



# THE DATASHEET OF SMAJ75

# Transient Voltage Suppressors DO-214AC/SMA Package

SMAJ Series

MERITEK

## FEATURE

- Breakdown Voltage from 5.0 to 440V
- 400W peak power dissipation with a 10/1000µs waveform, repetitive rate (duty cycle): 0.01%
- Glass passivated chip
- Excellent clamping capability; Fast response time
- Terminal: Solderable per MIL-STD-750, Method 2026
- Epoxy: UL 94V-0 rate flame retardant
- UL/cUL safety approved: certification No: E223045



## ELECTRICAL CHARACTERISTICS



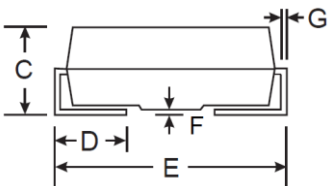
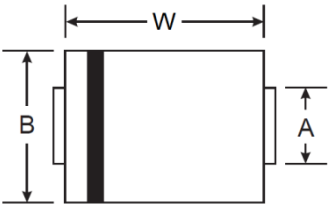
| Parameter                                                                                                                                                                                      | Symbols        | Value          | Unit             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|------------------|
| Peak power dissipation with a 10/1000µs waveform(1)                                                                                                                                            | $P_{PP}$       | 400            | Watts            |
| Peak pulse current with a 10/1000µs waveform(1)                                                                                                                                                | $I_{PP}$       | See Next Table | Amps             |
| Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$                                                                                                                             | $P_D$          | 1.0            | Watts            |
| Peak forward surge current, 8.3 ms single half sine-wave unidirectional only. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.    | $I_{FSM}$      | 40             | Amps             |
| Maximum instantaneous forward voltage at 25 A for unidirectional only. $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 5.0\text{V}$ for devices of $V_{BR} > 201\text{V}$ | $V_F$          | 3.5/5.0        | Volts            |
| Operating junction and storage temperature range                                                                                                                                               | $T_J, T_{slg}$ | -55 to +150    | $^\circ\text{C}$ |

Rating at  $25^\circ\text{C}$ , ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

1.Non-repetitive current pulse per Fig.5 and derated above  $T_A=25^\circ\text{C}$  per Fig.1

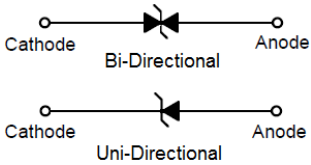
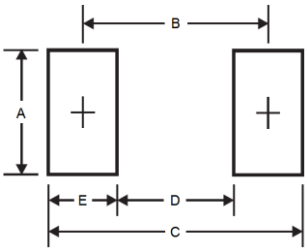
## DIMENSIONS

| Item | DO-214AC(SMA) |       |
|------|---------------|-------|
|      | Milimeters    |       |
|      | Min.          | Max.  |
| W    | 4.00          | 4.60  |
| A    | 1.23          | 1.70  |
| B    | 2.18          | 2.90  |
| C    | 1.70          | 2.44  |
| D    | 0.75          | 1.51  |
| E    | 4.70          | 5.31  |
| F    | -             | 0.203 |
| G    | 0.152         | 0.305 |



