

# SMCJ1.5KE6.8(C)A THRU SMCJ1.5KE550(C)A

## Features

- For surface mount applications in order to optimize board space
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Low profile package
- Fast response time: typical less than 1.0ps from 0 volts to  $V_{BR}$  minimum
- Halogen free available upon request by adding suffix "-HF"
- Low inductance
- Excellent clamping capability
- UL Recognized File # E331408

## 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

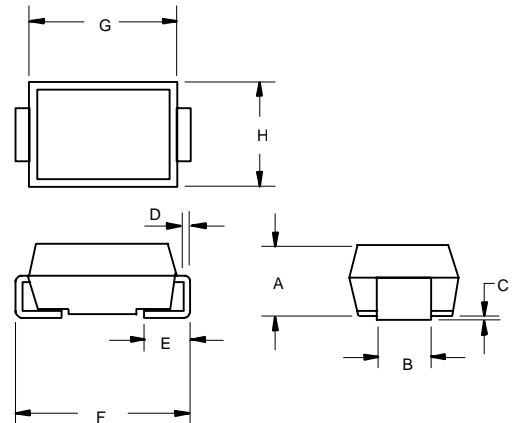
Peak Pulse Current on 10/1000us waveform	$I_{PP}$	See Table 1	Note: 2
Peak Pulse Power Dissipation	$P_{PP}$	1500W	Note: 2 3
Peak Forward Surge Current	$I_{FSM}$	200A	Note: 4
Operation And Storage Temperature Range	$T_J, T_{STG}$	-55°C to +175°C	
Typical Thermal Resistance Junction to Lead	$R_{thJL}$	15°C/W	
Typical Thermal Resistance Junction to Ambient	$R_{thJA}$	75°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.
3. Mounted on 8.0mm<sup>2</sup> copper pads to each terminal.
4. 8.3ms, single half sine wave duty cycle=4 pulses per. Minute maximum.

## Transient Voltage Suppressor 6.8 to 550 Volts 1500 Watt

### DO-214AB (SMCJ) (LEAD FRAME)



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.079	.103	2.00	2.62	
B	.108	.128	2.75	3.25	
C	.002	.008	0.051	0.203	
D	.006	.012	0.152	0.305	
E	.030	.050	0.76	1.27	
F	.305	.320	7.75	8.13	
G	.260	.280	6.60	7.11	
H	.220	.245	5.59	6.22	

