

# CZRA4728-G Thru CZRA4764-G

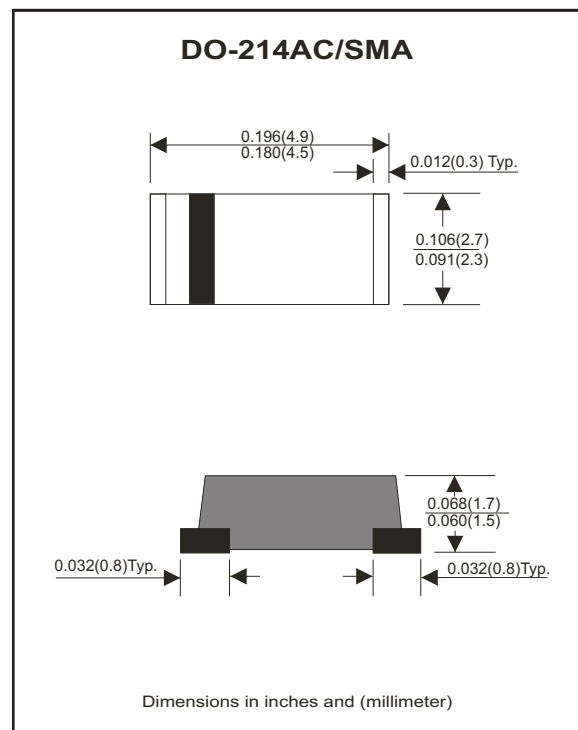
**Voltage: 3.3 to 100 Volts****Power: 1.0 Watts****RoHS Device**

## Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance.
- Standard zener voltage tolerance  $\pm 5\%$ .
- Low inductance.
- Low profile package.
- Built-in strain relief.

## Mechanical data

- Epoxy: UL94V-0 rated flame retardant.
- Case: Molded plastic, JEDEC DO-214AC/SMA
- Terminals: Solder Plated, solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- Mounting position: Any.
- Weight: 0.05 gram(approx.).



## Maximum Ratings (T<sub>A</sub>=25°C, unless otherwise noted)

| Parameter             | Condition                    | Symbol           | MIN. | TYP. | MAX. | Units |
|-----------------------|------------------------------|------------------|------|------|------|-------|
| Forward voltage       | IF = 200 mA                  | V <sub>F</sub>   |      |      | 1.20 | V     |
| Power Dissipation     | @TL = 75°C                   | P <sub>D</sub>   |      |      | 1000 | mW    |
| Thermal resistance    | Junction to case (Note 1)    | R <sub>θJC</sub> |      | 30   |      | °C/W  |
|                       | Junction to ambient (Note 1) | R <sub>θJA</sub> |      | 50   |      | °C/W  |
| Operating temperature |                              | T <sub>J</sub>   | -55  |      | +150 | °C    |
| Storage temperature   |                              | T <sub>STG</sub> | -65  |      | +175 | °C    |

Note: 1. Mounted on 0.2"x0.2" (5x5mm) FR-4 PCB.