## SOLDERING PAD LAYOUT

| A   | B   | C   | D   | E   |
|-----|-----|-----|-----|-----|
| 1.7 | 4.1 | 6.6 | 1.5 | 2.6 |



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| Device Type (Uni) | Device Type | Marking Code |    | Breakdown Voltage VBR@IT |        |        | Working Peak Reverse Voltage VRWM(V) | Maximum Reverse Leakage IR @ VRWM(V) | Maximum Reverse Surge Current Ipp(A) | Maximum Clamping Voltage VC@Ipp |
|-------------------|-------------|--------------|----|--------------------------|--------|--------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------------|
|                   | (Bi)        | Uni          | Bi | Min(V)                   | Max(V) | IT(mA) |                                      |                                      |                                      |                                 |
| SMAJ5.0           | SMAJ5.0C    | AD           | WD | 6.40                     | 7.30   | 10     | 5.0                                  | 800                                  | 41.67                                | 9.6                             |
| SMAJ5.0A          | SMAJ5.0CA   | AE           | WE | 6.40                     | 7.00   | 10     | 5.0                                  | 800                                  | 43.48                                | 9.2                             |
| SMAJ6.0           | SMAJ6.0C    | AF           | WF | 6.67                     | 8.15   | 10     | 6.0                                  | 800                                  | 35.09                                | 11.4                            |
| SMAJ6.0A          | SMAJ6.0CA   | AG           | WG | 6.67                     | 7.37   | 10     | 6.0                                  | 800                                  | 38.83                                | 10.3                            |
| SMAJ6.5           | SMAJ6.5C    | AH           | WH | 7.22                     | 8.82   | 10     | 6.5                                  | 500                                  | 32.52                                | 12.3                            |
| SMAJ6.5A          | SMAJ6.5CA   | AK           | WK | 7.22                     | 7.98   | 10     | 6.5                                  | 500                                  | 35.71                                | 11.2                            |
| SMAJ7.0           | SMAJ7.0C    | AL           | WL | 7.78                     | 9.51   | 10     | 7.0                                  | 200                                  | 30.08                                | 13.3                            |
| SMAJ7.0A          | SMAJ7.0CA   | AM           | WM | 7.78                     | 8.60   | 10     | 7.0                                  | 200                                  | 33.33                                | 12.0                            |
| SMAJ7.5           | SMAJ7.5C    | AN           | WN | 8.33                     | 10.20  | 1      | 7.5                                  | 100                                  | 27.97                                | 14.3                            |
| SMAJ7.5A          | SMAJ7.5CA   | AP           | WP | 8.33                     | 9.21   | 1      | 7.5                                  | 100                                  | 31.01                                | 12.9                            |
| SMAJ8.0           | SMAJ8.0C    | AQ           | WQ | 8.89                     | 10.90  | 1      | 8.0                                  | 50                                   | 26.67                                | 15.0                            |
| SMAJ8.0A          | SMAJ8.0CA   | AR           | WR | 8.89                     | 9.83   | 1      | 8.0                                  | 50                                   | 29.41                                | 13.6                            |
| SMAJ8.5           | SMAJ8.5C    | AS           | WS | 9.44                     | 11.50  | 1      | 8.5                                  | 10                                   | 25.16                                | 15.9                            |
| SMAJ8.5A          | SMAJ8.5CA   | AT           | WT | 9.44                     | 10.40  | 1      | 8.5                                  | 10                                   | 27.78                                | 14.4                            |
| SMAJ9.0           | SMAJ9.0C    | AU           | WU | 10.00                    | 12.20  | 1      | 9.0                                  | 5                                    | 23.67                                | 16.9                            |
| SMAJ9.0A          | SMAJ9.0CA   | AV           | WV | 10.00                    | 11.10  | 1      | 9.0                                  | 5                                    | 25.97                                | 15.4                            |
| SMAJ10            | SMAJ10C     | AW           | WW | 11.10                    | 13.60  | 1      | 10.0                                 | 5                                    | 21.28                                | 18.8                            |
| SMAJ10A           | SMAJ10CA    | AX           | WX | 11.10                    | 12.30  | 1      | 10.0                                 | 5                                    | 23.53                                | 17.0                            |
| SMAJ11            | SMAJ11C     | AY           | WY | 12.20                    | 14.90  | 1      | 11.0                                 | 5                                    | 19.90                                | 20.1                            |
| SMAJ11A           | SMAJ11CA    | AZ           | WZ | 12.20                    | 13.50  | 1      | 11.0                                 | 5                                    | 21.98                                | 18.2                            |
| SMAJ12            | SMAJ12C     | BD           | XD | 13.30                    | 16.30  | 1      | 12.0                                 | 5                                    | 18.18                                | 22.0                            |
| SMAJ12A           | SMAJ12CA    | BE           | XE | 13.30                    | 14.70  | 1      | 12.0                                 | 5                                    | 20.10                                | 19.9                            |
| SMAJ13            | SMAJ13C     | BF           | XF | 14.40                    | 17.60  | 1      | 13.0                                 | 5                                    | 16.81                                | 23.8                            |
