

# SMAJ4728A THRU SMAJ4761A

## Features

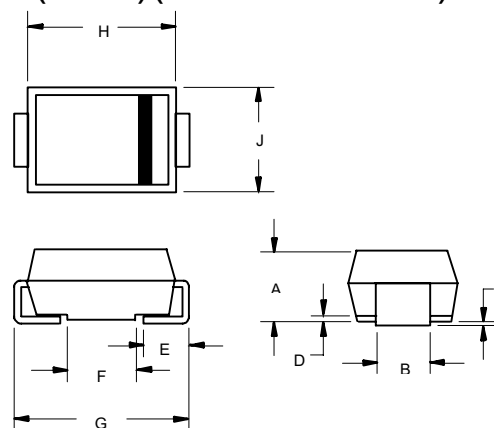
- Low Zener Impedance
- Low Regulation Factor
- $V_Z$  – tolerance:  $\pm 5\%$
- For Surface Mount Applications
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)

## Maximum Ratings@25°C Unless Otherwise Specified

| Parameters                     | Test Conditions                        | Symbol                             | Value           | Unit             |
|--------------------------------|----------------------------------------|------------------------------------|-----------------|------------------|
| Power Dissipation              | $T_{amb} \leq 50^\circ\text{C}$        | $P_d$                              | 1               | W                |
| Z-Current                      |                                        | $I_z$                              | $P_d/V_z$       | mA               |
| Operating Junction Temperature |                                        | $T_j$                              | $-65 \sim +150$ | $^\circ\text{C}$ |
| Storage Temperature            |                                        | $T_{stg}$                          | $-65 \sim +150$ | $^\circ\text{C}$ |
| Thermal Resistance             | FR-4 Board, MCC's Suggested Solder Pad | $R_{\theta ja}$<br>$R_{\theta jL}$ | 100<br>75       | K/W              |
| Max. Forward Voltage Drop      | $I_F = 100\text{mA}$                   | $V_f$                              | 1.2             | V                |

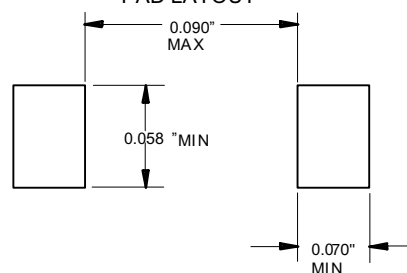
## 1 Watt Zener Diode 3.3 to 75 Volts

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



| DIM | INCHES |      | MM   |      | NOTE |
|-----|--------|------|------|------|------|
|     | MIN    | MAX  | MIN  | MAX  |      |
| A   | .079   | .096 | 2.00 | 2.44 |      |
| B   | .050   | .064 | 1.27 | 1.63 |      |
| C   | .002   | .008 | .05  | .20  |      |
| D   | ---    | .02  | ---  | .51  |      |
| E   | .030   | .060 | .76  | 1.52 |      |
| F   | .065   | .091 | 1.65 | 2.32 |      |
| G   | .189   | .220 | 4.80 | 5.59 |      |
| H   | .157   | .181 | 4.00 | 4.60 |      |
| J   | .090   | .115 | 2.25 | 2.92 |      |