## Electrical Characteristics ( at TA = 25°C unless otherwise noted)

| Part Number | Marking Code | Zener Voltage | Test Current | Zener Impedance |           |      | Leakage Current |       | Surge Current |
|-------------|--------------|---------------|--------------|-----------------|-----------|------|-----------------|-------|---------------|
|             |              | Vz@IzT        | IzT          | ZzT @ IzT       | Zzk @ IzK | IzK  | IR              | VR    | Isurge        |
|             |              | Volts         | mA           | oHMs            | oHMs      | mA   | uA              | Volts | mA            |
| CZRA4728-G  | Z3V3         | 3.3           | 76           | 10              | 400       | 1.0  | 100             | 1.0   | 1380          |
| CZRA4729-G  | Z3V6         | 3.6           | 69           | 10              | 400       | 1.0  | 100             | 1.0   | 1260          |
| CZRA4730-G  | Z3V9         | 3.9           | 64           | 9               | 400       | 1.0  | 50              | 1.0   | 1190          |
| CZRA4731-G  | Z4V3         | 4.3           | 58           | 9               | 400       | 1.0  | 10              | 1.0   | 1070          |
| CZRA4732-G  | Z4V7         | 4.7           | 53           | 8               | 500       | 1.0  | 10              | 1.0   | 970           |
| CZRA4733-G  | Z5V1         | 5.1           | 49           | 7               | 550       | 1.0  | 10              | 1.0   | 890           |
| CZRA4734-G  | Z5V6         | 5.6           | 45           | 5               | 600       | 1.0  | 10              | 2.0   | 810           |
| CZRA4735-G  | Z6V2         | 6.2           | 41           | 2               | 700       | 1.0  | 10              | 3.0   | 730           |
| CZRA4736-G  | Z6V8         | 6.8           | 37           | 3.5             | 700       | 1.0  | 10              | 4.0   | 660           |
| CZRA4737-G  | Z7V5         | 7.5           | 34           | 4               | 700       | 0.5  | 10              | 5.0   | 605           |
| CZRA4738-G  | Z8V2         | 8.2           | 31           | 4.5             | 700       | 0.5  | 10              | 6.0   | 550           |
| CZRA4739-G  | Z9V1         | 9.1           | 28           | 5               | 700       | 0.5  | 10              | 7.0   | 500           |
| CZRA4740-G  | Z10          | 10            | 25           | 7               | 700       | 0.25 | 10              | 7.6   | 454           |
| CZRA4741-G  | Z11          | 11            | 23           | 8               | 700       | 0.25 | 5               | 8.4   | 414           |
| CZRA4742-G  | Z12          | 12            | 21           | 9               | 700       | 0.25 | 5               | 9.1   | 380           |
| CZRA4743-G  | Z13          | 13            | 19           | 10              | 700       | 0.25 | 5               | 9.9   | 344           |
| CZRA4744-G  | Z15          | 15            | 17           | 14              | 700       | 0.25 | 5               | 11.4  | 304           |
| CZRA4745-G  | Z16          | 16            | 15.5         | 16              | 700       | 0.25 | 5               | 12.2  | 285           |
| CZRA4746-G  | Z18          | 18            | 14           | 20              | 750       | 0.25 | 5               | 13.7  | 250           |
| CZRA4747-G  | Z20          | 20            | 12.5         | 22              | 750       | 0.25 | 5               | 15.2  | 225           |
| CZRA4748-G  | Z22          | 22            | 11.5         | 23              | 750       | 0.25 | 5               | 16.7  | 205           |
| CZRA4749-G  | Z24          | 24            | 10.5         | 25              | 750       | 0.25 | 5               | 18.2  | 190           |
| CZRA4750-G  | Z27          | 27            | 9.5          | 35              | 750       | 0.25 | 5               | 20.6  | 170           |
| CZRA4751-G  | Z30          | 30            | 8.5          | 40              | 1000      | 0.25 | 5               | 22.8  | 150           |
| CZRA4752-G  | Z33          | 33            | 7.5          | 45              | 1000      | 0.25 | 5               | 25.1  | 135           |
| CZRA4753-G  | Z36          | 36            | 7.0          | 50              | 1000      | 0.25 | 5               | 27.4  | 125           |
| CZRA4754-G  | Z39          | 39            | 6.5          | 60              | 1000      | 0.25 | 5               | 29.7  | 115           |
| CZRA4755-G  | Z43          | 43            | 6.0          | 70              | 1500      | 0.25 | 5               | 32.7  | 110           |

## Electrical Characteristics ( at $T_A = 25^\circ\text{C}$ unless otherwise noted)

| Part Number | Marking Code | Zener Voltage  | Test Current | Zener Impedance   |                   |          | Leakage Current      |       | Surge Current      |
|-------------|--------------|----------------|--------------|-------------------|-------------------|----------|----------------------|-------|--------------------|
|             |              | $V_Z @ I_{ZT}$ | $I_{ZT}$     | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | $I_{ZK}$ | $I_R$                | $V_R$ | $I_{\text{surge}}$ |
|             |              | Volts          | mA           | ( $\Omega$ )Max   | ( $\Omega$ )Max   | mA       | ( $\mu\text{A}$ )Max | Volts | mA                 |
| CZRA4756-G  | Z47          | 47             | 5.5          | 80                | 1500              | 0.25     | 5                    | 35.8  | 95                 |
| CZRA4757-G  | Z51          | 51             | 5.0          | 95                | 1500              | 0.25     | 5                    | 38.8  | 90                 |
| CZRA4758-G  | Z56          | 56             | 4.5          | 110               | 2000              | 0.25     | 5                    | 42.6  | 80                 |
| CZRA4759-G  | Z62          | 62             | 4.0          | 125               | 2000              | 0.25     | 5                    | 47.1  | 70                 |
| CZRA4760-G  | Z68          | 68             | 3.7          | 150               | 2000              | 0.25     | 5                    | 51.7  | 65                 |
| CZRA4761-G  | Z75          | 75             | 3.3          | 175               | 2000              | 0.25     | 5                    | 56.0  | 60                 |
| CZRA4762-G  | Z82          | 82             | 3.0          | 200               | 3000              | 0.25     | 5                    | 62.2  | 55                 |
| CZRA4763-G  | Z91          | 91             | 2.8          | 250               | 3000              | 0.25     | 5                    | 69.2  | 50                 |
| CZRA4764-G  | Z100         | 100            | 2.5          | 350               | 3000              | 0.25     | 5                    | 76.0  | 45                 |

Note: 5% tolerance of Zener voltage.

