



Micro Commercial Components

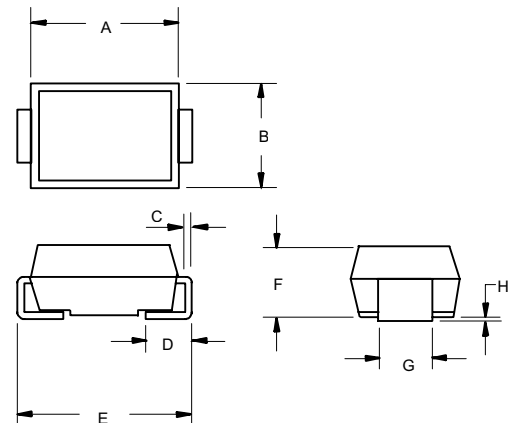


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# SMAJ5.0AHE3 THRU SMAJ440CAHE3

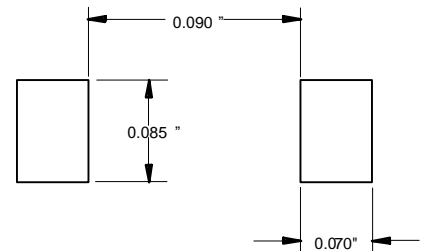
## 400 Watt Transient Voltage Suppressors 5.0 to 440 Volts

### DO-214AC (SMA)(LEAD FRAME)



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.157	.181	4.00	4.60	
B	.098	.114	2.50	2.90	
C	.006	.012	0.152	0.305	
D	.030	.060	0.76	1.52	
E	.188	.208	4.80	5.28	
F	.078	.096	2.00	2.44	
G	.050	.064	1.27	1.63	
H	.002	.008	0.051	0.203	

SUGGESTED SOLDER  
PAD LAYOUT



## Features

- Halogen free
- For Surface Mount Applications
- Unidirectional And Bidirectional
- Low Inductance
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- For Bidirectional Devices Add "C" To The Suffix of The Part Number: i.e.SMAJ5.0CAHE3 for 5% Tolerance
- Lead Free Finish/Rohs Compliant (Note1) ("P"Suffix designates Compliant. See ordering information)
- UL Recognized File # E331408
- Meet AEC-Q101 Requirement

## Mechanical Data

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensivity Level 1
- Manufacturing code added for better tracking
- Polarity: Indicated by cathode band except bi-directional types

## Maximum Rating:

- Operating Temperature: -55°C to +175°C
- Storage Temperature: -55°C to +175°C
- Typical Thermal Resistance: 100°C/W Junction to Ambient

Peak Pulse Current on 10/1000 us Wave form	I <sub>PPM</sub>	See Table 1	Note 2
Peak Pulse Power Dissipation	P <sub>PPM</sub>	Min 400 W	Note 2, 6
Steady State Power Dissipation	P <sub>M(AV)</sub>	1.5 W	Note 2, 5

- Note:
1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.
  2. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig.2.
  3. Mounted on 5.0mm<sup>2</sup> copper pads to each terminal.
  4. 8.3ms, single half sine wave duty cycle = 4 pulses per Minutes maximum.
  5. Lead temperature at T<sub>L</sub> = 75°C.
  6. Peak pulse power waveform is 10/1000us

