

# SMBJP6KE6.8(C)A THRU SMBJP6KE550(C)A

## Features

- Halogen free available upon request by adding suffix "-HF"
- For surface mount applications in order to optimize board space
- Available in both unidirectional and bidirectional construction and suffix "C" designates bidirectional type
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Fast response time: typical less than 1.0ps from 0 volts to  $V_{BR}$  minimum
- Low inductance
- Excellent clamping capability
- UL Recognized File # E480232

## Mechanical Data

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Terminals: solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes positive end (cathode) except Bidirectional
- Maximum soldering temperature: 260°C for 10 seconds

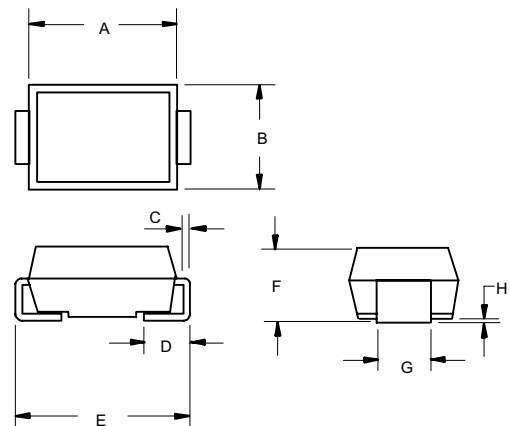
## Maximum Ratings @ 25°C Unless Otherwise Specified

Peak Pulse Current on 10/1000us waveform	$I_{PP}$	See Table 1	Note: 2
Peak Pulse Power Dissipation	$P_{PP}$	600W	Note: 2,
Operation And Storage Temperature Range	$T_J, T_{STG}$	-55°C to +175°C	
Thermal Resistance	$R_{thJC}$	25°C/W	
	$R_{thJL}$	20°C/W	

- NOTES: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.
2. Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ\text{C}$  per Fig.2.

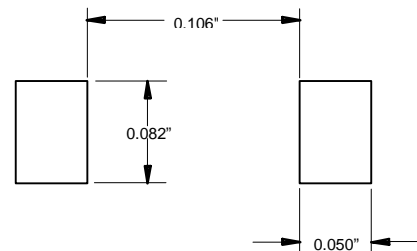
**Transient  
 Voltage Suppressor  
 6.8 to 550 Volts  
 600 Watt**

## DO-214AA (SMBJ) (LEAD FRAME)



DIM	DIMENSIONS				NOTE
	INCHES		MM		
A	.180	.185	4.06	4.70	
B	.130	.155	3.30	3.94	
C	.006	.012	0.15	0.31	
D	.030	.060	0.76	1.52	
E	.200	.220	5.08	5.59	
F	.079	.096	2.00	2.44	
G	.075	.087	1.91	2.21	
H	.002	.008	0.05	0.203	