## RATING AND CHARACTERISTIC CURVES (ACZRA4728-G Thru. ACZRA4764-G)

Fig.1 - Max. Continuous Power Derating

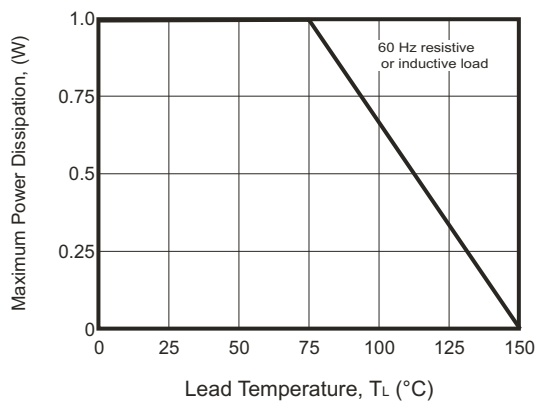
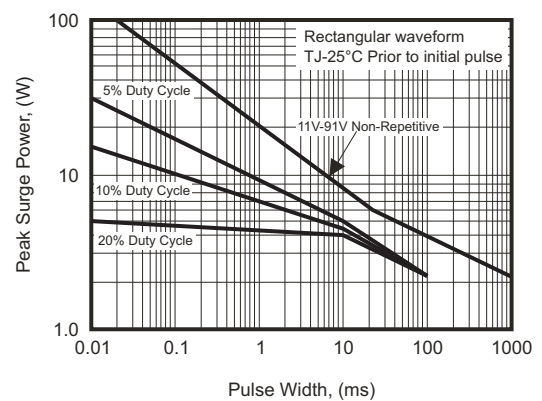


Fig.2 - Maximum surge power



## RATING AND CHARACTERISTIC CURVES ( CZRA4728-G Thru. CZRA4764-G)

FIG 3A. Range for Units to 12 Volts

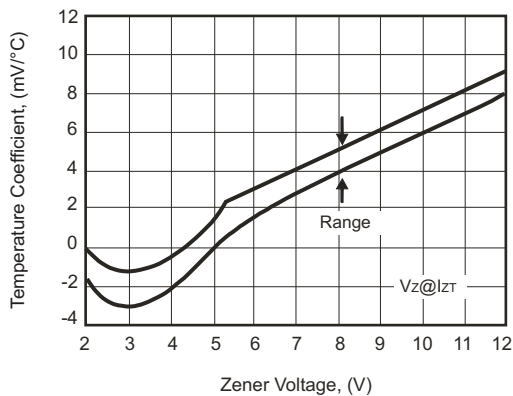


FIG 3B. Range for Units 12 to 100 Volts

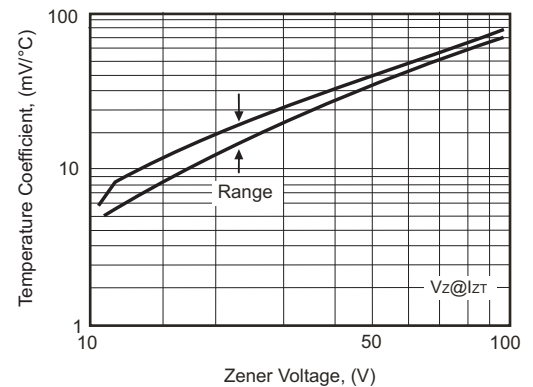


FIG 4. Temperature Coefficients (-55°C to +150°C temperature change ; 90% of the units are in the ranges indicated.)