## SUGGESTED SOLDER PAD LAYOUT



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

**ELECTRICAL CHARACTERISTICS @25°C**

| MCC PART NUMBER | ZENER VOLTAGE $V_Z(1)$<br>VOLTS | TEST CURRENT $I_{ZT}$<br>mA | MAXIMUM DYNAMIC IMPEDANCE $Z_{ZT} @ I_{ZT}$<br>OHMS | MAXIMUM REVERSE CURRENT $I_R @ V_R$<br>$\mu A$ | TEST VOLTAGE $V_R$<br>VOLTS | MAXIMUM KNEE IMPEDANCE $Z_{ZK} @ I_{ZK}$<br>OHMS | TEST CURRENT $I_{ZK}$<br>mA | DEVICE MARKING |
|-----------------|---------------------------------|-----------------------------|-----------------------------------------------------|------------------------------------------------|-----------------------------|--------------------------------------------------|-----------------------------|----------------|
| SMAJ4728A       | 3.3                             | 76                          | 10                                                  | 100                                            | 1                           | 400                                              | 1.0                         | 728A           |
| SMAJ4729A       | 3.6                             | 69                          | 10                                                  | 100                                            | 1                           | 400                                              | 1.0                         | 729A           |
| SMAJ4730A       | 3.9                             | 64                          | 9                                                   | 50                                             | 1                           | 400                                              | 1.0                         | 730A           |
| SMAJ4731A       | 4.3                             | 58                          | 9                                                   | 10                                             | 1                           | 400                                              | 1.0                         | 731A           |
| SMAJ4732A       | 4.7                             | 53                          | 8                                                   | 10                                             | 1                           | 500                                              | 1.0                         | 732A           |
| SMAJ4733A       | 5.1                             | 49                          | 7                                                   | 10                                             | 1                           | 550                                              | 1.0                         | 733A           |
| SMAJ4734A       | 5.6                             | 45                          | 5                                                   | 10                                             | 2                           | 600                                              | 1.0                         | 734A           |
| SMAJ4735A       | 6.2                             | 41                          | 2                                                   | 10                                             | 3                           | 700                                              | 1.0                         | 735A           |
| SMAJ4736A       | 6.8                             | 37                          | 3.5                                                 | 10                                             | 4                           | 700                                              | 1.0                         | 736A           |
| SMAJ4737A       | 7.5                             | 34                          | 4.0                                                 | 10                                             | 5                           | 700                                              | 0.5                         | 737A           |
| SMAJ4738A       | 8.2                             | 31                          | 4.5                                                 | 10                                             | 6                           | 700                                              | 0.5                         | 738A           |
| SMAJ4739A       | 9.1                             | 28                          | 5.0                                                 | 10                                             | 7                           | 700                                              | 0.5                         | 739A           |
| SMAJ4740A       | 10                              | 25                          | 7                                                   | 10                                             | 7.6                         | 700                                              | 0.25                        | 740A           |
| SMAJ4741A       | 11                              | 23                          | 8                                                   | 5                                              | 8.4                         | 700                                              | 0.25                        | 741A           |
| SMAJ4742A       | 12                              | 21                          | 9                                                   | 5                                              | 9.1                         | 700                                              | 0.25                        | 742A           |
| SMAJ4743A       | 13                              | 19                          | 10                                                  | 5                                              | 9.9                         | 700                                              | 0.25                        | 743A           |
| SMAJ4744A       | 15                              | 17                          | 14                                                  | 5                                              | 11.4                        | 700                                              | 0.25                        | 744A           |
| SMAJ4745A       | 16                              | 15.5                        | 16                                                  | 5                                              | 12.2                        | 700                                              | 0.25                        | 745A           |
| SMAJ4746A       | 18                              | 14                          | 20                                                  | 5                                              | 13.7                        | 750                                              | 0.25                        | 746A           |
| SMAJ4747A       | 20                              | 12.5                        | 22                                                  | 5                                              | 15.2                        | 750                                              | 0.25                        | 747A           |
| SMAJ4748A       | 22                              | 11.5                        | 23                                                  | 5                                              | 16.7                        | 750                                              | 0.25                        | 748A           |
| SMAJ4749A       | 24                              | 10.5                        | 25                                                  | 5                                              | 18.2                        | 750                                              | 0.25                        | 749A           |
| SMAJ4750A       | 27                              | 9.5                         | 35                                                  | 5                                              | 20.6                        | 750                                              | 0.25                        | 750A           |
| SMAJ4751A       | 30                              | 8.5                         | 40                                                  | 5                                              | 22.8                        | 1000                                             | 0.25                        | 751A           |
| SMAJ4752A       | 33                              | 7.5                         | 45                                                  | 5                                              | 25.1                        | 1000                                             | 0.25                        | 752A           |
| SMAJ4753A       | 36                              | 7.0                         | 50                                                  | 5                                              | 27.4                        | 1000                                             | 0.25                        | 753A           |
| SMAJ4754A       | 39                              | 6.5                         | 60                                                  | 5                                              | 29.7                        | 1000                                             | 0.25                        | 754A           |
| SMAJ4755A       | 43                              | 6.0                         | 70                                                  | 5                                              | 32.7                        | 1500                                             | 0.25                        | 755A           |
| SMAJ4756A       | 47                              | 5.5                         | 80                                                  | 5                                              | 35.8                        | 1500                                             | 0.25                        | 756A           |
| SMAJ4757A       | 51                              | 5.0                         | 95                                                  | 5                                              | 38.8                        | 1500                                             | 0.25                        | 757A           |
| SMAJ4758A       | 56                              | 4.5                         | 110                                                 | 5                                              | 42.6                        | 2000                                             | 0.25                        | 758A           |
| SMAJ4759A       | 62                              | 4.0                         | 125                                                 | 5                                              | 47.1                        | 2000                                             | 0.25                        | 759A           |
| SMAJ4760A       | 68                              | 3.7                         | 150                                                 | 5                                              | 51.7                        | 2000                                             | 0.25                        | 760A           |
| SMAJ4761A       | 75                              | 3.3                         | 175                                                 | 5                                              | 56.0                        | 2000                                             | 0.25                        | 761A           |

1) Based on DC-measurement at thermal equilibrium while maintaining the lead temperature( $T_L$ ) at 30°C

### Characteristics ( $T_J=25^\circ\text{C}$ unless otherwise specified)

| Symbol   | Parameter                          |
|----------|------------------------------------|
| $V_Z$    | Reverse zener voltage @ $I_{ZT}$   |
| $I_{ZT}$ | Reverse current                    |
| $Z_{ZT}$ | Maximum zener impedance @ $I_{ZT}$ |
| $I_{ZK}$ | Reverse current                    |
| $Z_{ZK}$ | Maximum zener impedance @ $I_{ZK}$ |
| $I_R$    | Reverse leakage current @ $V_R$    |
| $V_R$    | Breakdown voltage                  |
| $I_F$    | Forward current                    |
| $V_F$    | Forward voltage @ $I_F$            |

