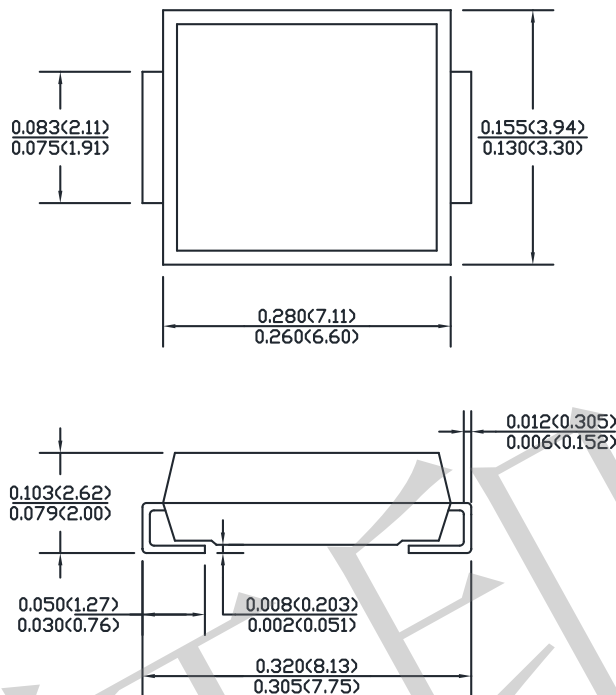




Transient Voltage Suppressor

Breakdown Voltage 5.5 to 171 Volts
Peak Pulse Power 1500 Watts

CASE: SMC (DO214AB)



Dimensions in inches and (millimeters)

Features

- Breakdown Voltages (V_{BR}) from 5.5 to 171V
- 1500W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle):0.01%
- Fast Response Time
- Low incremental surge resistance
- Excellent clamping capability
- High temperature soldering guaranteed: 265°C /10 seconds, 0.375" (9.5mm) lead length, 5lbs. (2.3kg) tension

Application

- Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFE, signal lines of sensor units for consumer, computer, industrial, automotive and telecommunication

Mechanical Data

- **Case:** Void-free transfer molded thermosetting epoxy body meeting UL94V-O
- **Terminals:** Tin-Lead or ROHS Compliant annealed matte-Tin plating readily solderable per MIL-STD-750, Method 2026
- **Marking:** Body marked with part number
- **Polarity:** Cathode indicated by band
- **Weight:** 0.21g (Approximately)

Maximum Ratings and Electrical Characteristics @ 25°C unless otherwise specified

Symbol	Conditions	Value	Unit
P_{PPM}	Peak pulse power capability with a 10/1000 μ s	1500	W
I_{PPM}	Peak pulse current with a 10/1000 μ s	SEE TABLE1	A
$P_{M(AV)}$	Steady state power dissipation at $T_L=25^\circ\text{C}$,Lead lengths 0.375"(10mm)	5.0	W
V_F	Maximum instantaneous forward voltage at 100A for unidirectional only	3.5	V
$R_{\theta JL}$	Thermal resistance junction to lead	20	°C/W
T_J, T_{STG}	Operating and Storage Temperature	-65 to +150	°C