### SUGGESTED SOLDER PAD LAYOUT



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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)				
SMCJ1.5KE6.8A	5.80	6.45	7.14	10	10.5	144.8	1000	6V8A
SMCJ1.5KE7.5A	6.40	7.13	7.88	10	11.3	134.5	500	7V5A
SMCJ1.5KE8.2A	7.02	7.79	8.61	10	12.1	125.6	200	8V2A
SMCJ1.5KE9.1A	7.78	8.65	9.55	1	13.4	113.4	50	9V1A
SMCJ1.5KE10A	8.55	9.50	10.50	1	14.5	104.8	10	10A
SMCJ1.5KE11A	9.40	10.50	11.60	1	15.6	97.4	5	11A
SMCJ1.5KE12A	10.20	11.40	12.60	1	16.7	91.0	5	12A
SMCJ1.5KE13A	11.10	12.40	13.70	1	18.2	83.5	5	13A
SMCJ1.5KE15A	12.80	14.30	15.80	1	21.2	71.7	5	15A
SMCJ1.5KE16A	13.60	15.20	16.80	1	22.5	67.6	5	16A
SMCJ1.5KE18A	15.30	17.10	18.90	1	25.5	60.3	5	18A
SMCJ1.5KE20A	17.10	19.00	21.00	1	27.7	54.9	5	20A
SMCJ1.5KE22A	18.80	20.90	23.10	1	30.6	49.7	5	22A
SMCJ1.5KE24A	20.50	22.80	25.20	1	33.2	45.8	5	24A
SMCJ1.5KE27A	23.10	25.70	28.40	1	37.5	40.5	5	27A
SMCJ1.5KE30A	25.60	28.50	31.50	1	41.4	36.7	5	30A
SMCJ1.5KE33A	28.20	31.40	34.70	1	45.7	33.3	5	33A
SMCJ1.5KE36A	30.80	34.20	37.80	1	49.9	30.5	5	36A
SMCJ1.5KE39A	33.30	37.10	41.00	1	53.9	28.2	5	39A
SMCJ1.5KE43A	36.80	40.90	45.20	1	59.3	25.6	5	43A
SMCJ1.5KE47A	40.20	44.70	49.40	1	64.8	23.5	5	47A
SMCJ1.5KE51A	43.60	48.50	53.60	1	70.1	21.7	5	51A
SMCJ1.5KE56A	47.80	53.20	58.80	1	77.0	19.7	5	56A
SMCJ1.5KE62A	53.00	58.90	65.10	1	85.0	17.9	5	62A
SMCJ1.5KE68A	58.10	64.60	71.40	1	92.0	16.5	5	68A
SMCJ1.5KE75A	64.10	71.30	78.80	1	103.0	14.8	5	75A
SMCJ1.5KE82A	70.10	77.90	86.10	1	113.0	13.5	5	82A
SMCJ1.5KE91A	77.80	86.50	95.50	1	125.0	12.2	5	91A
SMCJ1.5KE100A	85.50	95.00	105.00	1	137.0	11.1	5	100A
SMCJ1.5KE110A	94.00	105.00	116.00	1	152.0	10.0	5	110A
SMCJ1.5KE120A	102.00	114.00	126.00	1	165.0	9.2	5	120A
SMCJ1.5KE130A	111.00	124.00	137.00	1	179.0	8.5	5	130A
SMCJ1.5KE150A	128.00	143.00	158.00	1	207.0	7.3	5	150A
SMCJ1.5KE160A	136.00	152.00	168.00	1	219.0	6.9	5	160A
SMCJ1.5KE170A	145.00	162.00	179.00	1	234.0	6.5	5	170A
SMCJ1.5KE180A	154.00	171.00	189.00	1	246.0	6.2	5	180A
SMCJ1.5KE200A	171.00	190.00	210.00	1	274.0	5.5	5	200A
SMCJ1.5KE220A	185.00	209.00	231.00	1	328.0	4.6	5	220A
SMCJ1.5KE250A	214.00	237.00	263.00	1	344.0	4.4	5	250A
SMCJ1.5KE300A	256.00	285.00	315.00	1	414.0	3.7	5	300A
SMCJ1.5KE350A	300.00	332.00	368.00	1	482.0	3.2	5	350A
SMCJ1.5KE400A	342.00	380.00	420.00	1	548.0	2.8	5	400A
SMCJ1.5KE440A	376.00	418.00	462.00	1	602.0	2.5	5	440A
SMCJ1.5KE480A	408.00	456.00	504.00	1	658.0	2.3	5	480A
SMCJ1.5KE510A	434.00	485.00	535.00	1	698.0	2.1	5	510A
SMCJ1.5KE530A	477.00	503.50	556.50	1	725.0	2.1	5	530A
SMCJ1.5KE540A	459.00	513.00	567.00	1	740.0	2.0	5	540A
SMCJ1.5KE550A	495.00	522.50	577.50	1	760.0	2.0	5	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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		MIN	MAX	$I_T$ (mA)				
SMCJ1.5KE6.8CA	5.80	6.45	7.14	10	10.5	144.8	1000	6V8C
SMCJ1.5KE7.5CA	6.40	7.13	7.88	10	11.3	134.5	500	7V5C
SMCJ1.5KE8.2CA	7.02	7.79	8.61	10	12.1	125.6	200	8V2C
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SMCJ1.5KE10CA	8.55	9.50	10.50	1	14.5	104.8	10	10C
SMCJ1.5KE11CA	9.40	10.50	11.60	1	15.6	97.4	5	11C
SMCJ1.5KE12CA	10.20	11.40	12.60	1	16.7	91.0	5	12C
SMCJ1.5KE13CA	11.10	12.40	13.70	1	18.2	83.5	5	13C
SMCJ1.5KE15CA	12.80	14.30	15.80	1	21.2	71.7	5	15C
SMCJ1.5KE16CA	13.60	15.20	16.80	1	22.5	67.6	5	16C
SMCJ1.5KE18CA	15.30	17.10	18.90	1	25.5	60.3	5	18C
SMCJ1.5KE20CA	17.10	19.00	21.00	1	27.7	54.9	5	20C
SMCJ1.5KE22CA	18.80	20.90	23.10	1	30.6	49.7	5	22C
SMCJ1.5KE24CA	20.50	22.80	25.20	1	33.2	45.8	5	24C
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SMCJ1.5KE47CA	40.20	44.70	49.40	1	64.8	23.5	5	47C
SMCJ1.5KE51CA	43.60	48.50	53.60	1	70.1	21.7	5	51C
SMCJ1.5KE56CA	47.80	53.20	58.80	1	77.0	19.7	5	56C
SMCJ1.5KE62CA	53.00	58.90	65.10	1	85.0	17.9	5	62C
SMCJ1.5KE68CA	58.10	64.60	71.40	1	92.0	16.5	5	68C
SMCJ1.5KE75CA	64.10	71.30	78.80	1	103.0	14.8	5	75C
SMCJ1.5KE82CA	70.10	77.90	86.10	1	113.0	13.5	5	82C
SMCJ1.5KE91CA	77.80	86.50	95.50	1	125.0	12.2	5	91C
SMCJ1.5KE100CA	85.50	95.00	105.00	1	137.0	11.1	5	100C
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SMCJ1.5KE160CA	136.00	152.00	168.00	1	219.0	6.9	5	160C
SMCJ1.5KE170CA	145.00	162.00	179.00	1	234.0	6.5	5	170C
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SMCJ1.5KE400CA	342.00	380.00	420.00	1	548.0	2.8	5	400C
SMCJ1.5KE440CA	376.00	418.00	462.00	1	602.0	2.5	5	440C
SMCJ1.5KE480CA	408.00	456.00	504.00	1	658.0	2.3	5	480C
SMCJ1.5KE510CA	434.00	485.00	535.00	1	698.0	2.1	5	510C
SMCJ1.5KE530CA	477.00	503.50	556.50	1	725.0	2.1	5	530C
SMCJ1.5KE540CA	459.00	513.00	567.00	1	740.0	2.0	5	540C
SMCJ1.5KE550CA	495.00	522.50	577.50	1	760.0	2.0	5	550C

