Vc (V)
5.0SMDJ11A      5.0S        5.0SMDJ12      5.0S        5.0SMDJ12A      5.0S        5.0SMDJ13      5.0S        5.0SMDJ13A      5.0S        5.0SMDJ14      5.0S        5.0SMDJ14A      5.0S        5.0SMDJ15      5.0S        5.0SMDJ15A      5.0S        5.0SMDJ16A      5.0S        5.0SMDJ16A      5.0S        5.0SMDJ17      5.0S        5.0SMDJ17A      5.0S        5.0SMDJ18A      5.0S        5.0SMDJ19      5.0S        5.0SMDJ19A      5.0S        5.0SMDJ20      5.0S        5.0SMDJ20A      5.0S        5.0SMDJ22A      5.0S	SMDJ11CA SMDJ12C	11.0		14.00	4.0			( - /
5.0SMDJ12      5.0S        5.0SMDJ12A      5.0S        5.0SMDJ13      5.0S        5.0SMDJ13A      5.0S        5.0SMDJ14      5.0S        5.0SMDJ14A      5.0S        5.0SMDJ15      5.0S        5.0SMDJ15A      5.0S        5.0SMDJ16A      5.0S        5.0SMDJ16A      5.0S        5.0SMDJ17      5.0S        5.0SMDJ17A      5.0S        5.0SMDJ18A      5.0S        5.0SMDJ18A      5.0S        5.0SMDJ19      5.0S        5.0SMDJ19A      5.0S        5.0SMDJ20      5.0S        5.0SMDJ20A      5.0S        5.0SMDJ22A      5.0S	SMDJ12C			14.30	10	800	248.76	20.1
5.0SMDJ12A      5.0S        5.0SMDJ13      5.0S        5.0SMDJ13A      5.0S        5.0SMDJ14      5.0S        5.0SMDJ14A      5.0S        5.0SMDJ15      5.0S        5.0SMDJ15A      5.0S        5.0SMDJ16A      5.0S        5.0SMDJ16A      5.0S        5.0SMDJ17      5.0S        5.0SMDJ17A      5.0S        5.0SMDJ18      5.0S        5.0SMDJ18      5.0S        5.0SMDJ19      5.0S        5.0SMDJ19A      5.0S        5.0SMDJ20      5.0S        5.0SMDJ20A      5.0S        5.0SMDJ22A      5.0S			12.20	13.50	10	800	274.73	18.2
5.0SMDJ13    5.0S      5.0SMDJ13A    5.0S      5.0SMDJ14    5.0S      5.0SMDJ15A    5.0S      5.0SMDJ15A    5.0S      5.0SMDJ16A    5.0S      5.0SMDJ16A    5.0S      5.0SMDJ17    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ18    5.0S      5.0SMDJ18    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ12CA	12.0	13.30	16.30	10	800	227.27	22.0
5.0SMDJ13A    5.0S      5.0SMDJ14    5.0S      5.0SMDJ15    5.0S      5.0SMDJ15    5.0S      5.0SMDJ15A    5.0S      5.0SMDJ16    5.0S      5.0SMDJ16A    5.0S      5.0SMDJ17    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ18    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22A    5.0S      5.0SMDJ22A    5.0S		12.0	13.30	14.70	10	800	251.26	19.9
5.0SMDJ14    5.0S      5.0SMDJ15A    5.0S      5.0SMDJ15A    5.0S      5.0SMDJ16A    5.0S      5.0SMDJ16A    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22A    5.0S      5.0SMDJ22A    5.0S	SMDJ13C	13.0	14.40	17.60	10	500	210.08	23.8
5.0SMDJ14A    5.0S      5.0SMDJ15    5.0S      5.0SMDJ15A    5.0S      5.0SMDJ16    5.0S      5.0SMDJ16A    5.0S      5.0SMDJ17    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ18    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ13CA	13.0	14.40	15.90	10	500	232.56	21.5
5.0SMDJ15    5.0S      5.0SMDJ15A    5.0S      5.0SMDJ16    5.0S      5.0SMDJ16A    5.0S      5.0SMDJ17    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ18    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ14C	14.0	15.60	19.10	10	200	193.80	25.8
5.0SMDJ15A    5.0S      5.0SMDJ16    5.0S      5.0SMDJ16A    5.0S      5.0SMDJ17    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ14CA	14.0	15.60	17.20	10	200	215.52	23.2
5.0SMDJ15A    5.0S      5.0SMDJ16    5.0S      5.0SMDJ16A    5.0S      5.0SMDJ17    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ15C	15.0	16.70	20.40	1	100	185.87	26.9
5.0SMDJ16    5.0S      5.0SMDJ16A    5.0S      5.0SMDJ17    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ18    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ15CA	15.0	16.70	18.50	1	100	204.92	24.4
5.0SMDJ16A    5.0S      5.0SMDJ17    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ18    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ16C	16.0	17.80	21.80	1	50	173.61	28.8
5.0SMDJ17    5.0S      5.0SMDJ17A    5.0S      5.0SMDJ18    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ16CA	16.0	17.80	19.70	1	50	192.31	26.0
5.0SMDJ17A    5.0S      5.0SMDJ18    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ17C	17.0	18.90	23.10	1	20	163.93	30.5
5.0SMDJ18    5.0S      5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ17CA	17.0	18.90	20.90	1	20	181.16	27.6
5.0SMDJ18A    5.0S      5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ18C	18.0	20.00	24.40	1	10	155.28	32.2
5.0SMDJ19    5.0S      5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ18CA	18.0	20.00	22.10	1	10	171.23	29.2
5.0SMDJ19A    5.0S      5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ19C	19.0	21.10	25.76	1	10	147.06	34.0
5.0SMDJ20    5.0S      5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S	SMDJ19CA	19.0	21.10	23.30	1	10	162.34	30.8
5.0SMDJ20A    5.0S      5.0SMDJ22    5.0S      5.0SMDJ22A    5.0S		20.0		27.10	1	5		
5.0SMDJ22 5.0S 5.0SMDJ22A 5.0S			22.20		<b>+</b>		139.66	35.8
5.0SMDJ22A 5.0S	SMDJ20CA	20.0	22.20	24.50	1	5	154.32	32.4
	SMDJ22C	22.0	24.40	29.80	1	5	126.90	39.4
	SMDJ22CA	22.0	24.40	26.90	1	5	140.85	35.5
	SMDJ24C	24.0	26.70	32.60	1	5	116.28	43.0
	SMDJ24CA	24.0	26.70	29.50	1	5	128.53	38.9
	SMDJ26C	26.0	28.90	35.30	1	5	107.30	46.6
	SMDJ26CA	26.0	28.90	31.90	1	5	118.76	42.1
	SMDJ28C	28.0	31.10	38.00	1	5	100.00	50.0
	SMDJ28CA	28.0	31.10	34.40	1	5	110.13	45.4
	SMDJ30C	30.0	33.30	40.70	1	5	93.46	53.5
	SMDJ30CA	30.0	33.30	36.80	1	5	103.31	48.4
	SMDJ33C	33.0	36.70	44.90	1	5	84.75	59.0
	SMDJ33CA	33.0	36.70	40.60	1	5	93.81	53.3
5.0SMDJ36 5.0S	SMDJ36C	36.0	40.00	48.90	1	5	77.76	64.3
5.0SMDJ36A 5.0S	SMDJ36CA	36.0	40.00	44.20	1	5	86.06	58.1
5.0SMDJ40 5.0S	SMDJ40C	40.0	44.40	54.30	1	5	70.03	71.4
5.0SMDJ40A 5.0S	SMDJ40CA	40.0	44.40	49.10	1	5	77.52	64.5
5.0SMDJ43 5.0S	SMDJ43C	43.0	47.80	58.40	1	5	65.19	76.7
5.0SMDJ43A 5.0S	SMDJ43CA	43.0	47.80	52.80	1	5	72.05	69.4
5.0SMDJ45 5.0S	SMDJ45C	45.0	50.00	61.10	1	5	62.27	80.3
5.0SMDJ45A 5.0S	SMDJ45CA	45.0	50.00	55.30	1	5	68.78	72.7
5.0SMDJ48 5.0S	SMDJ48C	48.0	53.30	65.10	1	5	58.48	85.5
5.0SMDJ48A 5.0S	SMDJ48CA	48.0	53.30	58.90	1	5	64.60	77.4
	SMDJ51C	51.0	56.70	69.30	1	5	54.88	91.1
	SMDJ51CA	51.0	56.70	62.70	1	5	60.68	82.4
	SMDJ54C	54.0	60.00	73.30	1	5	51.92	96.3
	SMDJ54CA	54.0	60.00	66.30	1	5	57.41	87.1
		58.0	64.40	78.70	1	5	48.54	103.0
	SIMI ).158C:		, JT.70	10.10				. 00.0
	SMDJ58C SMDJ58CA		-		1		53 42	93.6
	SMDJ58CA	58.0	64.40	71.20	1	5	53.42 46.73	93.6 107.0
	SMDJ58CA SMDJ60C	58.0 60.0	64.40 66.70	71.20 81.50	1	5 5	46.73	107.0
5.0SMDJ64A 5.0S	SMDJ58CA	58.0	64.40	71.20		5		