| SMAJ13A           | SMAJ13CA    | BG           | XG | 14.40                    | 15.90  | 1      | 13.0                                 | 5                                    | 18.60                                | 21.5                            |
| SMAJ14            | SMAJ14C     | BH           | XH | 15.60                    | 19.10  | 1      | 14.0                                 | 5                                    | 15.50                                | 25.8                            |
| SMAJ14A           | SMAJ14CA    | BK           | XK | 15.60                    | 17.20  | 1      | 14.0                                 | 5                                    | 17.24                                | 23.3                            |
| SMAJ15            | SMAJ15C     | BL           | XL | 16.70                    | 20.40  | 1      | 15.0                                 | 5                                    | 14.87                                | 26.9                            |
| SMAJ15A           | SMAJ15CA    | BM           | XM | 16.70                    | 18.50  | 1      | 15.0                                 | 5                                    | 16.39                                | 24.4                            |
| SMAJ16            | SMAJ16C     | BN           | XN | 17.80                    | 21.80  | 1      | 16.0                                 | 5                                    | 13.89                                | 28.8                            |
| SMAJ16A           | SMAJ16CA    | BP           | XP | 17.80                    | 19.70  | 1      | 16.0                                 | 5                                    | 15.38                                | 26.0                            |
| SMAJ17            | SMAJ17C     | BQ           | XQ | 18.90                    | 23.10  | 1      | 17.0                                 | 5                                    | 13.11                                | 30.5                            |
| SMAJ17A           | SMAJ17CA    | BR           | XR | 18.90                    | 20.90  | 1      | 17.0                                 | 5                                    | 14.49                                | 27.6                            |
| SMAJ18            | SMAJ18C     | BS           | XS | 20.00                    | 24.40  | 1      | 18.0                                 | 5                                    | 12.42                                | 32.2                            |
| SMAJ18A           | SMAJ18CA    | BT           | XT | 20.00                    | 22.10  | 1      | 18.0                                 | 5                                    | 13.70                                | 29.2                            |
| SMAJ19            | SMAJ19C     | BA           | XA | 21.10                    | 25.76  | 1      | 19.0                                 | 5                                    | 11.76                                | 34.0                            |
| SMAJ19A           | SMAJ19CA    | BB           | XB | 21.10                    | 23.30  | 1      | 19.0                                 | 5                                    | 13.00                                | 30.8                            |
| SMAJ20            | SMAJ20C     | BU           | XU | 22.20                    | 27.10  | 1      | 20.0                                 | 5                                    | 11.17                                | 35.8                            |
| SMAJ20A           | SMAJ20CA    | BV           | XV | 22.20                    | 24.50  | 1      | 20.0                                 | 5                                    | 12.35                                | 32.4                            |
| SMAJ22            | SMAJ22C     | BW           | XW | 24.40                    | 29.80  | 1      | 22.0                                 | 5                                    | 10.15                                | 39.4                            |
| SMAJ22A           | SMAJ22CA    | BX           | XX | 24.40                    | 26.90  | 1      | 22.0                                 | 5                                    | 11.27                                | 35.5                            |
| SMAJ24            | SMAJ24C     | BY           | XY | 26.70                    | 32.60  | 1      | 24.0                                 | 5                                    | 9.30                                 | 43.0                            |
| SMAJ24A           | SMAJ24CA    | BZ           | XZ | 26.70                    | 29.50  | 1      | 24.0                                 | 5                                    | 10.28                                | 38.9                            |
| SMAJ26            | SMAJ26C     | CD           | YD | 28.90                    | 35.30  | 1      | 26.0                                 | 5                                    | 8.58                                 | 46.6                            |
| SMAJ26A           | SMAJ26CA    | CE           | YE | 28.90                    | 31.90  | 1      | 26.0                                 | 5                                    | 9.50                                 | 42.1                            |
| SMAJ28            | SMAJ28C     | CF           | YF | 31.10                    | 38.00  | 1      | 28.0                                 | 5                                    | 8.00                                 | 50.0                            |
| SMAJ28A           | SMAJ28CA    | CG           | YG | 31.10                    | 34.40  | 1      | 28.0                                 | 5                                    | 8.81                                 | 45.4                            |
| SMAJ30            | SMAJ30C     | CH           | YH | 33.30                    | 40.70  | 1      | 30.0                                 | 5                                    | 7.48                                 | 53.5                            |
| SMAJ30A           | SMAJ30CA    | CK           | YK | 33.30                    | 36.80  | 1      | 30.0                                 | 5                                    | 8.26                                 | 48.4                            |
| SMAJ33            | SMAJ33C     | CL           | YL | 36.70                    | 44.90  | 1      | 33.0                                 | 5                                    | 6.78                                 | 59.0                            |

