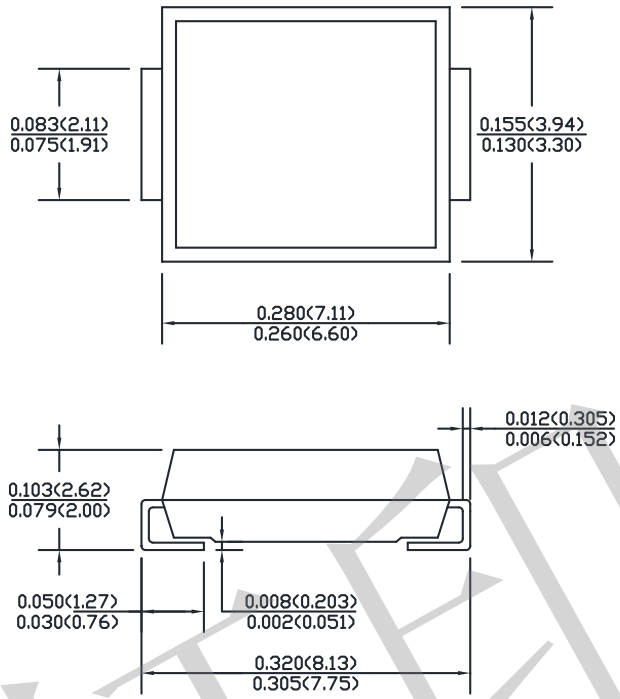
SMCJ6036 thru SMCJ6072A

Transient Voltage Suppressor

Breakdown Voltage 5.5 to 185 Volts
Peak Pulse Power 1500 Watts

CASE: SMC (DO214AB)



Dimensions in inches and (millimeters)

Features

- Breakdown Voltages (V_{BR}) from 5.5 to 185V
- 1500W peak pulse power capability with a 10/1000μs waveform, repetitive rate (duty cycle):0.01%
- Fast Response Time
- Low incremental surge resistance
- Excellent clamping capability
- High temperature soldering guaranteed: 265℃ /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 IC_S, 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 10/1000μs	1500	W
I_{PPM}	Peak pulse current with a 10/1000μs	SEE TABLE1	A
$P_{M(AV)}$	Steady state power dissipation at T_L=25℃ ,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	℃/W
T_J, T_{STG}	Operating and Storage Temperature	-65 to +150	℃