## SUGGESTED SOLDER PAD LAYOUT



# SMBJP6KE6.8(C)A THRU SMBJP6KE550(C)A

## ELECTRICAL CHARACTERISTICS @25°C

MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE $V_{WM}$ (VOLTS)	BREAKDOWN VOLTAGE $V_{(BR)}$ @ $I_T$ (VOLTS)			MAXIMUM CLAMPING VOLTAGE @ $I_{PP}$ (VOLTS)	PEAK PULSE CURRENT $I_{PP}$ (AMPS)	MAXIMUM REVERSE LEAKAGE @ $V_{WM}$ $I_D$ ( $\mu A$ )	MARKING CODE
		MIN	MAX	$I_T$ (mA)				
SMBJP6KE6.8A	5.80	6.45	7.14	10	10.5	58.1	1000	6V8A
SMBJP6KE7.5A	6.40	7.13	7.88	10	11.3	54.0	500	7V5A
SMBJP6KE8.2A	7.02	7.79	8.61	10	12.1	50.4	200	8V2A
SMBJP6KE9.1A	7.78	8.65	9.55	1	13.4	45.5	50	9V1A
SMBJP6KE10A	8.55	9.50	10.50	1	14.5	42.1	10	10A
SMBJP6KE11A	9.40	10.50	11.60	1	15.6	39.1	5	11A
SMBJP6KE12A	10.20	11.40	12.60	1	16.7	36.5	5	12A
SMBJP6KE13A	11.10	12.40	13.70	1	18.2	33.5	1	13A
SMBJP6KE15A	12.80	14.30	15.80	1	21.2	28.8	1	15A
SMBJP6KE16A	13.60	15.20	16.80	1	22.5	27.1	1	16A
SMBJP6KE18A	15.30	17.10	18.90	1	25.5	24.2	1	18A
SMBJP6KE20A	17.10	19.00	21.00	1	27.7	22.0	1	20A
SMBJP6KE22A	18.80	20.90	23.10	1	30.6	19.9	1	22A
SMBJP6KE24A	20.50	22.80	25.20	1	33.2	18.4	1	24A
SMBJP6KE27A	23.10	25.70	28.40	1	37.5	16.3	1	27A
SMBJP6KE30A	25.60	28.50	31.50	1	41.4	14.7	1	30A
SMBJP6KE33A	28.20	31.40	34.70	1	45.7	13.3	1	33A
SMBJP6KE36A	30.80	34.20	37.80	1	49.9	12.2	1	36A
SMBJP6KE39A	33.30	37.10	41.00	1	53.9	11.3	1	39A
SMBJP6KE43A	36.80	40.90	45.20	1	59.3	10.3	1	43A
SMBJP6KE47A	40.20	44.70	49.40	1	64.8	9.4	1	47A
SMBJP6KE51A	43.60	48.50	53.60	1	70.1	8.7	1	51A
SMBJP6KE56A	47.80	53.20	58.80	1	77.0	7.9	1	56A
SMBJP6KE62A	53.00	58.90	65.10	1	85.0	7.2	1	62A
SMBJP6KE68A	58.10	64.60	71.40	1	92.0	6.6	1	68A
SMBJP6KE75A	64.10	71.30	78.80	1	103.0	5.9	1	75A
SMBJP6KE82A	70.10	77.90	86.10	1	113.0	5.4	1	82A
SMBJP6KE91A	77.80	86.50	95.50	1	125.0	4.9	1	91A
SMBJP6KE100A	85.50	95.00	105.00	1	137.0	4.5	1	100A
SMBJP6KE110A	94.00	105.00	116.00	1	152.0	4.0	1	110A
SMBJP6KE120A	102.00	114.00	126.00	1	165.0	3.7	1	120A
SMBJP6KE130A	111.00	124.00	137.00	1	179.0	3.4	1	130A
SMBJP6KE150A	128.00	143.00	158.00	1	207.0	2.9	1	150A
SMBJP6KE160A	136.00	152.00	168.00	1	219.0	2.8	1	160A
SMBJP6KE170A	145.00	162.00	179.00	1	234.0	2.6	1	170A
SMBJP6KE180A	154.00	171.00	189.00	1	246.0	2.5	1	180A
SMBJP6KE200A	171.00	190.00	210.00	1	274.0	2.2	1	200A
SMBJP6KE220A	185.00	209.00	231.00	1	328.0	1.9	1	220A
SMBJP6KE250A	214.00	237.00	263.00	1	344.0	1.9	1	250A
SMBJP6KE300A	256.00	285.00	315.00	1	414.0	1.5	1	300A
SMBJP6KE350A	300.00	332.00	368.00	1	482.0	1.3	1	350A
SMBJP6KE400A	342.00	380.00	420.00	1	548.0	1.1	1	400A
SMBJP6KE440A	376.00	418.00	462.00	1	602.0	1.0	1	440A
SMBJP6KE480A	408.00	456.00	504.00	1	658.0	0.9	1	480A
SMBJP6KE510A	434.00	485.00	535.00	1	698.0	0.9	1	510A
SMBJP6KE530A	477.00	503.50	556.50	1	725.0	0.8	1	530A
SMBJP6KE540A	459.00	513.00	567.00	1	740.0	0.8	1	540A
SMBJP6KE550A	495.00	522.50	577.50	1	760.0	0.8	1	550A

For bi-directional type having  $V_{rwm}$  of 10 volts and less, the  $I_R$  limit is double.  
 The available parts are "A" type only, the parts without A ( $V_{BR}$  is  $\pm 10\%$ ) is not available.

