



Micro Commercial Components



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20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

SMAJ5.0
THRU
SMAJ440CA

Features

- Halogen free available upon request by adding suffix "-HF"
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.SMAJ5.0CA for 5% Tolerance
Lead Free Finish/Rohs Compliant (Note1) ("P"Suffix designates Compliant. See ordering information)
UL Recognized File # E331408

Mechanical Data

- Epoxy meets UL 94 V-0 flammability rating
Moisture Sensitivity Level 1
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

Table with 4 columns: Parameter, Symbol, Value, and Reference. Rows include Peak Pulse Current, Peak Pulse Power Dissipation, Steady State Power Dissipation, and Peak Forward Surge Current.

Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.

- 2. Non-repetitive current pulse, per Fig.3 and derated above TA=25°C per Fig.2.
3. Mounted on 5.0mm² copper pads to each terminal.
4. 8.3ms, single half sine wave duty cycle = 4 pulses per Minutes maximum.
5. Lead temperature at TL = 75°C.
6. Peak pulse power waveform is 10/1000µS.

400 Watt
Transient Voltage
Suppressors
5.0 to 440 Volts

DO-214AC
(SMA)(LEAD FRAME)



Table titled 'DIMENSIONS' with columns for DIM, INCHES (MIN, MAX), MM (MIN, MAX), and NOTE. It lists dimensions A through H.