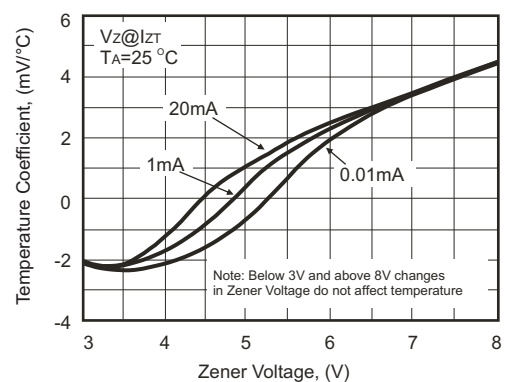
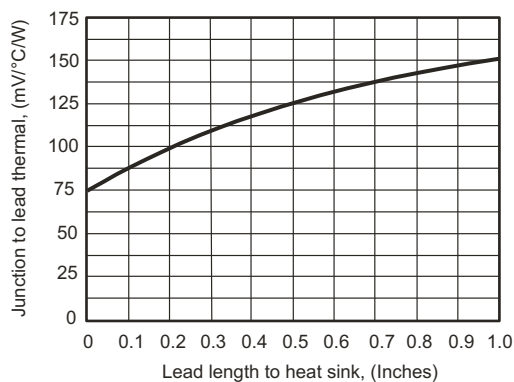


FIG 5. Typical Thermal Resistance Versus Lead

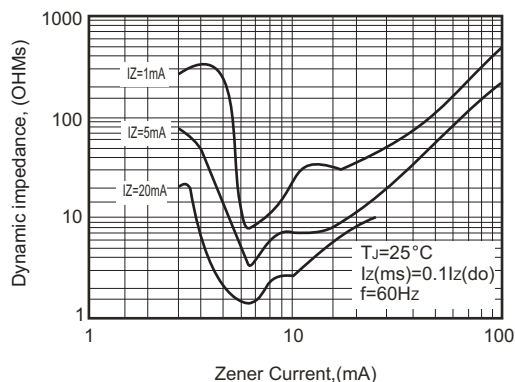
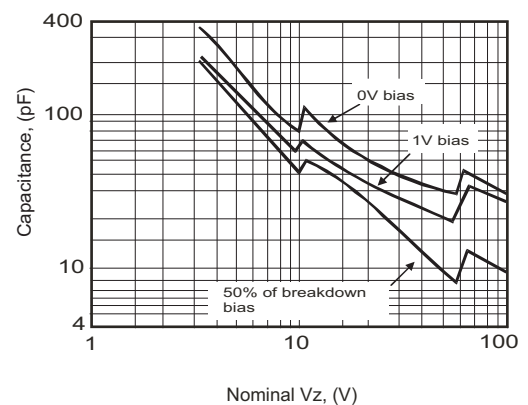
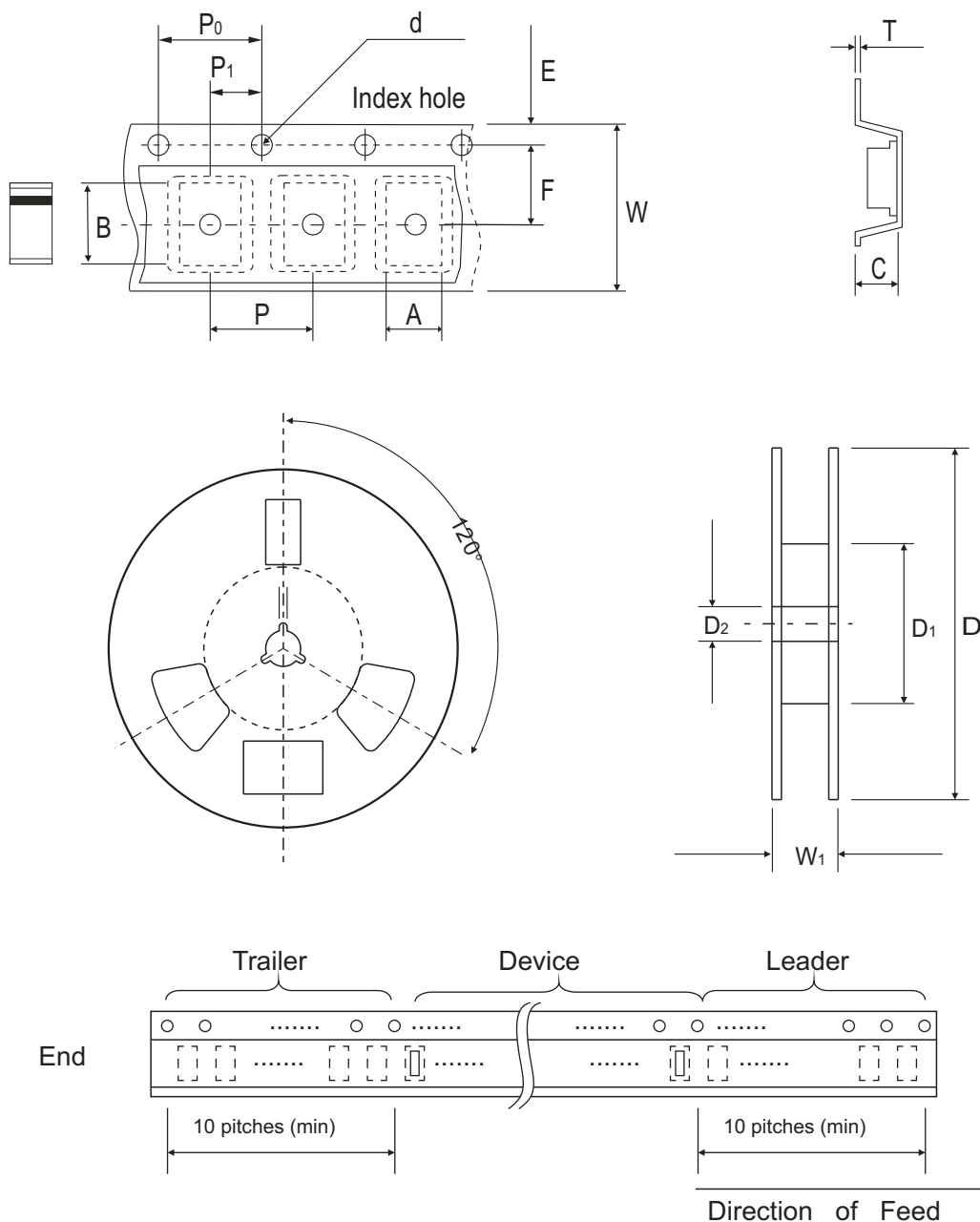