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## ELECTRICAL CHARACTERISTICS @25°C

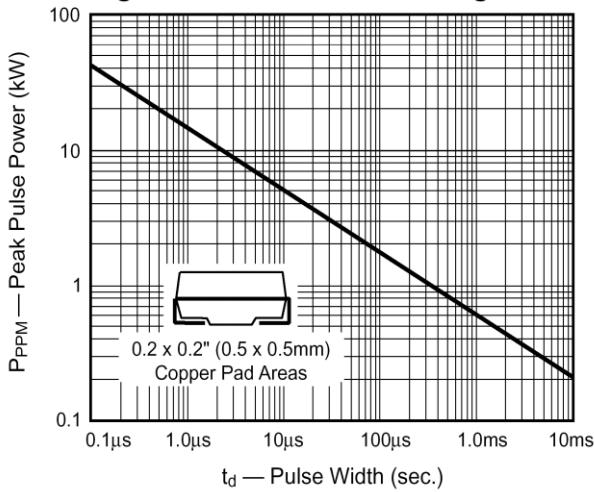
MCC PART NUMBER	REVERSE STAND-OFF VOLTAGE $V_{WM}$ (VOLTS)	BREAKDOWN VOLTAGE $V_{(BR)}$ @ $I_T$ (VOLTS)			MAXIMUM CLAMPING VOLTAGE @ $I_{PP}$ (VOLTS)	PEAK PULSE CURRENT $I_{PP}$ (AMPS)	MAXIMUM REVERSE LEAKAGE @ $V_{WM}$ $I_D$ ( $\mu A$ )	MARKING CODE
		MIN	MAX	$I_T$ (mA)				
SMBJP6KE6.8CA	5.80	6.45	7.14	10	10.5	58.1	1000	6V8C
SMBJP6KE7.5CA	6.40	7.13	7.88	10	11.3	54.0	500	7V5C
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SMBJP6KE9.1CA	7.78	8.65	9.55	1	13.4	45.5	50	9V1C
SMBJP6KE10CA	8.55	9.50	10.50	1	14.5	42.1	10	10C
SMBJP6KE11CA	9.40	10.50	11.60	1	15.6	39.1	5	11C
SMBJP6KE12CA	10.20	11.40	12.60	1	16.7	36.5	5	12C
SMBJP6KE13CA	11.10	12.40	13.70	1	18.2	33.5	5	13C
SMBJP6KE15CA	12.80	14.30	15.80	1	21.2	28.8	5	15C
SMBJP6KE16CA	13.60	15.20	16.80	1	22.5	27.1	5	16C
SMBJP6KE18CA	15.30	17.10	18.90	1	25.5	24.2	5	18C
SMBJP6KE20CA	17.10	19.00	21.00	1	27.7	22.0	5	20C
SMBJP6KE22CA	18.80	20.90	23.10	1	30.6	19.9	5	22C
SMBJP6KE24CA	20.50	22.80	25.20	1	33.2	18.4	5	24C
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SMBJP6KE33CA	28.20	31.40	34.70	1	45.7	13.3	5	33C
SMBJP6KE36CA	30.80	34.20	37.80	1	49.9	12.2	5	36C
SMBJP6KE39CA	33.30	37.10	41.00	1	53.9	11.3	5	39C
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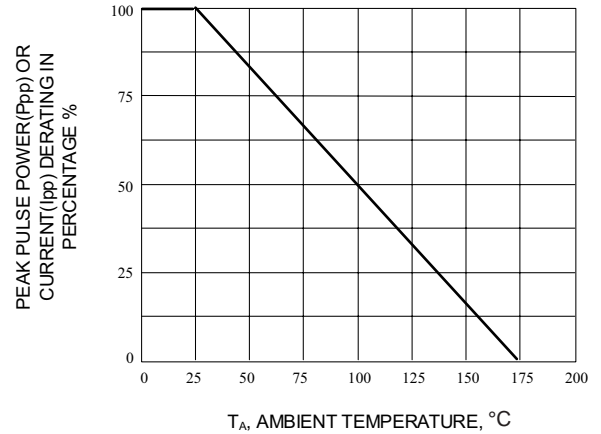
# SMBJP6KE6.8(C)A THRU SMBJP6KE550(C)A