Part Number (Uni)	Part Number (Bi)	Reverse Standoff Voltage	Breakdown Voltage V <sub>BR</sub> @ Іт			Maximum Reverse Leakage @ VR	Maximum Peak Pulse Current	Clamping Voltage @ lpp
		VR (V)	Min (V)	Max (V)	I⊤ (mA)	IR (μA)	Ipp (A)	Vc (V)
5.0SMDJ70	5.0SMDJ70C	70.0	77.80	95.10	1	5	40.00	125.0
5.0SMDJ70A	5.0SMDJ70CA	70.0	77.80	86.00	1	5	44.25	113.0
5.0SMDJ75	5.0SMDJ75C	75.0	83.30	102.00	1	5	37.31	134.0
5.0SMDJ75A	5.0SMDJ75CA	75.0	83.30	92.10	1	5	41.32	121.0
5.0SMDJ78	5.0SMDJ78C	78.0	86.70	106.00	1	5	35.97	139.0
5.0SMDJ78A	5.0SMDJ78CA	78.0	86.70	95.80	1	5	39.68	126.0
5.0SMDJ85	5.0SMDJ85C	85.0	94.40	115.00	1	5	33.11	151.0
5.0SMDJ85A	5.0SMDJ85CA	85.0	94.40	104.00	1	5	36.50	137.0
5.0SMDJ90	5.0SMDJ90C	90.0	100.00	122.00	1	5	31.25	160.0
5.0SMDJ90A	5.0SMDJ90CA	90.0	100.00	111.00	1	5	34.25	146.0
5.0SMDJ100	5.0SMDJ100C	100.0	111.00	136.00	1	5	27.93	179.0
5.0SMDJ100A	5.0SMDJ100CA	100.0	111.00	123.00	1	5	30.86	162.0
5.0SMDJ110	5.0SMDJ110C	110.0	122.00	149.00	1	5	25.51	196.0
5.0SMDJ110A	5.0SMDJ110CA	110.0	122.00	135.00	1	5	28.25	177.0
5.0SMDJ120	5.0SMDJ120C	120.0	133.00	163.00	1	5	23.36	214.0
5.0SMDJ120A	5.0SMDJ120CA	120.0	133.00	147.00	1	5	25.91	193.0
5.0SMDJ130	5.0SMDJ130C	130.0	144.00	176.00	1	5	21.65	231.0
5.0SMDJ130A	5.0SMDJ130CA	130.0	144.00	159.00	1	5	23.92	209.0
5.0SMDJ150	5.0SMDJ150C	150.0	167.00	204.00	1	5	18.66	268.0
5.0SMDJ150A	5.0SMDJ150CA	150.0	167.00	185.00	1	5	20.58	243.0
5.0SMDJ160	5.0SMDJ160C	160.0	178.00	218.00	1	5	17.42	287.0
5.0SMDJ160A	5.0SMDJ160CA	160.0	178.00	197.00	1	5	19.31	259.0
5.0SMDJ170	5.0SMDJ170C	170.0	189.00	231.00	1	5	16.45	304.0
5.0SMDJ170A	5.0SMDJ170CA	170.0	189.00	209.00	1	5	18.18	275.0
5.0SMDJ180	5.0SMDJ180C	180.0	200.00	244.00	1	5	15.52	322.2
5.0SMDJ180A	5.0SMDJ180CA	180.0	200.00	220.00	1	5	17.15	291.6
5.0SMDJ190	5.0SMDJ190C	190.0	211.00	258.00	1	5	14.70	340.1
5.0SMDJ190A	5.0SMDJ190CA	190.0	211.00	232.00	1	5	16.24	307.8
5.0SMDJ200A	5.0SMDJ200CA	200.0	224.00	247.00	1	5	15.43	324.0
5.0SMDJ220A	5.0SMDJ220CA	220.0	246.00	272.00	1	5	14.04	356.0
5.0SMDJ250A	5.0SMDJ250CA	250.0	279.00	309.00	1	5	12.35	405.0
5.0SMDJ300A	5.0SMDJ300CA	300.0	335.00	371.00	1	5	10.29	486.0
5.0SMDJ350A	5.0SMDJ350CA	350.0	391.00	432.00	1	5	8.82	567.0
5.0SMDJ400A	5.0SMDJ400CA	400.0	447.00	494.00	1	5	7.72	648.0
5.0SMDJ440A	5.0SMDJ440CA	440.0	492.00	543.00	1	5	7.01	713.0