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|-------------------|-------------|--------------|----|--------------------------|--------|--------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------------|
|                   | (Bi)        | Uni          | Bi | Min(V)                   | Max(V) | IT(mA) |                                      |                                      |                                      |                                 |
| SMAJ33A           | SMAJ33CA    | CM           | YM | 36.70                    | 40.60  | 1      | 33.0                                 | 5                                    | 7.50                                 | 53.3                            |
| SMAJ36            | SMAJ36C     | CN           | YN | 40.00                    | 48.90  | 1      | 36.0                                 | 5                                    | 6.22                                 | 64.3                            |
| SMAJ36A           | SMAJ36CA    | CP           | YP | 40.00                    | 44.20  | 1      | 36.0                                 | 5                                    | 6.88                                 | 58.1                            |
| SMAJ40            | SMAJ40C     | CQ           | YQ | 44.40                    | 54.30  | 1      | 40.0                                 | 5                                    | 5.60                                 | 71.4                            |
| SMAJ40A           | SMAJ40CA    | CR           | YR | 44.40                    | 49.10  | 1      | 40.0                                 | 5                                    | 6.20                                 | 64.5                            |
| SMAJ43            | SMAJ43C     | CS           | YS | 47.80                    | 58.40  | 1      | 43.0                                 | 5                                    | 5.22                                 | 76.7                            |
| SMAJ43A           | SMAJ43CA    | CT           | YT | 47.80                    | 52.80  | 1      | 43.0                                 | 5                                    | 5.76                                 | 69.4                            |
| SMAJ45            | SMAJ45C     | CU           | YU | 50.00                    | 61.10  | 1      | 45.0                                 | 5                                    | 4.98                                 | 80.3                            |
| SMAJ45A           | SMAJ45CA    | CV           | YV | 50.00                    | 55.30  | 1      | 45.0                                 | 5                                    | 5.50                                 | 72.7                            |
| SMAJ48            | SMAJ48C     | CW           | YW | 53.30                    | 65.10  | 1      | 48.0                                 | 5                                    | 4.68                                 | 85.5                            |
| SMAJ48A           | SMAJ48CA    | CX           | YX | 53.30                    | 58.90  | 1      | 48.0                                 | 5                                    | 5.17                                 | 77.4                            |
| SMAJ51            | SMAJ51C     | CY           | YY | 56.70                    | 69.30  | 1      | 51.0                                 | 5                                    | 4.39                                 | 91.1                            |
| SMAJ51A           | SMAJ51CA    | CZ           | YZ | 56.70                    | 62.70  | 1      | 51.0                                 | 5                                    | 4.85                                 | 82.4                            |
| SMAJ54            | SMAJ54C     | RD           | ZD | 60.00                    | 73.30  | 1      | 54.0                                 | 5                                    | 4.15                                 | 96.3                            |
| SMAJ54A           | SMAJ54CA    | RE           | ZE | 60.00                    | 66.30  | 1      | 54.0                                 | 5                                    | 4.59                                 | 87.1                            |
| SMAJ58            | SMAJ58C     | RF           | ZF | 64.40                    | 78.70  | 1      | 58.0                                 | 5                                    | 3.88                                 | 103.0                           |
| SMAJ58A           | SMAJ58CA    | RG           | ZG | 64.40                    | 71.20  | 1      | 58.0                                 | 5                                    | 4.27                                 | 93.6                            |
| SMAJ60            | SMAJ60C     | RH           | ZH | 66.70                    | 81.50  | 1      | 60.0                                 | 5                                    | 3.74                                 | 107.0                           |
| SMAJ60A           | SMAJ60CA    | RK           | ZK | 66.70                    | 73.70  | 1      | 60.0                                 | 5                                    | 4.13                                 | 96.8                            |
| SMAJ64            | SMAJ64C     | RL           | ZL | 71.10                    | 86.90  | 1      | 64.0                                 | 5                                    | 3.51                                 | 114.0                           |
| SMAJ64A           | SMAJ64CA    | RM           | ZM | 71.10                    | 78.60  | 1      | 64.0                                 | 5                                    | 3.88                                 | 103.0                           |
| SMAJ70            | SMAJ70C     | RN           | ZN | 77.80                    | 95.10  | 1      | 70.0                                 | 5                                    | 3.20                                 | 125.0                           |
| SMAJ70A           | SMAJ70CA    | RP           | ZP | 77.80                    | 86.00  | 1      | 70.0                                 | 5                                    | 3.54                                 | 113.0                           |
| SMAJ75            | SMAJ75C     | RQ           | ZQ | 83.30                    | 102.00 | 1      | 75.0                                 | 5                                    | 2.99                                 | 134.0                           |
| SMAJ75A           | SMAJ75CA    | RR           | ZR | 83.30                    | 92.10  | 1      | 75.0                                 | 5                                    | 3.31                                 | 121.0                           |
| SMAJ78            | SMAJ78C     | RS           | ZS | 86.70                    | 106.00 | 1      | 78.0                                 | 5                                    | 2.88                                 | 139.0                           |
| SMAJ78A           | SMAJ78CA    | RT           | ZT | 86.70                    | 95.80  | 1      | 78.0                                 | 5                                    | 3.17                                 | 126.0                           |
| SMAJ80            | SMAJ80C     | RA           | ZA | 88.96                    | 108.80 | 1      | 80.0                                 | 5                                    | 2.79                                 | 143.2                           |
| SMAJ80A           | SMAJ80CA    | RB           | ZB | 88.80                    | 97.60  | 1      | 80.0                                 | 5                                    | 3.09                                 | 129.6                           |
| SMAJ85            | SMAJ85C     | RU           | ZU | 94.40                    | 115.00 | 1      | 85.0                                 | 5                                    | 2.65                                 | 151.0                           |
| SMAJ85A           | SMAJ85CA    | RV           | ZV | 94.40                    | 104.00 | 1      | 85.0                                 | 5                                    | 2.92                                 | 137.0                           |
| SMAJ90            | SMAJ90C     | RW           | ZW | 100.00                   | 122.00 | 1      | 90.0                                 | 5                                    | 2.50                                 | 160.0                           |
| SMAJ90A           | SMAJ90CA    | RX           | ZX | 100.00                   | 111.00 | 1      | 90.0                                 | 5                                    | 2.74                                 | 146.0                           |
| SMAJ100           | SMAJ100C    | RY           | ZY | 111.00                   | 136.00 | 1      | 100.0                                | 5                                    | 2.23                                 | 179.0                           |
| SMAJ100A          | SMAJ100CA   | RZ           | ZZ | 111.00                   | 123.00 | 1      | 100.0                                | 5                                    | 2.47                                 | 162.0                           |
| SMAJ110           | SMAJ110C    | SD           | VD | 122.00                   | 149.00 | 1      | 110.0                                | 5                                    | 2.04                                 | 196.0                           |
| SMAJ110A          | SMAJ110CA   | SE           | VE | 122.00                   | 135.00 | 1      | 110.0                                | 5                                    | 2.26                                 | 177.0                           |
| SMAJ120           | SMAJ120C    | SF           | VF | 133.00                   | 163.00 | 1      | 120.0                                | 5                                    | 1.87                                 | 214.0                           |
| SMAJ120A          | SMAJ120CA   | SG           | VG | 133.00                   | 147.00 | 1      | 120.0                                | 5                                    | 2.07                                 | 193.0                           |
| SMAJ130           | SMAJ130C    | SH           | VH | 144.00                   | 176.00 | 1      | 130.0                                | 5                                    | 1.73                                 | 231.0                           |
| SMAJ130A          | SMAJ130CA   | SK           | VK | 144.00                   | 159.00 | 1      | 130.0                                | 5                                    | 1.91                                 | 209.0                           |
| SMAJ140           | SMAJ140C    | SA           | VA | 155.68                   | 190.40 | 1      | 140.0                                | 5                                    | 1.60                                 | 250.6                           |
| SMAJ140A          | SMAJ140CA   | SB           | VB | 155.00                   | 171.00 | 1      | 140.0                                | 5                                    | 1.76                                 | 226.8                           |
| SMAJ150           | SMAJ150C    | SL           | VL | 167.00                   | 204.00 | 1      | 150.0                                | 5                                    | 1.49                                 | 268.0                           |
| SMAJ150A          | SMAJ150CA   | SM           | VM | 167.00                   | 185.00 | 1      | 150.0                                | 5                                    | 1.65                                 | 243.0                           |
| SMAJ160           | SMAJ160C    | SN           | VN | 178.00                   | 218.00 | 1      | 160.0                                | 5                                    | 1.39                                 | 287.0                           |
| SMAJ160A          | SMAJ160CA   | SP           | VP | 178.00                   | 197.00 | 1      | 160.0                                | 5                                    | 1.54                                 | 259.0                           |
| SMAJ170           | SMAJ170C    | SQ           | VQ | 189.00                   | 231.00 | 1      | 170.0                                | 5                                    | 1.32                                 | 304.0                           |
| SMAJ170A          | SMAJ170CA   | SR           | VR | 189.00                   | 209.00 | 1      | 170.0                                | 5                                    | 1.45                                 | 275.0                           |