## RATINGS AND CHARACTERISTIC CURVES

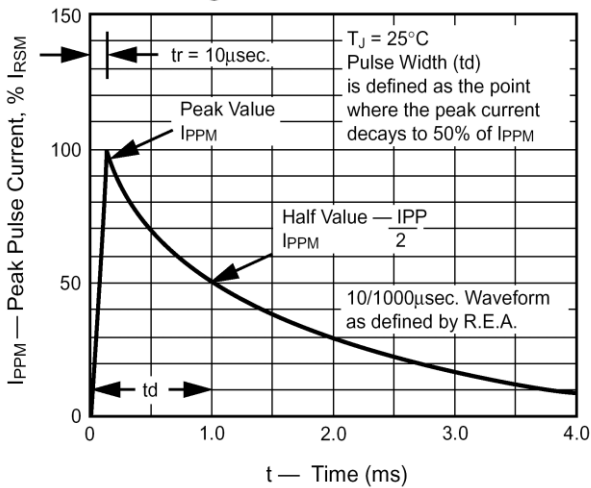
**Fig. 1 – Peak Pulse Power Rating Curve**



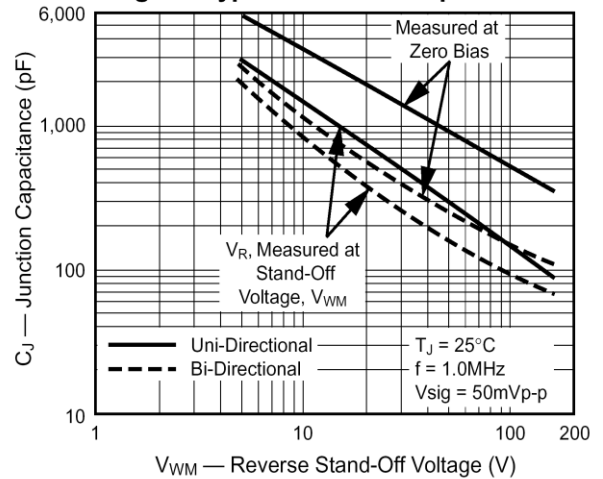
**Fig. 2-PULSE RATING CURVE**



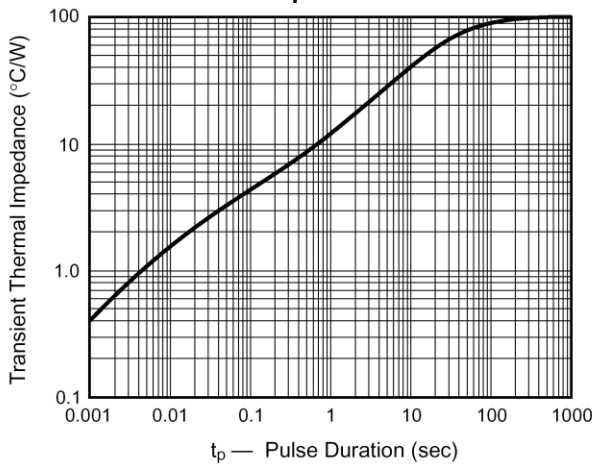
**Fig. 3 – Pulse Waveform**



**Fig. 4 – Typical Junction Capacitance**



**Fig. 5 – Typical Transient Thermal Impedance**





Micro Commercial Components

Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.