Electrical Characteristics @ 25°C (Unless Otherwise Noted) TABLE1

Microsemi Part Number	Breakdown Voltage V_{BR} @ I_{BR}			Rated Stand Off Voltage	Maximum Standby current I_D @ V_{WM}	Maximum Peak Pulse Current	Maximum Clamping Voltage V_C @ I_{PP}
	MIN	MAX					
	$V_{BR}(V)$		$I_{BR}(mA)$		$I_D(\mu A)$	$I_{PP}(A)$	$V_C(V)$
SMCJ5629	6.12	7.48	10	5.50	1000	139.0	10.8
SMCJ5629A	6.45	7.14	10	5.80	1000	143.0	10.5
SMCJ5630	6.75	8.25	10	6.05	500	128.0	11.7
SMCJ5630A	7.13	7.88	10	6.40	500	132.0	11.3
SMCJ5631	7.38	9.02	10	6.63	200	120.0	12.5
SMCJ5631A	7.79	8.61	10	7.02	200	124.0	12.1
SMCJ5632	8.19	10.0	1	7.37	50	109.0	13.8
SMCJ5632A	8.65	9.55	1	7.78	50	112.0	13.4
SMCJ5633	9.0	11.0	1	8.10	10	100.0	15.0
SMCJ5633A	9.5	10.5	1	8.55	10	103.0	14.5
SMCJ5634	9.9	12.1	1	8.92	5	93.0	16.2
SMCJ5634A	10.5	11.6	1	9.40	5	96.0	15.6
SMCJ5635	10.8	13.2	1	9.72	5	87.0	17.3
SMCJ5635A	11.4	12.6	1	10.2	5	90.0	16.7
SMCJ5636	11.7	14.3	1	10.5	5	79.0	19.0
SMCJ5636A	12.4	13.7	1	11.1	5	82.0	18.2
SMCJ5637	13.5	16.5	1	12.1	5	68.0	22.0
SMCJ5637A	14.3	15.8	1	12.8	5	71.0	21.2
SMCJ5638	14.4	17.6	1	12.9	5	64.0	23.5
SMCJ5638A	15.2	16.8	1	13.6	5	67.0	22.5
SMCJ5639	16.2	19.8	1	14.5	5	56.5	26.5
SMCJ5639A	17.1	18.9	1	15.3	5	59.5	25.2
SMCJ5640	18.0	22.0	1	16.2	5	51.5	29.1
SMCJ5640A	19.0	21.0	1	17.1	5	54.0	27.7
SMCJ5641	19.8	24.2	1	17.8	5	47.0	31.9
SMCJ5641A	20.9	23.1	1	18.8	5	49.0	30.6
SMCJ5642	21.6	26.4	1	19.4	5	43.0	34.7
SMCJ5642A	22.8	25.2	1	20.5	5	45.0	33.2
SMCJ5643	24.3	29.7	1	21.8	5	38.5	39.1
SMCJ5643A	25.7	28.4	1	23.1	5	40.0	37.5
SMCJ5644	27.0	33.0	1	24.3	5	34.5	43.5
SMCJ5644A	28.5	31.5	1	25.6	5	36.0	41.4
SMCJ5645	29.7	36.3	1	26.8	5	31.5	47.7
SMCJ5645A	31.4	34.7	1	28.2	5	33.0	45.7
SMCJ5646	32.4	39.6	1	29.1	5	29.0	52.0
SMCJ5646A	34.2	37.8	1	30.8	5	30.0	49.9
SMCJ5647	35.1	42.9	1	31.6	5	26.5	56.4
SMCJ5647A	37.1	41.0	1	33.3	5	28.0	53.9
SMCJ5648	38.7	47.3	1	34.8	5	24.0	61.9
SMCJ5648A	40.9	45.2	1	36.8	5	25.3	59.3
SMCJ5649	42.3	51.7	1	38.1	5	22.2	67.8
SMCJ5649A	44.7	49.4	1	40.2	5	23.2	64.8
SMCJ5650	45.9	56.1	1	41.3	5	20.4	73.5
SMCJ5650A	48.5	53.6	1	43.6	5	21.4	70.1
SMCJ5651	50.4	61.6	1	45.4	5	18.6	80.5
SMCJ5651A	53.2	58.8	1	47.8	5	19.5	77.0
SMCJ5652	55.8	68.2	1	50.2	5	16.9	89.0
SMCJ5652A	58.9	65.1	1	53.0	5	17.7	85.0
SMCJ5653	61.2	74.8	1	55.1	5	15.3	98.0
SMCJ5653A	64.6	71.4	1	58.1	5	16.3	92.0
SMCJ5654	67.5	82.5	1	60.7	5	13.9	108.0
SMCJ5654A	71.30	78.8	1	64.1	5	14.6	103.0