# SMAJ5.0AHE3 thru SMAJ440CAHE3



Fig. 1-PEAK PULSE POWER RATING CURVE

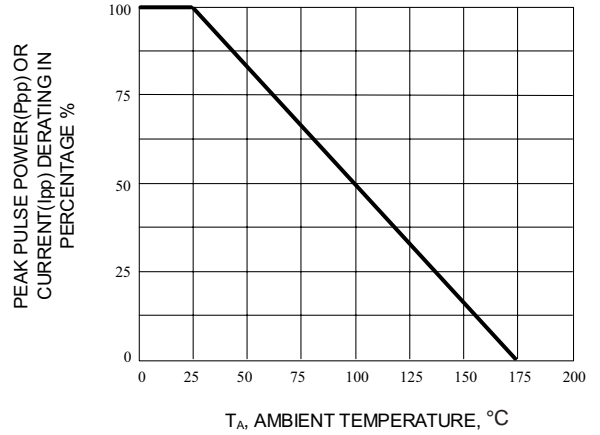


Fig. 2-PULSE RATING CURVE



Fig. 3-PULSE WAVEFORM



Fig. 4-TYPICAL JUNCTION CAPACITANCE

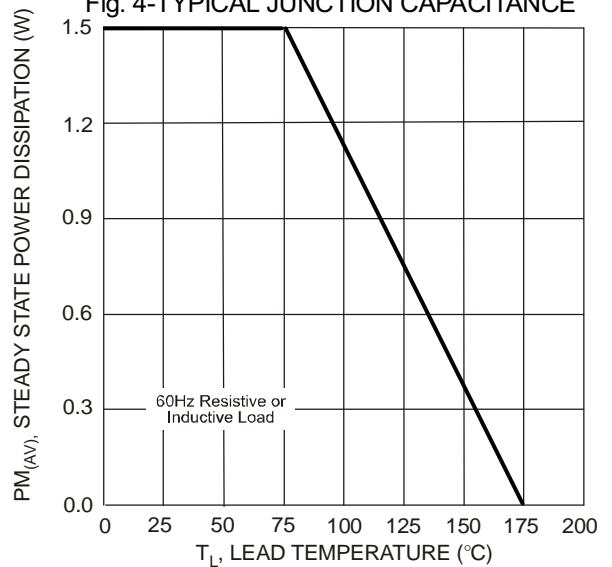


Fig.5-Steady State Power Derating Curve

# SMAJ5.0AHE3 thru SMAJ440CAHE3

## ELECTRICAL CHARACTERISTICS @25°C

MCC PART NUMBER		REVERSE STAND-OFF VOLTAGE $V_{WM}$	BREAKDOWN VOLTAGE $V_{(BR)}$ @ $I_T$ (VOLTS)			MAXIMUM CLAMPING VOLTAGE @ $I_{PP}$	PEAK PULSE CURRENT $I_{PP}$	MAXIMUM REVERSE LEAKAGE @ $V_{WM}$ $I_B$	MARKING CODE	
UNI-POLAR	BI-POLAR	(VOLTS)	MIN	MAX	$I_T$ (mA)	(VOLTS)	(AMPS)	( $\mu$ A)	1	2
SMAJ5.0AHE3	SMAJ5.0CAHE3	5.0	6.40	7.00	10	9.2	43.5	800	AE	WE
SMAJ6.0AHE3	SMAJ6.0CAHE3	6.0	6.67	7.37	10	10.3	38.8	800	AG	WG
SMAJ6.5AHE3	SMAJ6.5CAHE3	6.5	7.22	7.98	10	11.2	35.7	500	AK	WK
SMAJ7.0AHE3	SMAJ7.0CAHE3	7.0	7.78	8.60	10	12.0	33.3	200	AM	WM
SMAJ7.5AHE3	SMAJ7.5CAHE3	7.5	8.33	9.21	1	12.9	31.0	100	AP	WP
SMAJ8.0AHE3	SMAJ8.0CAHE3	8.0	8.89	9.83	1	13.6	29.4	50	AR	WR
SMAJ8.5AHE3	SMAJ8.5CAHE3	8.5	9.44	10.4	1	14.4	27.7	20	AT	WT
SMAJ9.0AHE3	SMAJ9.0CAHE3	9.0	10.0	11.1	1	15.4	26.0	10	AV	VV
SMAJ10AHE3	SMAJ10CAHE3	10	11.1	12.3	1	17.0	23.5	5	AX	WX
SMAJ11AHE3	SMAJ11CAHE3	11	12.2	13.5	1	18.2	22.0	1	AZ	WZ
SMAJ12AHE3	SMAJ12CAHE3	12	13.3	14.7	1	19.9	20.1	1	BE	XE
SMAJ13AHE3	SMAJ13CAHE3	13	14.4	15.9	1	21.5	18.6	1	BG	XG
SMAJ14AHE3	SMAJ14CAHE3	14	15.6	17.2	1	23.2	17.2	1	BK	XK
SMAJ15AHE3	SMAJ15CAHE3	15	16.7	18.5	1	24.4	16.4	1	BM	XM
SMAJ16AHE3	SMAJ16CAHE3	16	17.8	19.7	1	26.0	15.3	1	BP	XP
SMAJ17AHE3	SMAJ17CAHE3	17	18.9	20.9	1	27.6	14.5	1	BR	XR
SMAJ18AHE3	SMAJ18CAHE3	18	20.0	22.1	1	29.2	13.7	1	BT	XT
SMAJ20AHE3	SMAJ20CAHE3	20	22.2	24.5	1	32.4	12.3	1	BV	XV
SMAJ22AHE3	SMAJ22CAHE3	22	24.4	26.9	1	35.5	11.2	1	BX	XX
SMAJ24AHE3	SMAJ24CAHE3	24	26.7	29.5	1	38.9	10.3	1	BZ	XZ
SMAJ26AHE3	SMAJ26CAHE3	26	28.9	31.9	1	42.1	9.5	1	CE	YE
SMAJ28AHE3	SMAJ28CAHE3	28	31.1	34.4	1	45.4	8.8	1	CG	YG