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|-------------------|------------------|--------------|----|--------------------------|--------|--------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------------|
|                   |                  | Uni          | Bi | Min(V)                   | Max(V) | IT(mA) |                                      |                                      |                                      |                                 |
| SMAJ180           | SMAJ180C         | SS           | VS | 200.16                   | 244.80 | 1      | 180.0                                | 5                                    | 1.24                                 | 322.2                           |
| SMAJ180A          | SMAJ180CA        | ST           | VT | 200.00                   | 220.00 | 1      | 180.0                                | 5                                    | 1.37                                 | 291.6                           |
| SMAJ190           | SMAJ190C         | SU           | VU | 211.00                   | 258.40 | 1      | 190.0                                | 5                                    | 1.18                                 | 340.1                           |
| SMAJ190A          | SMAJ190CA        | SV           | VV | 211.00                   | 232.00 | 1      | 190.0                                | 5                                    | 1.30                                 | 307.8                           |
| SMAJ200A          | SMAJ200CA        | SW           | VW | 224.00                   | 247.00 | 1      | 200.0                                | 5                                    | 1.23                                 | 324.0                           |
| SMAJ220A          | SMAJ220CA        | SX           | VX | 246.00                   | 272.00 | 1      | 220.0                                | 5                                    | 1.12                                 | 356.0                           |
| SMAJ250A          | SMAJ250CA        | SZ           | VZ | 279.00                   | 309.00 | 1      | 250.0                                | 5                                    | 0.99                                 | 405.0                           |
| SMAJ300A          | SMAJ300CA        | DE           | HE | 335.00                   | 371.00 | 1      | 300.0                                | 5                                    | 0.82                                 | 486.0                           |
| SMAJ350A          | SMAJ350CA        | DG           | HG | 391.00                   | 432.00 | 1      | 350.0                                | 5                                    | 0.71                                 | 567.0                           |
| SMAJ400A          | SMAJ400CA        | DK           | HK | 447.00                   | 494.00 | 1      | 400.0                                | 5                                    | 0.62                                 | 648.0                           |
| SMAJ440A          | SMAJ400CA        | DM           | HM | 492.00                   | 543.00 | 1      | 440.0                                | 5                                    | 0.56                                 | 713.0                           |