Electrical Characteristics @ 25°C (Unless Otherwise Noted) TABLE1

Microsemi Part Number	Breakdown Voltage V_{BR} @ I_{BR}			Rated Stand Off Voltage	Maximum Standby current I_D @ V_{WM}	Maximum Peak Pulse Current	Maximum Clamping Voltage V_C @ I_{PP}
	MIN	MAX					
	$V_{BR}(V)$		$I_{BR}(mA)$		$I_D(\mu A)$	$I_{PP}(A)$	$V_C(V)$
SMCJ5655	73.8	90.2	1	66.4	5	12.7	118.0
SMCJ5655A	77.9	86.1	1	70.1	5	13.3	113.0
SMCJ5656	81.9	100.0	1	73.7	5	11.4	131.0
SMCJ5656A	86.5	95.5	1	77.8	5	12.0	125.0
SMCJ5657	90.0	110.0	1	81.0	5	10.4	144.0
SMCJ5657A	95.0	105.0	1	85.5	5	11.0	137.0
SMCJ5658	99.0	121.0	1	89.2	5	9.5	158.0
SMCJ5658A	105.0	116.0	1	94.0	5	9.9	152.0
SMCJ5659	108.0	132.0	1	97.2	5	8.7	173.0
SMCJ5659A	114.0	126.0	1	102.0	5	9.1	165.0
SMCJ5660	117.0	143.0	1	105.0	5	8.0	187.0
SMCJ5660A	124.0	137.0	1	111.0	5	8.4	179.0
SMCJ5661	135.0	165.0	1	121.0	5	7.0	215.0
SMCJ5661A	143.0	158.0	1	128.0	5	7.2	207.0
SMCJ5662	144.0	176.0	1	130.0	5	6.5	230.0
SMCJ5662A	152.0	168.0	1	136.0	5	6.8	219.0
SMCJ5663	153.0	187.0	1	138.0	5	6.2	244.0
SMCJ5663A	162.0	179.0	1	145.0	5	6.4	234.0
SMCJ5664	162.0	198.0	1	146.0	5	5.8	258.0
SMCJ5664A	171.0	189.0	1	154.0	5	6.1	246.0
SMCJ5665	180.0	220.0	1	162.0	5	5.2	287.0
SMCJ5665A	190.0	210.0	1	171.0	5	5.5	274.0

1. TVS are normally selected according to the rated "Stand Off Voltage" (V_{WM}) which should be equal to or greater than the dc or continuous peak operating voltage level.
2. $V_{(BR)}$ is measured after $I_{(BR)}$ has been applied for $\leq 300ms$. No suffix is 10% tolerance and suffix A is 5% tolerance for $V_{(BR)}$.