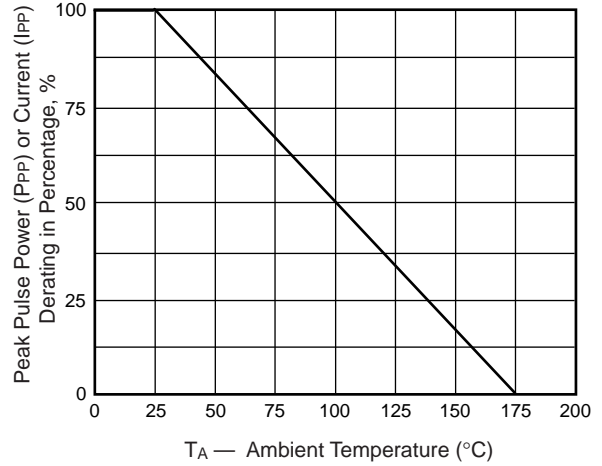
For bi-directional type having  $V_{RWM}$  of 10 volts and less, the  $I_R$  limit is double.  
The available parts are "A" type only, the parts without A ( $V_{BR}$  is  $\pm 10\%$ ) is not available.

## Ratings and Characteristic Curves (T<sub>A</sub> = 25°C unless otherwise noted)

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



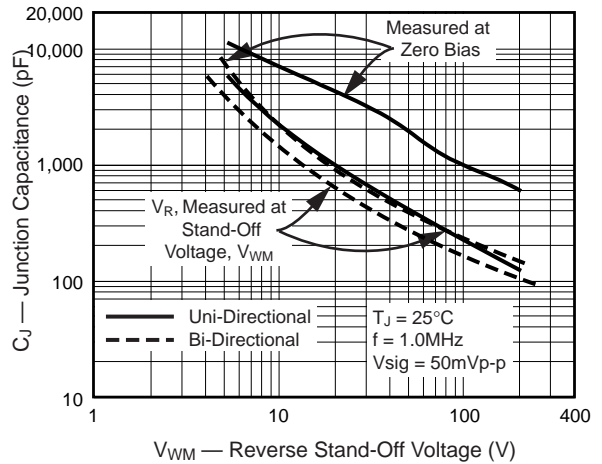
**Fig. 2 – Pulse Derating Curve**



**Fig. 3 – Pulse Waveform**



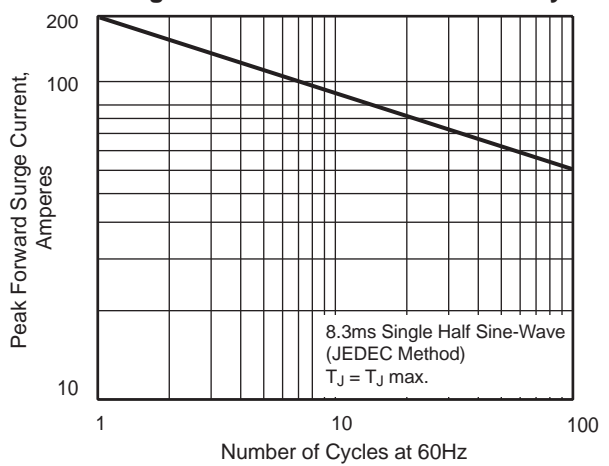
**Fig. 4 – Typical Junction Capacitance Uni-Directional**



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



**Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Use Only**





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### 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 сложных, дефицитных, либо снятых с производства позиций;
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- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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## JONHON

«JONHON» (основан в 1970 г.)

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«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
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