## CHARACTERISTICS CURVES

Fig.1 Pulse Derating Curve

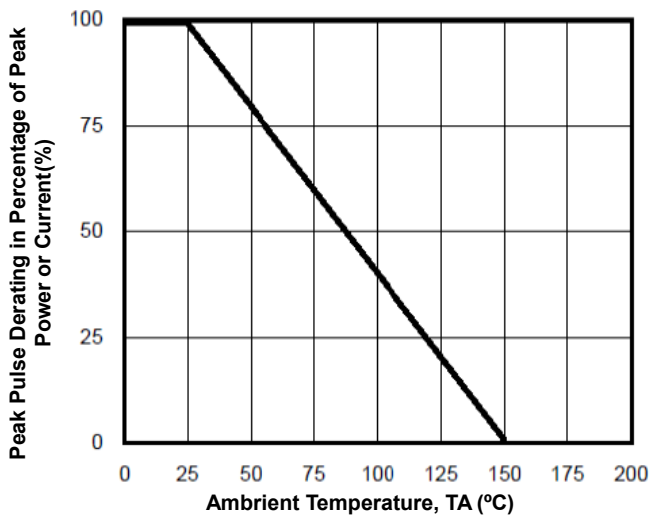


Fig 2. Maximum Non-Repetitive Surge Current

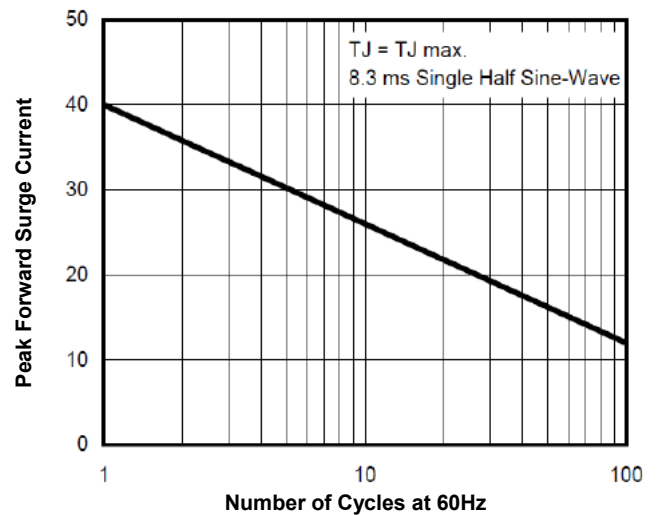


Fig 3. Steady State Power Derating Curve

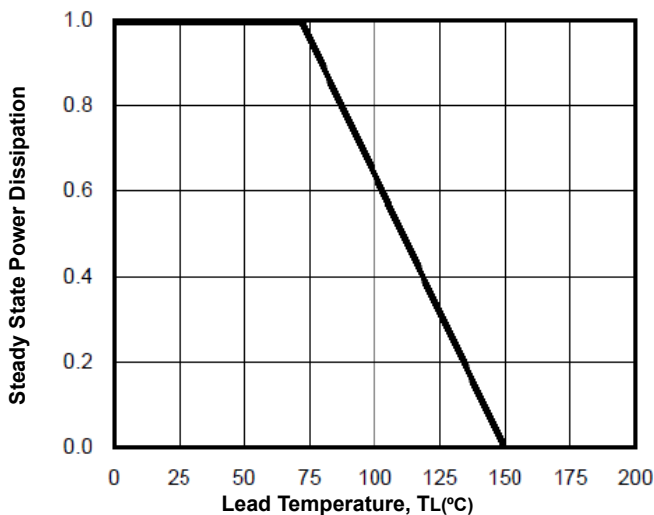
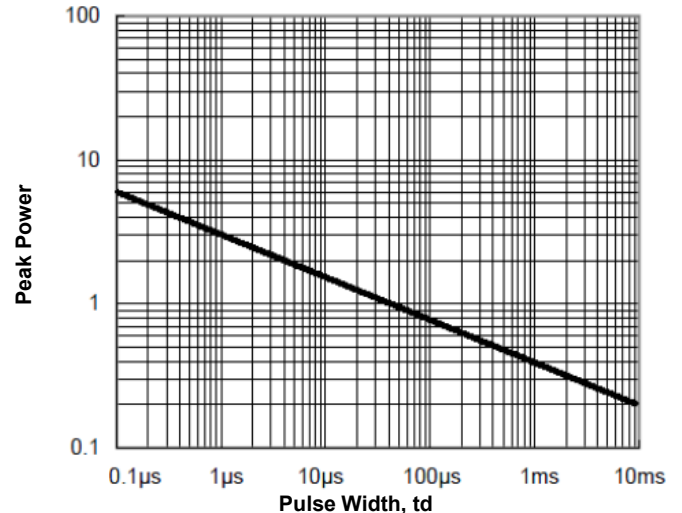