## RATING AND CHARACTERISTIC CURVES (5.0SMDJ SERIES)

100

75

50

25

0 0

PEAK PULSE POWER(Ppp) OR CURRENT(IPp) DERATING IN PERCENTAGE

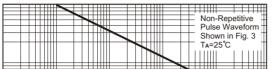
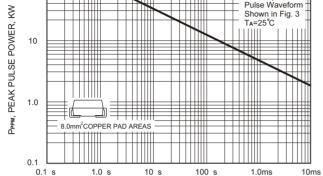


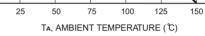
FIG.1-PEAK PULSE POWER DERATING CURVE



100

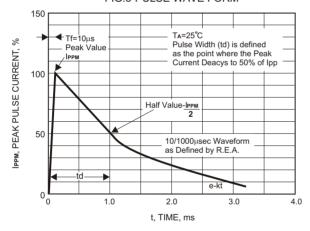


FIG.2-PULSE DERATING CURVE



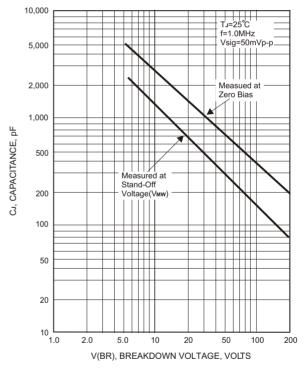


td, PULSE WIDTH, sec.



#### FIG.4-TYPICAL JUNCTION CAPACITANCE

175



#### FIG.5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