SUGGESTED SOLDER PAD LAYOUT



# SMAJ5.0 thru SMAJ440CA



Fig. 1-PEAK PULSE POWER RATING CURVE

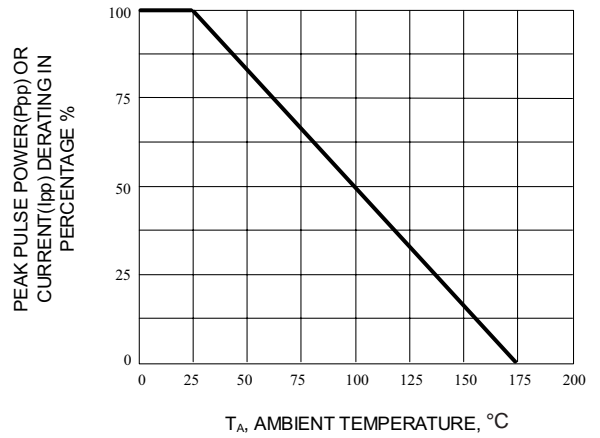


Fig. 2-PULSE RATING CURVE

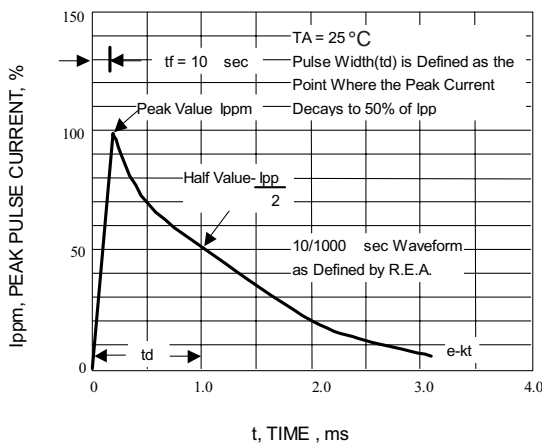


Fig. 3-PULSE WAVEFORM



Fig. 4-TYPICAL JUNCTION CAPACITANCE



Fig. 5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

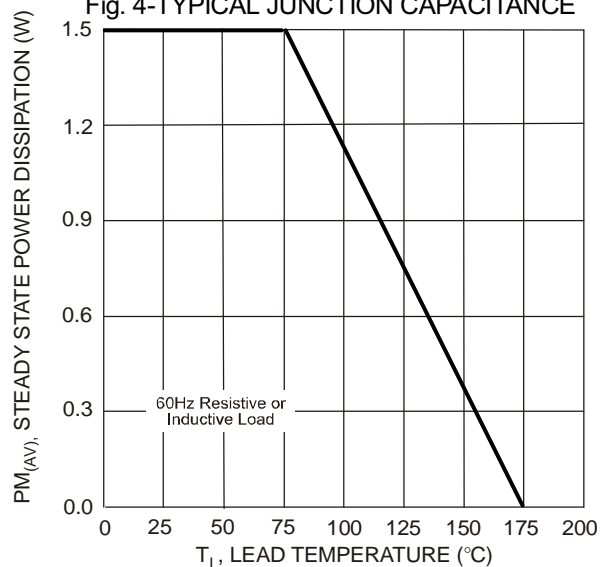


Fig.6-Steady State Power Derating Curve

# SMAJ5.0 thru SMAJ440CA

## 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 @ $V_{WM}$ $I_D$ | MARKING CODE |    |
|-----------------|-----------|------------------------------------|--|------|------------|-------------------------------------|-----------------------------|--|--------------|----|
| UNI-POLAR       | BI-POLAR  | (VOLTS)                            | MIN  | MAX  | $I_T$ (mA) | (VOLTS)                             | (AMPS)                      | ( $\mu$ A)                               | 1            | 2  |
| SMAJ5.0A        | SMAJ5.0CA | 5.0                                | 6.40   | 7.00 | 10         | 9.2                                 | 43.5                        | 800                                      | AE           | WE |
| SMAJ6.0A        | SMAJ6.0CA | 6.0                                | 6.67   | 7.37 | 10         | 10.3                                | 38.8                        | 800                                      | AG           | WG |
| SMAJ6.5A        | SMAJ6.5CA | 6.5                                | 7.22   | 7.98 | 10         | 11.2                                | 35.7                        | 500                                      | AK           | WK |
| SMAJ7.0A        | SMAJ7.0CA | 7.0                                | 7.78   | 8.60 | 10         | 12.0                                | 33.3                        | 200                                      | AM           | WM |
| SMAJ7.5A        | SMAJ7.5CA | 7.5                                | 8.33   | 9.21 | 1          | 12.9                                | 31.0                        | 100                                      | AP           | WP |
| SMAJ8.0A        | SMAJ8.0CA | 8.0                                | 8.89   | 9.83 | 1          | 13.6                                | 29.4                        | 50                                       | AR           | WR |
| SMAJ8.5A        | SMAJ8.5CA | 8.5                                | 9.44   | 10.4 | 1          | 14.4                                | 27.7                        | 20                                       | AT           | WT |
| SMAJ9.0A        | SMAJ9.0CA | 9.0                                | 10.0   | 11.1 | 1          | 15.4                                | 26.0                        | 10                                       | AV           | WV |
| SMAJ10A         | SMAJ10CA  | 10                                 | 11.1   | 12.3 | 1          | 17.0                                | 23.5                        | 5  | AX           | WX |
| SMAJ11A         | SMAJ11CA  | 11                                 | 12.2   | 13.5 | 1          | 18.2                                | 22.0                        | 1  | AZ           | WZ |
| SMAJ12A         | SMAJ12CA  | 12                                 | 13.3   | 14.7 | 1          | 19.9                                | 20.1                        | 1  | BE           | XE |
| SMAJ13A         | SMAJ13CA  | 13                                 | 14.4   | 15.9 | 1          | 21.5                                | 18.6                        | 1  | BG           | XG |
| SMAJ14A         | SMAJ14CA  | 14                                 | 15.6   | 17.2 | 1          | 23.2                                | 17.2                        | 1  | BK           | XK |
| SMAJ15A         | SMAJ15CA  | 15                                 | 16.7   | 18.5 | 1          | 24.4                                | 16.4                        | 1  | BM           | XM |
| SMAJ16A         | SMAJ16CA  | 16                                 | 17.8   | 19.7 | 1          | 26.0                                | 15.3                        | 1  | BP           | XP |
| SMAJ17A         | SMAJ17CA  | 17                                 | 18.9   | 20.9 | 1          | 27.6                                | 14.5                        | 1  | BR           | XR |
| SMAJ18A         | SMAJ18CA  | 18                                 | 20.0   | 22.1 | 1          | 29.2                                | 13.7                        | 1  | BT           | XT |
| SMAJ20A         | SMAJ20CA  | 20                                 | 22.2   | 24.5 | 1          | 32.4                                | 12.3                        | 1  | BV           | XV |
| SMAJ22A         | SMAJ22CA  | 22                                 | 24.4   | 26.9 | 1          | 35.5                                | 11.2                        | 1  | BX           | XX |
| SMAJ24A         | SMAJ24CA  | 24                                 | 26.7   | 29.5 | 1          | 38.9                                | 10.3                        | 1  | BZ           | XZ |
| SMAJ26A         | SMAJ26CA  | 26                                 | 28.9   | 31.9 | 1          | 42.1                                | 9.5                         | 1  | CE           | YE |
| SMAJ28A         | SMAJ28CA  | 28                                 | 31.1   | 34.4 | 1          | 45.4                                | 8.8                         | 1  | CG           | YG |
| SMAJ30A         | SMAJ30CA  | 30                                 | 33.3   | 36.8 | 1          | 48.4                                | 8.3                         | 1  | CK           | YK |
| SMAJ33A         | SMAJ33CA  | 33                                 | 36.7   | 40.6 | 1          | 53.3                                | 7.5                         | 1  | CM           | YM |