Fig 4. Peak Pulse Power Rating Curve



# Transient Voltage Suppressors DO-214AC/SMA Package

SMAJ Series

MERITEK

## CHARACTERISTICS CURVES(Continued)

Fig 5. Pulse Waveform

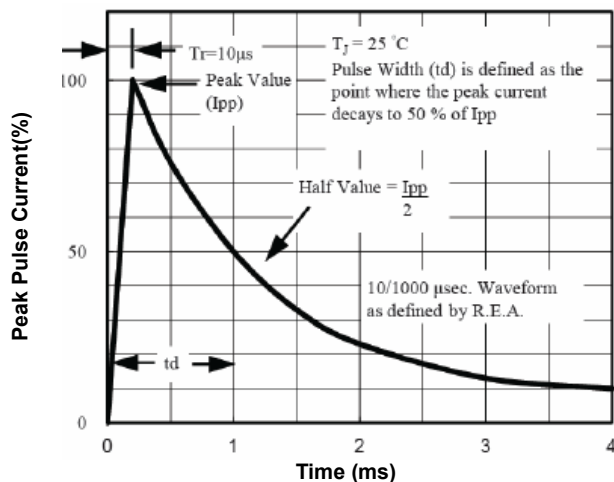
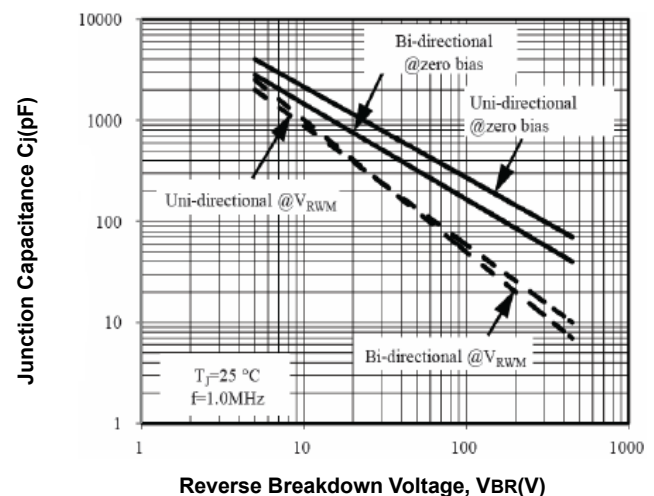
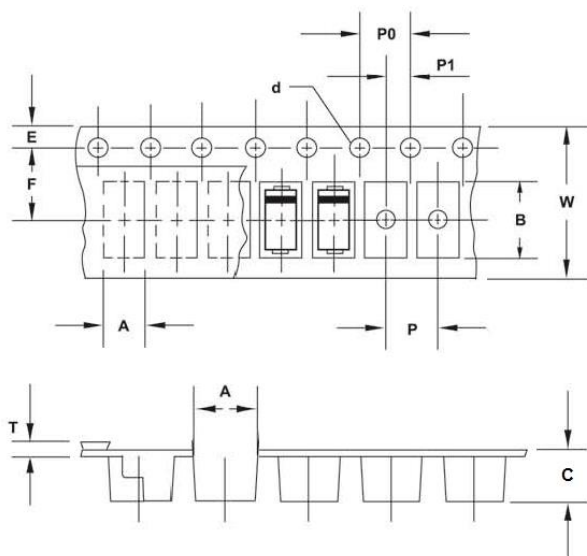