FIG 6. Effect of Zener Current



## Reel Taping Specification



| DO-214AC<br>(SMA) | SYMBOL | A                 | B                 | C                 | d                 | D                 | D1         | D2                |
|-------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|------------|-------------------|
|                   | (mm)   | $2.80 \pm 0.10$   | $5.00 \pm 0.10$   | $1.90 \pm 0.10$   | $1.50 \pm 0.10$   | $178.0 \pm 2.00$  | 62.0 MIN.  | $13.00 \pm 0.50$  |
|                   | (inch) | $0.110 \pm 0.004$ | $0.200 \pm 0.004$ | $0.075 \pm 0.004$ | $0.059 \pm 0.004$ | $7.008 \pm 0.079$ | 2.441 MIN. | $0.512 \pm 0.020$ |

| DO-214AC<br>(SMA) | SYMBOL | E                 | F                 | P                 | $P_0$             | $P_1$             | W                 | $W_1$             |
|-------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                   | (mm)   | $1.75 \pm 0.10$   | $5.50 \pm 0.10$   | $4.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.10$   | $12.00 \pm 0.30$  | $18.00 \pm 1.00$  |
|                   | (inch) | $0.069 \pm 0.004$ | $0.216 \pm 0.004$ | $0.157 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.004$ | $0.472 \pm 0.012$ | $0.709 \pm 0.039$ |

## Pinning information

| Pin                          | Simplified outline                                                                | Symbol                                                                             |
|------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| PIN 1 Cathode<br>PIN 2 Anode |  |  |

## Marking Code

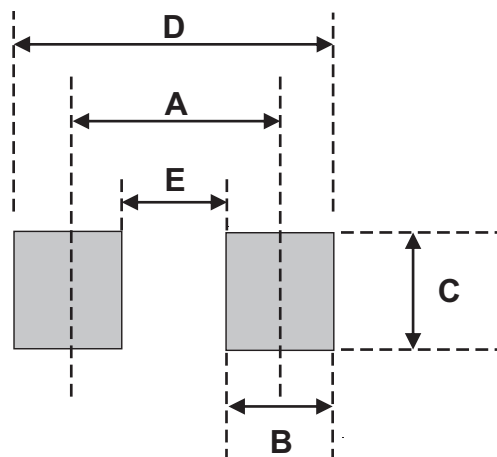
| Part Number             | Marking Code |
|-------------------------|--------------|
| CZRA4728-G ~ CZRA4764-G | XXXX         |



Product type marking code (see page.2~3)

## Suggested PAD Layout

| SIZE | DO-214AC (SMA) |        |
|------|----------------|--------|
|      | (mm)           | (inch) |
| A    | 3.80           | 0.150  |
| B    | 1.60           | 0.063  |
| C    | 2.80           | 0.110  |
| D    | 5.40           | 0.213  |
| E    | 2.20           | 0.087  |



## Standard Packaging

| Case Type         | REEL PACK       |                     |
|-------------------|-----------------|---------------------|
|                   | REEL<br>( pcs ) | Reel Size<br>(inch) |
| DO-214AC<br>(SMA) | 2,000           | 7                   |

# AMEYA360

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