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}	Maximum Temperature Coefficient of V_{BR}
	MIN	MAX						
	V_{BR}(V)		I_{BR}(mA)	V_{WM}(V)	I_D(μA)	I_{PP} (A)	V_C(V)	$\alpha_{V(BR)}$ %/℃
SMCJ6036	6.75	8.25	10	5.5	1000	128.0	11.7	.061
SMCJ6036A	7.13	7.88	10	6.0	1000	132.0	11.3	.061
SMCJ6037	7.38	9.02	10	6.5	500	120.0	12.5	.065
SMCJ6037A	7.79	8.61	10	7.0	500	124.0	12.1	.065
SMCJ6038	8.19	10.0	10	7.0	200	109.0	13.8	.068
SMCJ6038A	8.65	9.55	10	7.5	200	112.0	13.4	.068
SMCJ6039	9.0	11.0	1	8.0	50	100.0	15.0	.073
SMCJ6039A	9.5	10.5	1	8.5	50	103.0	14.5	.073
SMCJ6040	9.9	12.1	1	8.5	10	93.0	16.2	.075
SMCJ6040A	10.5	11.6	1	9.0	10	96.0	15.6	.075
SMCJ6041	10.8	13.2	1	9.0	5	87.0	17.3	.078
SMCJ6041A	11.4	12.6	1	10.0	5	90.0	16.7	.078
SMCJ6042	11.7	14.3	1	10.0	5	79.0	19.0	.081
SMCJ6042A	12.4	13.7	1	11.0	5	82.0	18.2	.081
SMCJ6043	13.5	16.5	1	11.0	5	68.0	22.0	.084
SMCJ6043A	14.3	15.8	1	12.0	5	71.0	21.2	.084
SMCJ6044	14.4	17.5	1	12.0	5	64.0	23.5	.086
SMCJ6044A	15.2	16.8	1	13.0	5	67.0	22.5	.086
SMCJ6045	16.2	19.8	1	14.0	5	56.5	26.5	.088
SMCJ6045A	17.1	18.9	1	15.0	5	59.5	25.2	.088
SMCJ6046	18.0	22.0	1	16.0	5	51.5	29.1	.090
SMCJ6046A	19.0	21.0	1	17.0	5	54.0	27.7	.090
SMCJ6047	19.8	24.2	1	17.0	5	47.0	31.9	.092
SMCJ6047A	20.9	23.1	1	18.0	5	49.0	30.6	.092
SMCJ6048	21.6	26.4	1	19.0	5	43.0	34.7	.094
SMCJ6048A	22.8	25.2	1	20.0	5	45.0	33.2	.094
SMCJ6049	24.3	29.7	1	21.0	5	38.5	39.1	.096
SMCJ6049A	25.7	28.4	1	22.0	5	40.0	37.5	.096
SMCJ6050	27.0	33.0	1	24.0	5	34.5	43.5	.097
SMCJ6050A	28.5	31.5	1	25.0	5	36.0	41.4	.097
SMCJ6051	29.7	36.3	1	26.0	5	31.5	47.7	.098
SMCJ6051A	31.4	34.7	1	28.0	5	33.0	45.7	.098
SMCJ6052	32.4	39.6	1	29.0	5	29.0	52.0	.099
SMCJ6052A	34.2	37.8	1	30.0	5	30.0	49.9	.099
SMCJ6053	35.4	42.9	1	31.0	5	26.5	56.4	.100
SMCJ6053A	37.1	41.0	1	33.0	5	28.0	53.9	.100
SMCJ6054	38.7	47.3	1	34.0	5	24.0	61.9	.101
SMCJ6054A	40.9	45.2	1	36.0	5	25.3	59.3	.101
SMCJ6055	42.3	51.7	1	38.0	5	22.2	67.8	.101
SMCJ6055A	44.7	49.4	1	40.0	5	23.2	64.8	.101
SMCJ6056	45.9	56.1	1	41.0	5	20.4	73.5	.102
SMCJ6056A	48.5	53.6	1	43.0	5	21.4	70.1	.102
SMCJ6057	50.4	61.6	1	45.0	5	18.6	80.5	.103
SMCJ6057A	53.2	58.8	1	47.0	5	19.5	77.0	.103
SMCJ6058	55.8	68.2	1	48.0	5	16.9	89.0	.104
SMCJ6058A	58.9	65.1	1	53.0	5	17.7	85.0	.104
SMCJ6059	61.2	74.8	1	55.0	5	15.3	98.0	.104
SMCJ6059A	64.6	71.4	1	58.0	5	16.3	92.0	.104
SMCJ6060	67.5	82.5	1	60.0	5	13.9	108.0	.105
SMCJ6060A	71.3	78.8	1	64.0	5	14.6	103.0	.105
SMCJ6061	73.8	90.2	1	66.0	5	12.7	118.0	.105
SMCJ6061A	77.9	86.1	1	70.0	5	13.3	113.0	.105

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}	Maximum Temperature Coefficient of V_{BR}
	MIN	MAX						
	V_{BR}(V)		I_{BR}(mA)	V_{WM}(V)	I_D(μA)	I_{PP} (A)	V_C(V)	$\alpha_{V(BR)}$ %/℃
SMCJ6062	81.9	100.0	1	73.0	5	11.4	131.0	.106
SMCJ6062A	86.5	95.5	1	75.0	5	12.0	125.0	.106
SMCJ6063	90.0	110.0	1	81.0	5	10.4	144.0	.106
SMCJ6063A	95.0	105.0	1	82.0	5	11.0	137.0	.106
SMCJ6064	99.0	121.0	1	90.0	5	9.5	158.0	.107
SMCJ6064A	105.0	116.0	1	94.0	5	9.9	152.0	.107
SMCJ6065	108.0	132.0	1	95.0	5	8.5	176.0	.107
SMCJ6065A	114.0	126.0	1	100.0	5	8.9	168.0	.107
SMCJ6066	117.0	143.0	1	105.0	5	7.8	191.0	.107
SMCJ6066A	124.0	137.0	1	110.0	5	8.2	182.0	.107
SMCJ6067	135.0	165.0	1	121.0	5	6.7	223.0	.108
SMCJ6067A	143.0	158.0	1	128.0	5	7.0	213.0	.108
SMCJ6068	153.0	187.0	1	137.0	5	5.8	258.0	.108
SMCJ6068A	162.0	179.0	1	145.0	5	6.1	245.0	.108
SMCJ6069	162.0	198.0	1	145.0	5	5.5	274.0	.108
SMCJ6069A	171.0	189.0	1	150.0	5	5.7	261.0	.108
SMCJ6070	171.0	210.0	1	155.0	5	5.1	292.0	.108
SMCJ6070A	181.0	200.0	1	160.0	5	5.4	278.0	.108
SMCJ6071	180.0	220.0	1	165.0	5	4.9	308.0	.108
SMCJ6071A	190.0	210.0	1	170.0	5	5.1	294.0	.108
SMCJ6072	198.0	242.0	1	175.0	5	4.3	344.0	.108
SMCJ6072A	209.0	231.0	1	185.0	5	4.6	328.0	.108