SMAJ30AHE3	SMAJ30CAHE3	30	33.3	36.8	1	48.4	8.3	1	CK	YK
SMAJ33AHE3	SMAJ33CAHE3	33	36.7	40.6	1	53.3	7.5	1	CM	YM
SMAJ36AHE3	SMAJ36CAHE3	36	40.0	44.2	1	58.1	6.9	1	CP	YP
SMAJ40AHE3	SMAJ40CAHE3	40	44.4	49.1	1	64.5	6.2	1	CR	YR
SMAJ43AHE3	SMAJ43CAHE3	43	47.8	52.8	1	69.4	5.7	1	CT	YT
SMAJ45AHE3	SMAJ45CAHE3	45	50.0	55.3	1	72.7	5.5	1	CV	YV
SMAJ48AHE3	SMAJ48CAHE3	48	53.3	58.9	1	77.4	5.2	1	CX	YX
SMAJ51AHE3	SMAJ51CAHE3	51	56.7	62.7	1	82.4	4.9	1	CZ	YZ
SMAJ54AHE3	SMAJ54CAHE3	54	60.0	66.3	1	87.1	4.6	1	RE	ZE
SMAJ58AHE3	SMAJ58CAHE3	58	64.4	71.2	1	93.6	4.3	1	RG	ZG
SMAJ60AHE3	SMAJ60CAHE3	60	66.7	73.7	1	96.8	4.1	1	RK	ZK
SMAJ64AHE3	SMAJ64CAHE3	64	71.1	78.6	1	103	3.9	1	RM	ZM
SMAJ70AHE3	SMAJ70CAHE3	70	77.8	86.0	1	113	3.5	1	RP	ZP
SMAJ75AHE3	SMAJ75CAHE3	75	83.3	92.1	1	121	3.3	1	RR	ZR
SMAJ78AHE3	SMAJ78CAHE3	78	86.7	95.8	1	126	2.2	1	RT	ZT
SMAJ85AHE3	SMAJ85CAHE3	85	94.4	104	1	137	2.9	1	RV	ZV
SMAJ90AHE3	SMAJ90CAHE3	90	100	111	1	146	2.7	1	RX	ZX
SMAJ100AHE3	SMAJ100CAHE3	100	111	123	1	162	2.5	1	RZ	ZZ
SMAJ110AHE3	SMAJ110CAHE3	110	122	135	1	177	2.3	1	SE	VE
SMAJ120AHE3	SMAJ120CAHE3	120	133	147	1	193	2.1	1	SG	VG
SMAJ130AHE3	SMAJ130CAHE3	130	144	159	1	209	1.9	1	SK	VK
SMAJ150AHE3	SMAJ150CAHE3	150	167	185	1	243	1.6	1	SM	VM
SMAJ160AHE3	SMAJ160CAHE3	160	178	197	1	259	1.5	1	SP	VP
SMAJ170AHE3	SMAJ170CAHE3	170	189	209	1	275	1.5	1	SR	VR
SMAJ180AHE3	SMAJ180CAHE3	180	201	222	1	292	1.4	1	ST	VT
SMAJ200AHE3	SMAJ200CAHE3	200	224	247	1	324	1.2	1	SV	VV
SMAJ220AHE3	SMAJ220CAHE3	220	246	272	1	356	1.1	1	SX	VX
SMAJ250AHE3	SMAJ250CAHE3	250	279	309	1	405	1.0	1	SZ	VZ
SMAJ300AHE3	SMAJ300CAHE3	300	335	371	1	486	0.8	1	TE	UE
SMAJ350AHE3	SMAJ350CAHE3	350	391	432	1	567	0.7	1	TG	UG
SMAJ400AHE3	SMAJ400CAHE3	400	447	494	1	648	0.6	1	TK	UK
SMAJ440AHE3	SMAJ440CAHE3	440	492	543	1	713	0.6	1	TM	UM

For bi-directional type having  $V_{rwm}$  of 10 Volts and less, the IR limit is double.  
For parts without A, the VBR is +10%.