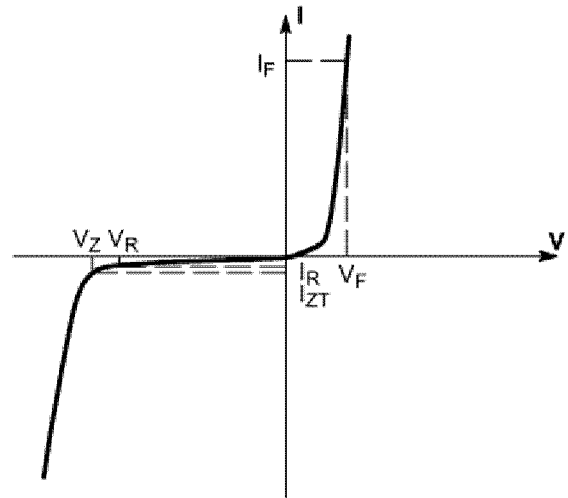


Figure 1. Zener voltage regulator

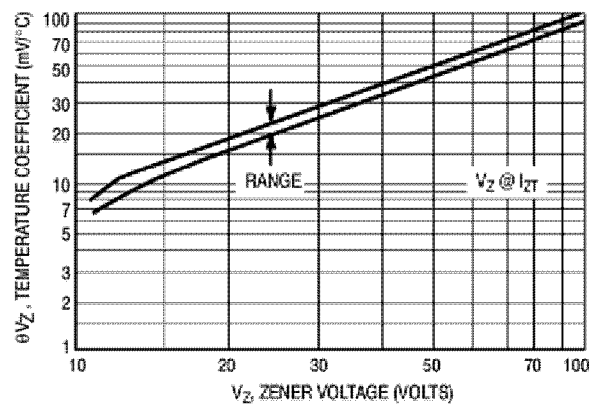
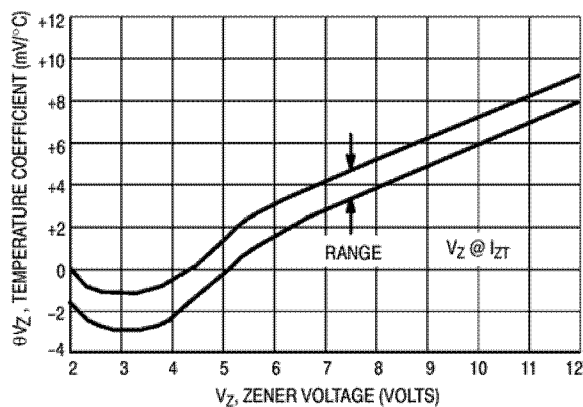


Figure 2. Temperature coefficients

( $-55^\circ\text{C}$  to  $+150^\circ\text{C}$  temperature range; 90% of the units are in the ranges indicated)

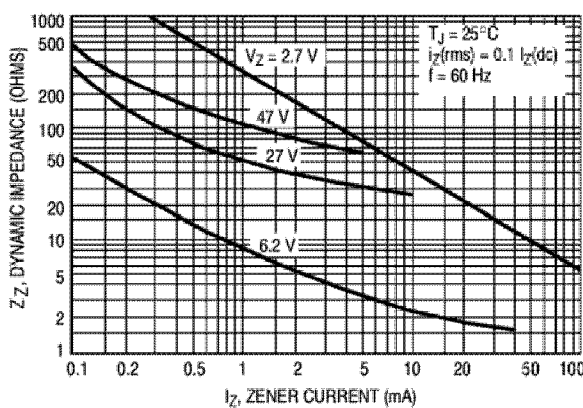


Figure 3. Effect of zener current on zener impedance

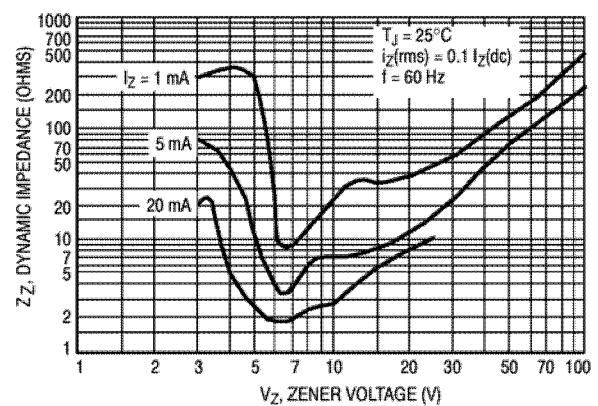


Figure 4. Effect of zener voltage on zener impedance



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## Ordering Information :

| Device         | Packing                 |
|----------------|-------------------------|
| Part Number-TP | Tape&Reel: 7.5Kpcs/Reel |

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