| SMAJ36A         | SMAJ36CA  | 36                                 | 40.0   | 44.2 | 1          | 58.1                                | 6.9                         | 1  | CP           | YP |
| SMAJ40A         | SMAJ40CA  | 40                                 | 44.4   | 49.1 | 1          | 64.5                                | 6.2                         | 1  | CR           | YR |
| SMAJ43A         | SMAJ43CA  | 43                                 | 47.8   | 52.8 | 1          | 69.4                                | 5.7                         | 1  | CT           | YT |
| SMAJ45A         | SMAJ45CA  | 45                                 | 50.0   | 55.3 | 1          | 72.7                                | 5.5                         | 1  | CV           | YV |
| SMAJ48A         | SMAJ48CA  | 48                                 | 53.3   | 58.9 | 1          | 77.4                                | 5.2                         | 1  | CX           | YX |
| SMAJ51A         | SMAJ51CA  | 51                                 | 56.7   | 62.7 | 1          | 82.4                                | 4.9                         | 1  | CZ           | YZ |
| SMAJ54A         | SMAJ54CA  | 54                                 | 60.0   | 66.3 | 1          | 87.1                                | 4.6                         | 1  | RE           | ZE |
| SMAJ58A         | SMAJ58CA  | 58                                 | 64.4   | 71.2 | 1          | 93.6                                | 4.3                         | 1  | RG           | ZG |
| SMAJ60A         | SMAJ60CA  | 60                                 | 66.7   | 73.7 | 1          | 96.8                                | 4.1                         | 1  | RK           | ZK |
| SMAJ64A         | SMAJ64CA  | 64                                 | 71.1   | 78.6 | 1          | 103                                 | 3.9                         | 1  | RM           | ZM |
| SMAJ70A         | SMAJ70CA  | 70                                 | 77.8   | 86.0 | 1          | 113                                 | 3.5                         | 1  | RP           | ZP |
| SMAJ75A         | SMAJ75CA  | 75                                 | 83.3   | 92.1 | 1          | 121                                 | 3.3                         | 1  | RR           | ZR |
| SMAJ78A         | SMAJ78CA  | 78                                 | 86.7   | 95.8 | 1          | 126                                 | 2.2                         | 1  | RT           | ZT |
| SMAJ85A         | SMAJ85CA  | 85                                 | 94.4   | 104  | 1          | 137                                 | 2.9                         | 1  | RV           | ZV |
| SMAJ90A         | SMAJ90CA  | 90                                 | 100  | 111  | 1          | 146                                 | 2.7                         | 1  | RX           | ZX |
| SMAJ100A        | SMAJ100CA | 100                                | 111  | 123  | 1          | 162                                 | 2.5                         | 1  | RZ           | ZZ |
| SMAJ110A        | SMAJ110CA | 110                                | 122  | 135  | 1          | 177                                 | 2.3                         | 1  | SE           | VE |
| SMAJ120A        | SMAJ120CA | 120                                | 133  | 147  | 1          | 193                                 | 2.1                         | 1  | SG           | VG |
| SMAJ130A        | SMAJ130CA | 130                                | 144  | 159  | 1          | 209                                 | 1.9                         | 1  | SK           | VK |
| SMAJ150A        | SMAJ150CA | 150                                | 167  | 185  | 1          | 243                                 | 1.6                         | 1  | SM           | VM |
| SMAJ160A        | SMAJ160CA | 160                                | 178  | 197  | 1          | 259                                 | 1.5                         | 1  | SP           | VP |
| SMAJ170A        | SMAJ170CA | 170                                | 189  | 209  | 1          | 275                                 | 1.5                         | 1  | SR           | VR |
| SMAJ180A        | SMAJ180CA | 180                                | 201  | 222  | 1          | 292                                 | 1.4                         | 1  | ST           | VT |
| SMAJ200A        | SMAJ200CA | 200                                | 224  | 247  | 1          | 324                                 | 1.2                         | 1  | SV           | VV |
| SMAJ220A        | SMAJ220CA | 220                                | 246  | 272  | 1          | 356                                 | 1.1                         | 1  | SX           | VX |
| SMAJ250A        | SMAJ250CA | 250                                | 279  | 309  | 1          | 405                                 | 1.0                         | 1  | SZ           | VZ |
| SMAJ300A        | SMAJ300CA | 300                                | 335  | 371  | 1          | 486                                 | 0.8                         | 1  | TE           | UE |
| SMAJ350A        | SMAJ350CA | 350                                | 391  | 432  | 1          | 567                                 | 0.7                         | 1  | TG           | UG |
| SMAJ400A        | SMAJ400CA | 400                                | 447  | 494  | 1          | 648                                 | 0.6                         | 1  | TK           | UK |
| SMAJ440A        | SMAJ440CA | 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%.



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### Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 5Kpcs/Reel |

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

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Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А