Characteristic Curve

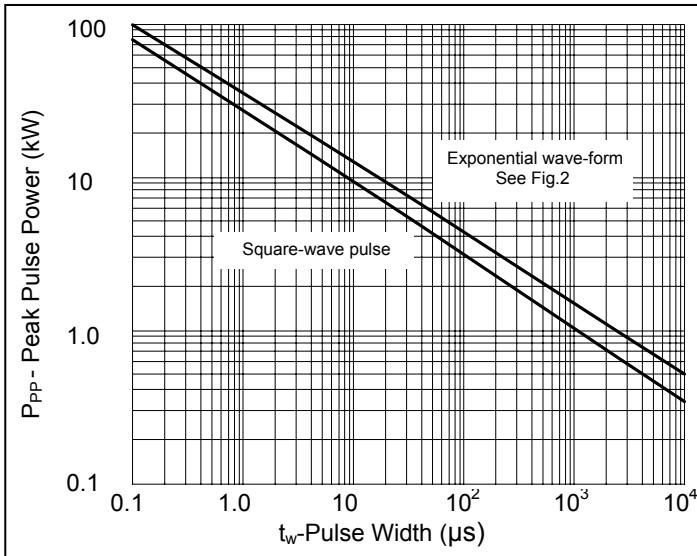


Fig. 1 Peak Pulse Power vs. Pulse Time

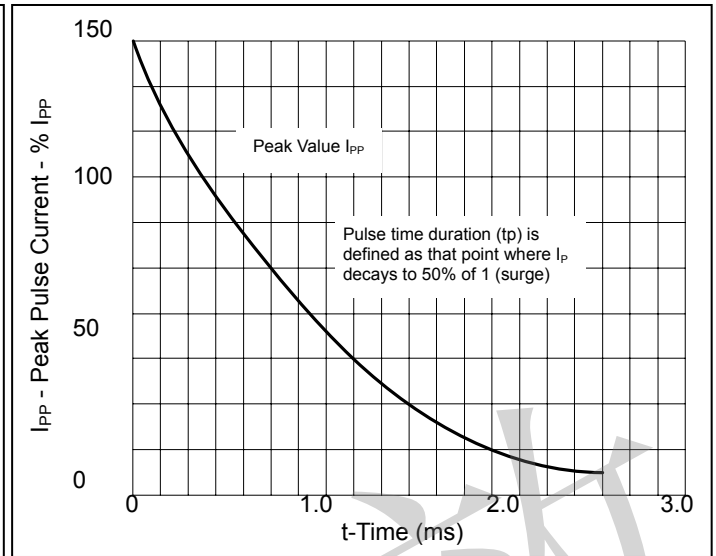


Fig.2 Pulse Waveform for Exponential Surge

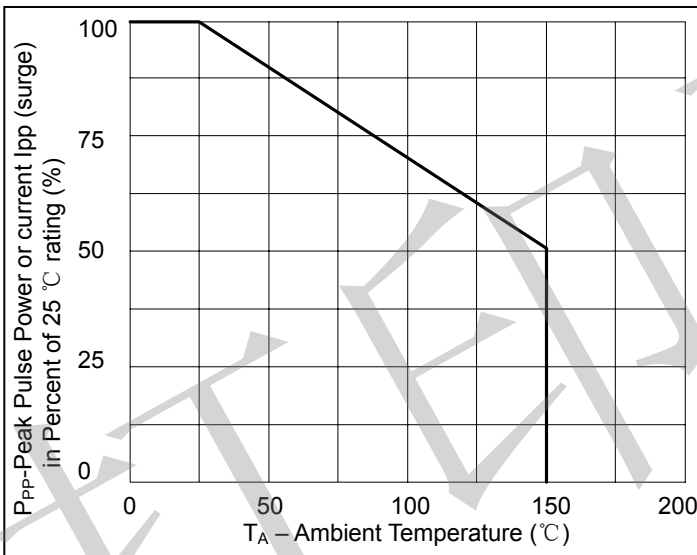


Fig.3 Derating Curve

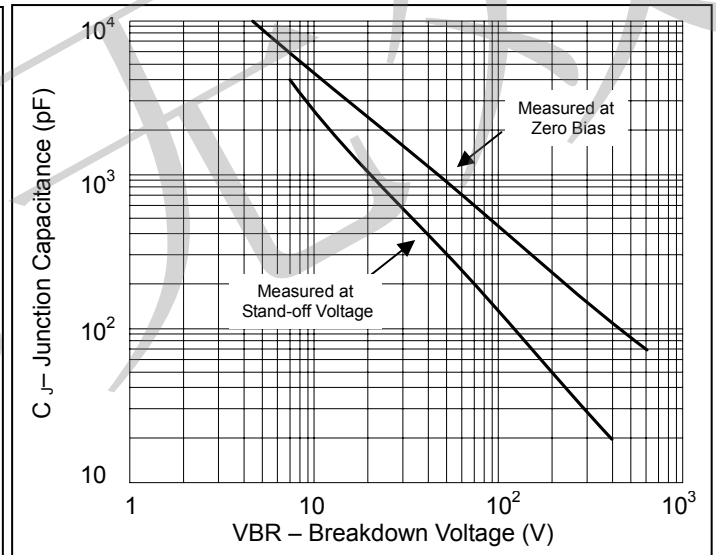


Fig.4 Typical Capacitance vs. Breakdown Voltage

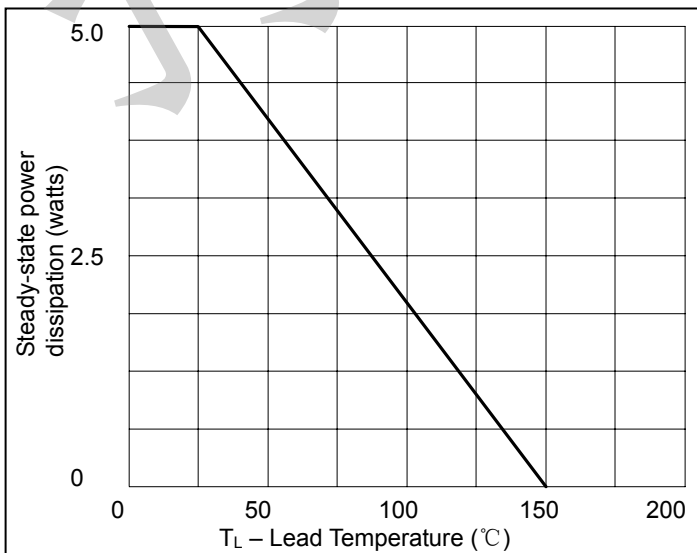


Fig.5 State power derating curve