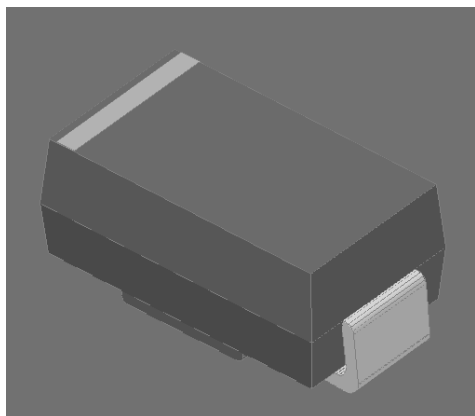


## Surface Mount Zener Diodes



### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Part no. with suffix "Q" means AEC-Q101 qualified

### Mechanical Data

- **Package:** DO-214AC (SMA)  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

### ■Maximum Ratings (T<sub>a</sub>=25 °C Unless otherwise specified)

| PARAMETER                                                        | Symbol           | Unit | Value       |
|------------------------------------------------------------------|------------------|------|-------------|
| Maximum instantaneous forward voltage @ I <sub>F</sub> = 20.0 mA | V <sub>F</sub>   | V    | 1.5         |
| Maximum junction temperature                                     | T <sub>j</sub>   | °C   | -55 to +150 |
| Storage temperature range                                        | T <sub>stg</sub> | °C   | -55 to +150 |

### ■Thermal Characteristics (T<sub>a</sub>=25 °C Unless otherwise specified)

| PARAMETER                                   | Symbol           | Unit | Value |
|---------------------------------------------|------------------|------|-------|
| Thermal resistance from junction to ambient | R <sub>θJA</sub> | °C/W | 120   |

**Note**  
Thermal resistance from junction to ambient and from junction to lead are measured on P.C.B. with 0.4 " x 0.4 " (10 mm x 10 mm) pads.

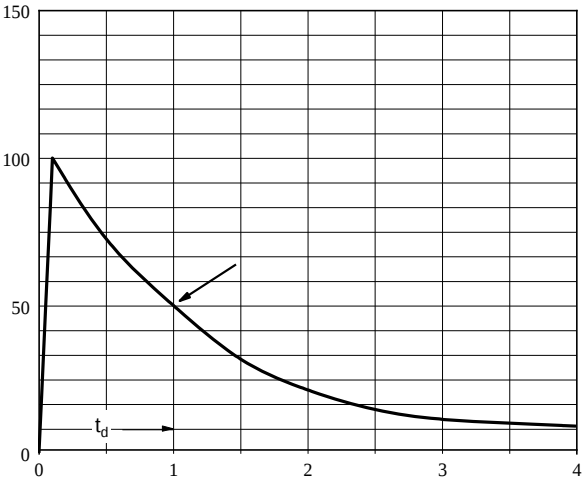
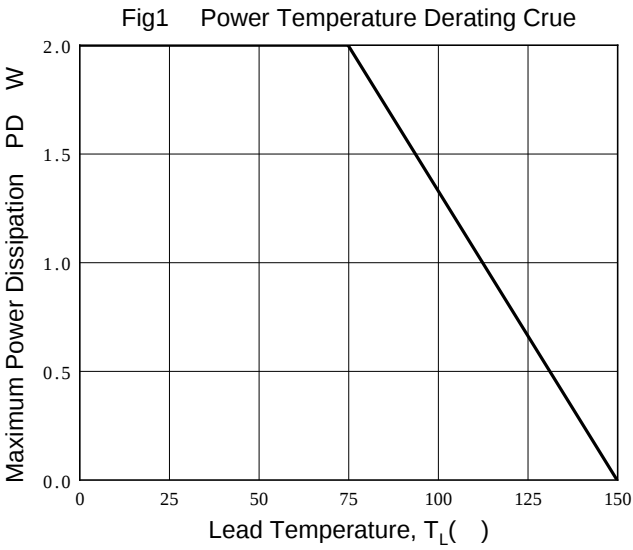


■Electrical Characteristics  $T_a=25$  Unless otherwise specified

| Part Number | Nominal Zener voltage        |                               |                              | Test current | Maximum dynamic impedance resistance |            |      | Maximum reverse leakage current |                 | Maximum DC Zener Current |
|-------------|------------------------------|-------------------------------|------------------------------|--------------|--------------------------------------|------------|------|---------------------------------|-----------------|--------------------------|
|             | Min VZ <sup>(1)</sup> at IZT | Typ. VZ <sup>(1)</sup> at IZT | Max VZ <sup>(1)</sup> at IZT | IZT          | ZZT at IZT                           | ZZK at IZK | IZK  | IR                              | Test voltage VR | IZM                      |
|             | V                            | V                             | V                            | mA           | $\Omega$                             | $\Omega$   | mA   | $\mu$ A                         | V               | mA                       |
| SMA2Z6.8AQ  | 6.46                         | 6.8                           | 7.14                         | 73.5         | 2.0                                  | 700        | 1.00 | 10.0                            | 4.0             | 266.0                    |
| SMA2Z7.5AQ  | 7.13                         | 7.5                           | 7.88                         | 66.5         | 2.0                                  | 700        | 0.50 | 10.0                            | 5.0             | 242.0                    |
| SMA2Z8.2AQ  | 7.79                         | 8.2                           | 8.61                         | 61.0         | 2.3                                  | 700        | 0.50 | 10.0                            | 6.0             | 220.0                    |
| SMA2Z9.1AQ  | 8.65                         | 9.1                           | 9.56                         | 55.0         | 2.5                                  | 700        | 0.50 | 10.0                            | 7.0             | 200.0                    |
| SMA2Z10AQ   | 9.50                         | 10.0                          | 10.50                        | 50.0         | 3.5                                  | 700        | 0.25 | 10.0                            | 7.6             | 182.0 SMA2Zm             |



■ Characteristics (Typical)

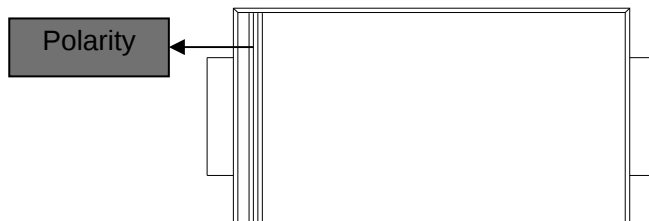




## ■ Ordering Information (Example)

| PREFERRED P/N         | PACKAGE CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|-----------------------|--------------|-------------------|----------------------|----------------------------|---------------|
| SMA2Z6.8AQ~SMA2Z220AQ | F2           | Approximate 0.067 | 7500                 | 120000                     | 13" reel      |

## ■ Marking Information



Note:  
1. All marking is at middle of the product body  
2. All marking is in laser printing

## ■ Outline Dimensions

| DO-214AC(SMA) |      |      |
|---------------|------|------|
| Dim           | Min  | Max  |
| A             | 1.25 | 1.58 |
| B             | 2.40 | 2.83 |
| C             | 4.00 | 4.75 |
| D             | 1.90 | 2.30 |
| E             | 4.93 | 5.28 |
| F             | 0.76 | 1.41 |
| G             | 0.05 | 0.20 |
| H             | 0.15 | 0.31 |
| I             | 1.7  | 2.1  |

## ■ Suggested Pad Layout

| DO-214AC(SMA) |             |
|---------------|-------------|
| Dim           | Millimeters |
| P1            | 4.00        |
| P2            | 1.50        |
| P3            | 6.50        |
| Q1            | 2.50        |
| Q2            | 1.70        |



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