

ACZRA4728-HF Thru. ACZRA4764-HF

Voltage: 3.3 to 100 Volts

Power: 1.0 Watts

RoHS Device

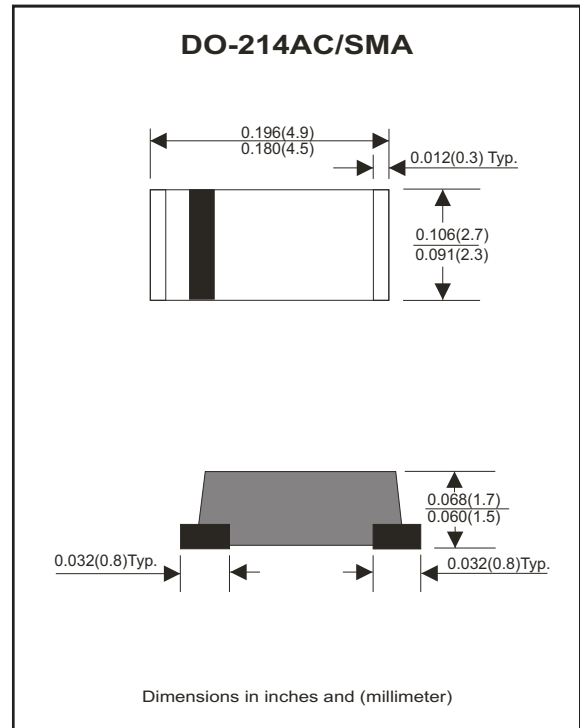
Halogen Free

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.
- Comply with AEC-Q101.

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_A=25°C, unless otherwise noted)

| Parameter | Condition | Symbol | MIN. | TYP. | MAX. | Units |
|-----------------------|------------------------------|------------------|------|------|------|-------|
| Forward voltage | IF = 200 mA | V _F | | | 1.20 | V |
| Power Dissipation | @TL = 75°C | P _D | | | 1000 | mW |
| Thermal resistance | Junction to case (Note 1) | R _{θJC} | | 30 | | °C/W |
| | Junction to ambient (Note 1) | R _{θJA} | | 50 | | °C/W |
| Operating temperature | | T _J | -55 | | +150 | °C |
| Storage temperature | | T _{STG} | -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 | I _{surge} |
| | | Volts | mA | (Ω)Max | (Ω)Max | mA | (uA)Max | Volts | mA |
| ACZRA4728-HF | Z3V3 | 3.3 | 76 | 10 | 400 | 1.0 | 100 | 1.0 | 1380 |
| ACZRA4729-HF | Z3V6 | 3.6 | 69 | 10 | 400 | 1.0 | 100 | 1.0 | 1260 |
| ACZRA4730-HF | Z3V9 | 3.9 | 64 | 9 | 400 | 1.0 | 50 | 1.0 | 1190 |
| ACZRA4731-HF | Z4V3 | 4.3 | 58 | 9 | 400 | 1.0 | 10 | 1.0 | 1070 |
| ACZRA4732-HF | Z4V7 | 4.7 | 53 | 8 | 500 | 1.0 | 10 | 1.0 | 970 |
| ACZRA4733-HF | Z5V1 | 5.1 | 49 | 7 | 550 | 1.0 | 10 | 1.0 | 890 |
| ACZRA4734-HF | Z5V6 | 5.6 | 45 | 5 | 600 | 1.0 | 10 | 2.0 | 810 |
| ACZRA4735-HF | Z6V2 | 6.2 | 41 | 2 | 700 | 1.0 | 10 | 3.0 | 730 |
| ACZRA4736-HF | Z6V8 | 6.8 | 37 | 3.5 | 700 | 1.0 | 10 | 4.0 | 660 |
| ACZRA4737-HF | Z7V5 | 7.5 | 34 | 4 | 700 | 0.5 | 10 | 5.0 | 605 |
| ACZRA4738-HF | Z8V2 | 8.2 | 31 | 4.5 | 700 | 0.5 | 10 | 6.0 | 550 |
| ACZRA4739-HF | Z9V1 | 9.1 | 28 | 5 | 700 | 0.5 | 10 | 7.0 | 500 |
| ACZRA4740-HF | Z10 | 10 | 25 | 7 | 700 | 0.25 | 10 | 7.6 | 454 |
| ACZRA4741-HF | Z11 | 11 | 23 | 8 | 700 | 0.25 | 5 | 8.4 | 414 |
| ACZRA4742-HF | Z12 | 12 | 21 | 9 | 700 | 0.25 | 5 | 9.1 | 380 |
| ACZRA4743-HF | Z13 | 13 | 19 | 10 | 700 | 0.25 | 5 | 9.9 | 344 |
| ACZRA4744-HF | Z15 | 15 | 17 | 14 | 700 | 0.25 | 5 | 11.4 | 304 |
| ACZRA4745-HF | Z16 | 16 | 15.5 | 16 | 700 | 0.25 | 5 | 12.2 | 285 |
| ACZRA4746-HF | Z18 | 18 | 14 | 20 | 750 | 0.25 | 5 | 13.7 | 250 |
| ACZRA4747-HF | Z20 | 20 | 12.5 | 22 | 750 | 0.25 | 5 | 15.2 | 225 |
| ACZRA4748-HF | Z22 | 22 | 11.5 | 23 | 750 | 0.25 | 5 | 16.7 | 205 |
| ACZRA4749-HF | Z24 | 24 | 10.5 | 25 | 750 | 0.25 | 5 | 18.2 | 190 |
| ACZRA4750-HF | Z27 | 27 | 9.5 | 35 | 750 | 0.25 | 5 | 20.6 | 170 |
| ACZRA4751-HF | Z30 | 30 | 8.5 | 40 | 1000 | 0.25 | 5 | 22.8 | 150 |
| ACZRA4752-HF | Z33 | 33 | 7.5 | 45 | 1000 | 0.25 | 5 | 25.1 | 135 |
| ACZRA4753-HF | Z36 | 36 | 7.0 | 50 | 1000 | 0.25 | 5 | 27.4 | 125 |
| ACZRA4754-HF | Z39 | 39 | 6.5 | 60 | 1000 | 0.25 | 5 | 29.7 | 115 |
| ACZRA4755-HF | Z43 | 43 | 6.0 | 70 | 1500 | 0.25 | 5 | 32.7 | 110 |