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 ≤ 300ms. No suffix is 10% tolerance and suffix A is 5% tolerance for $V_{(BR)}$.

Characteristic Curve

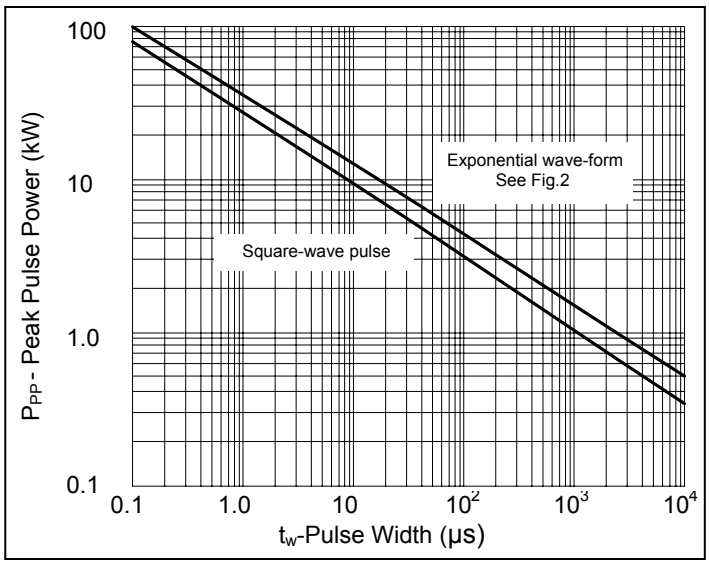


Fig. 1 Peak Pulse Power vs. Pulse Time

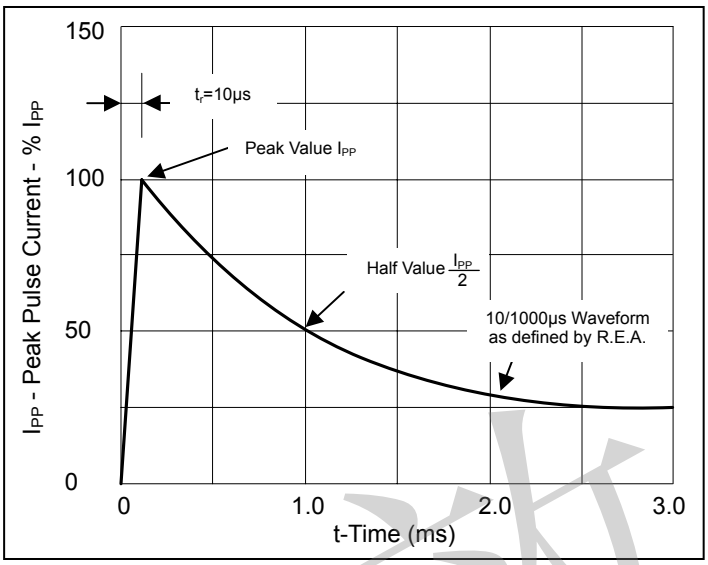