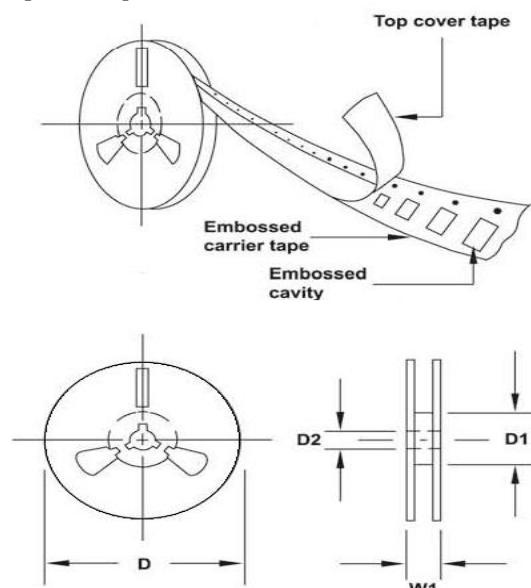
Fig 6. Typical Junction Capacitance



## PACKAGING SPECIFICATION- DO214AC (SMA) - Tape Carrier and Reel



DO-214AC(SMA) - Tape carrier



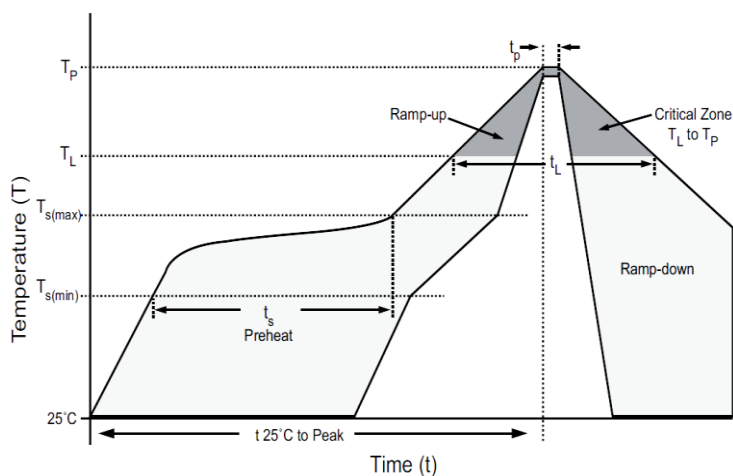
DO-214AC(SMA) - Reel

| Item                   | Symbol | DO-214AC (SMA)   | Item                   | Symbol | DO-214AC (SMA)   |
|------------------------|--------|------------------|------------------------|--------|------------------|
| Carrier width          | A      | $3.00 \pm 0.10$  | Punch hole position    | F      | $5.65 \pm 0.05$  |
| Carrier length         | B      | $5.40 \pm 0.10$  | Punch hole pitch       | P      | $4.00 \pm 0.10$  |
| Carrier depth          | C      | $2.40 \pm 0.10$  | Sprocket hole pitch    | P0     | $4.00 \pm 0.10$  |
| Sprocket hole          | d      | $1.50 \pm 0.10$  | Embossment center      | P1     | $2.00 \pm 0.10$  |
| Reel outside diameter  | D      | $330.0 \pm 2.0$  | Overall tape thickness | T      | $0.30 \pm 0.05$  |
| Reel inner diameter    | D1     | 50 min.          | Tape width             | W      | $12.00 \pm 0.20$ |
| Feed hole diameter     | D2     | $13.00 \pm 0.50$ | Reel width             | W1     | $16.80 \pm 2.00$ |
| Sprocket hole position | E      | $1.50 \pm 0.10$  |                        |        |                  |

Unit: mm

## RECOMMENDED SOLDERING PROFILES

| Reflow Condition                                     |                               |                         |
|------------------------------------------------------|-------------------------------|-------------------------|
| Average Ramp-up Rate $T_L$ to $T_P$                  |                               | 3°C/second max.         |
| Pre Heat                                             | Temp. Min $T_{s(min)}$        | 150°C                   |
|                                                      | Tempe. Max $T_{s(max)}$       | 200°C                   |
|                                                      | Time (min. to max.) ( $t_s$ ) | 60-120 seconds          |
| Ramp-up Rate $T_{s(max)}$ to $T_L$                   |                               | 3°C/second max.         |
| Reflow                                               | Temp. ( $T_L$ )               | 217°C                   |
|                                                      | Time ( $t_L$ )                | 60-260 seconds          |
| Peak Temperature ( $T_P$ )                           |                               | 255 <sup>+0/+5</sup> °C |
| Time within 5°C of actual peak Temperature ( $t_p$ ) |                               | 10-30 seconds           |
| Ramp-down Rate                                       |                               | 6°C/second max.         |
| Time 25°C to peak Temp. ( $T_P$ )                    |                               | 6 minutes max.          |



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