Note: 5% tolerance of Zener voltage.

Company reserves the right to improve product design , functions and reliability without notice.

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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_{surge} |
| | | Volts | mA | (Ω)Max | (Ω)Max | mA | (μA)Max | Volts | mA |
| ACZRA4756-HF | Z47 | 47 | 5.5 | 80 | 1500 | 0.25 | 5 | 35.8 | 95 |
| ACZRA4757-HF | Z51 | 51 | 5.0 | 95 | 1500 | 0.25 | 5 | 38.8 | 90 |
| ACZRA4758-HF | Z56 | 56 | 4.5 | 110 | 2000 | 0.25 | 5 | 42.6 | 80 |
| ACZRA4759-HF | Z62 | 62 | 4.0 | 125 | 2000 | 0.25 | 5 | 47.1 | 70 |
| ACZRA4760-HF | Z68 | 68 | 3.7 | 150 | 2000 | 0.25 | 5 | 51.7 | 65 |
| ACZRA4761-HF | Z75 | 75 | 3.3 | 175 | 2000 | 0.25 | 5 | 56.0 | 60 |
| ACZRA4762-HF | Z82 | 82 | 3.0 | 200 | 3000 | 0.25 | 5 | 62.2 | 55 |
| ACZRA4763-HF | Z91 | 91 | 2.8 | 250 | 3000 | 0.25 | 5 | 69.2 | 50 |
| ACZRA4764-HF | Z100 | 100 | 2.5 | 350 | 3000 | 0.25 | 5 | 76.0 | 45 |

Note: 5% tolerance of Zener voltage.

RATING AND CHARACTERISTIC CURVES (ACZRA4728-HF Thru. ACZRA4764-HF)

Fig.1 - Max. Continuous Power Derating

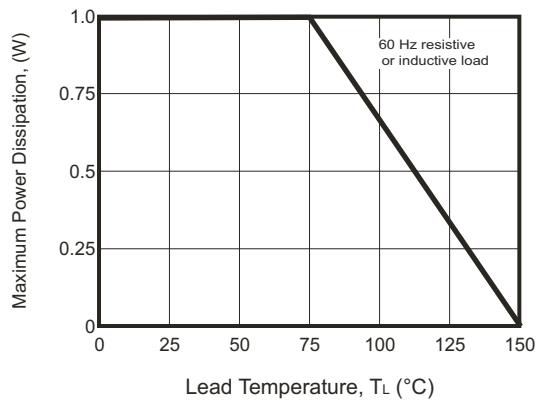
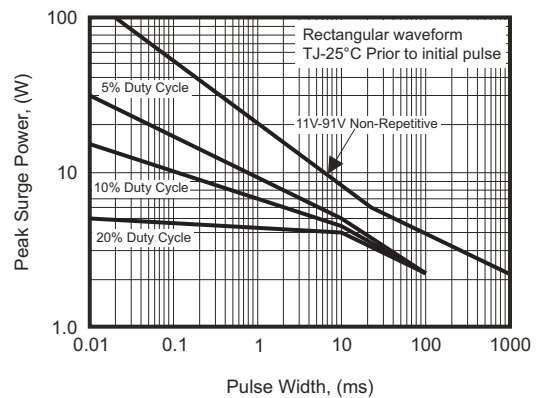