Fig.2 Pulse Waveform for Exponential Surge

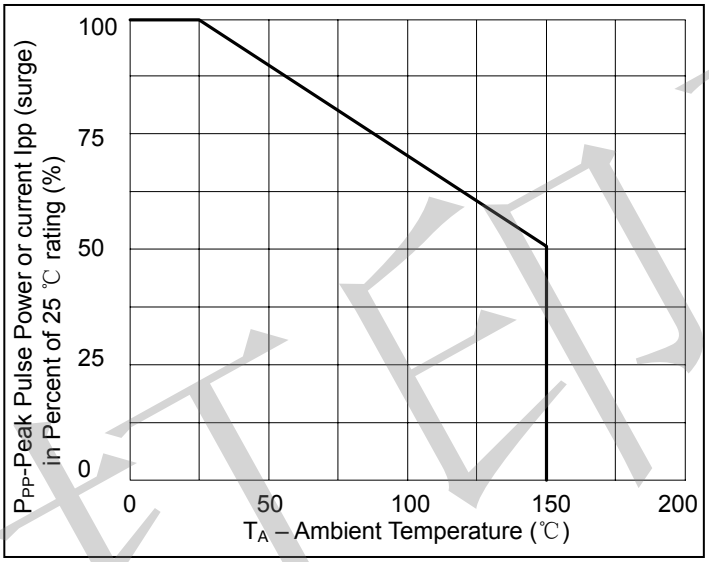


Fig.3 Derating Curve

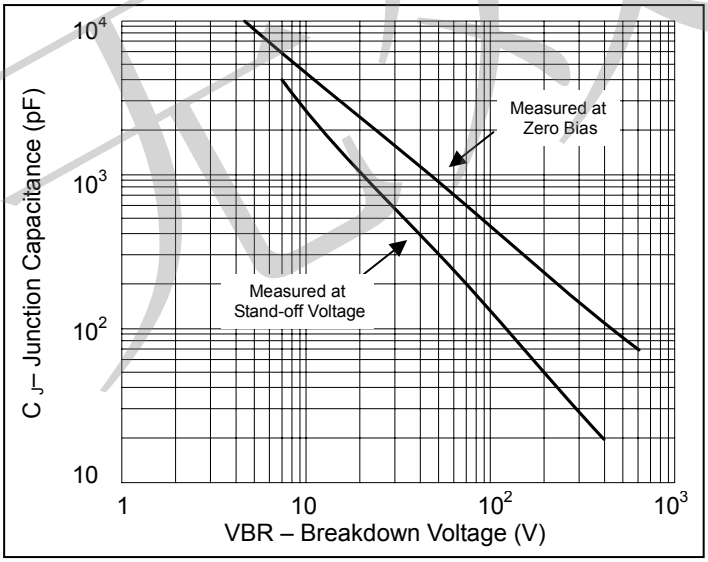


Fig.4 Typical Capacitance vs. Breakdown Voltage

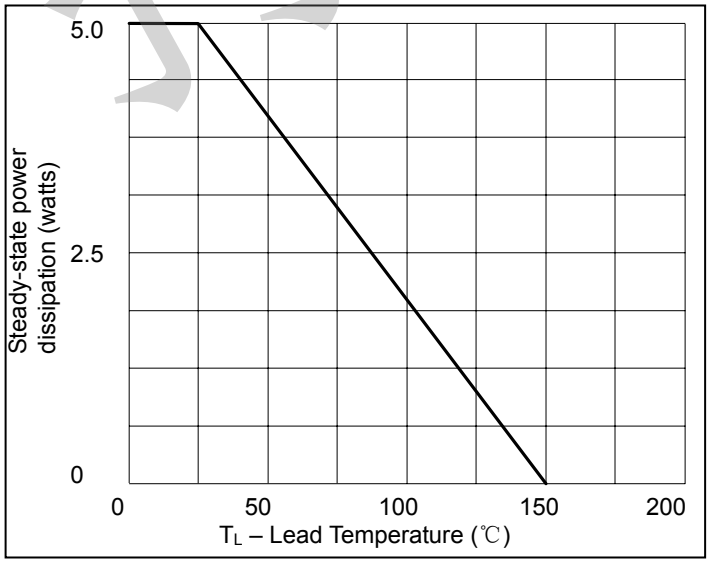


Fig.5 State power derating curve