Fig.2 - Maximum surge power



RATING AND CHARACTERISTIC CURVES (ACZRA4728-HF Thru. ACZRA4764-HF)

Fig.3A - Range for Units to 12 Volts

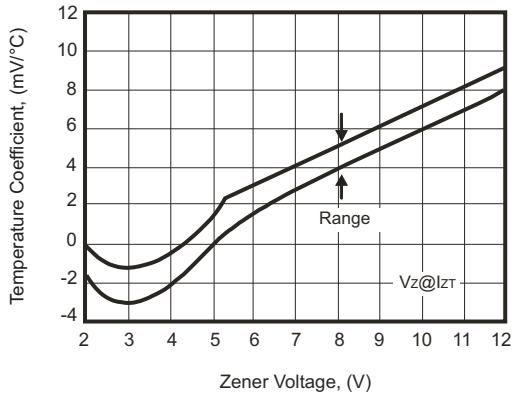


Fig.3B - Range for Units 12 to 100 Volts

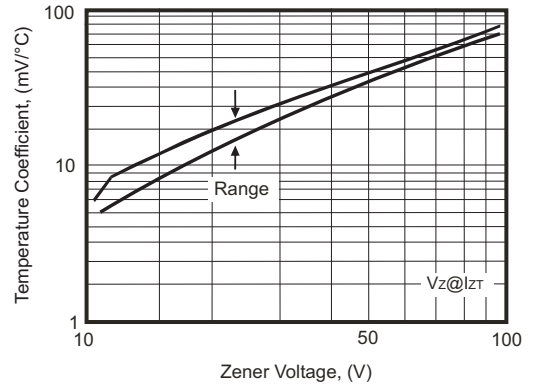


Fig.4 - Temperature Coefficients (-55°C to +150°C temperature change ; 90% of the units are in the ranges indicated.)

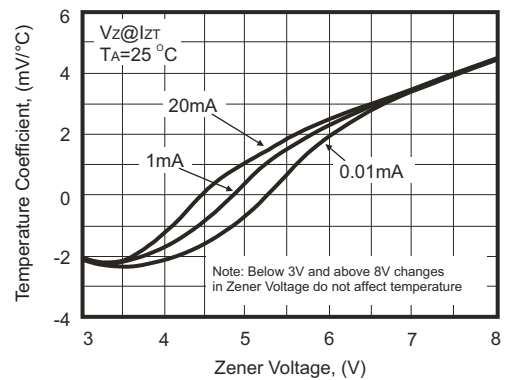
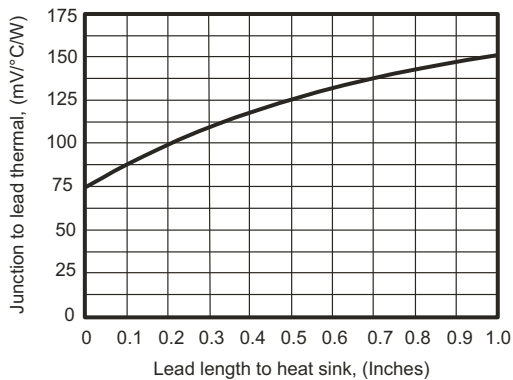


Fig.5 - Typical Thermal Resistance Versus Lead

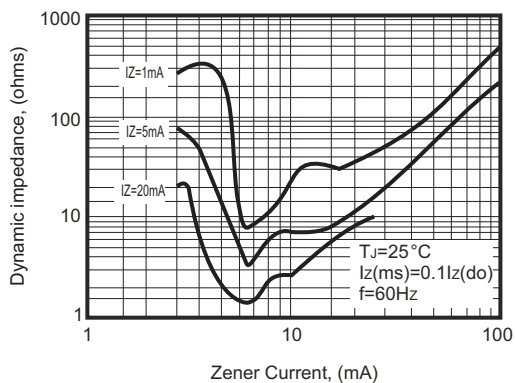
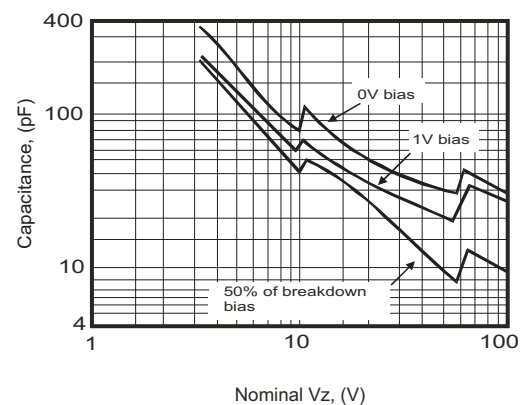


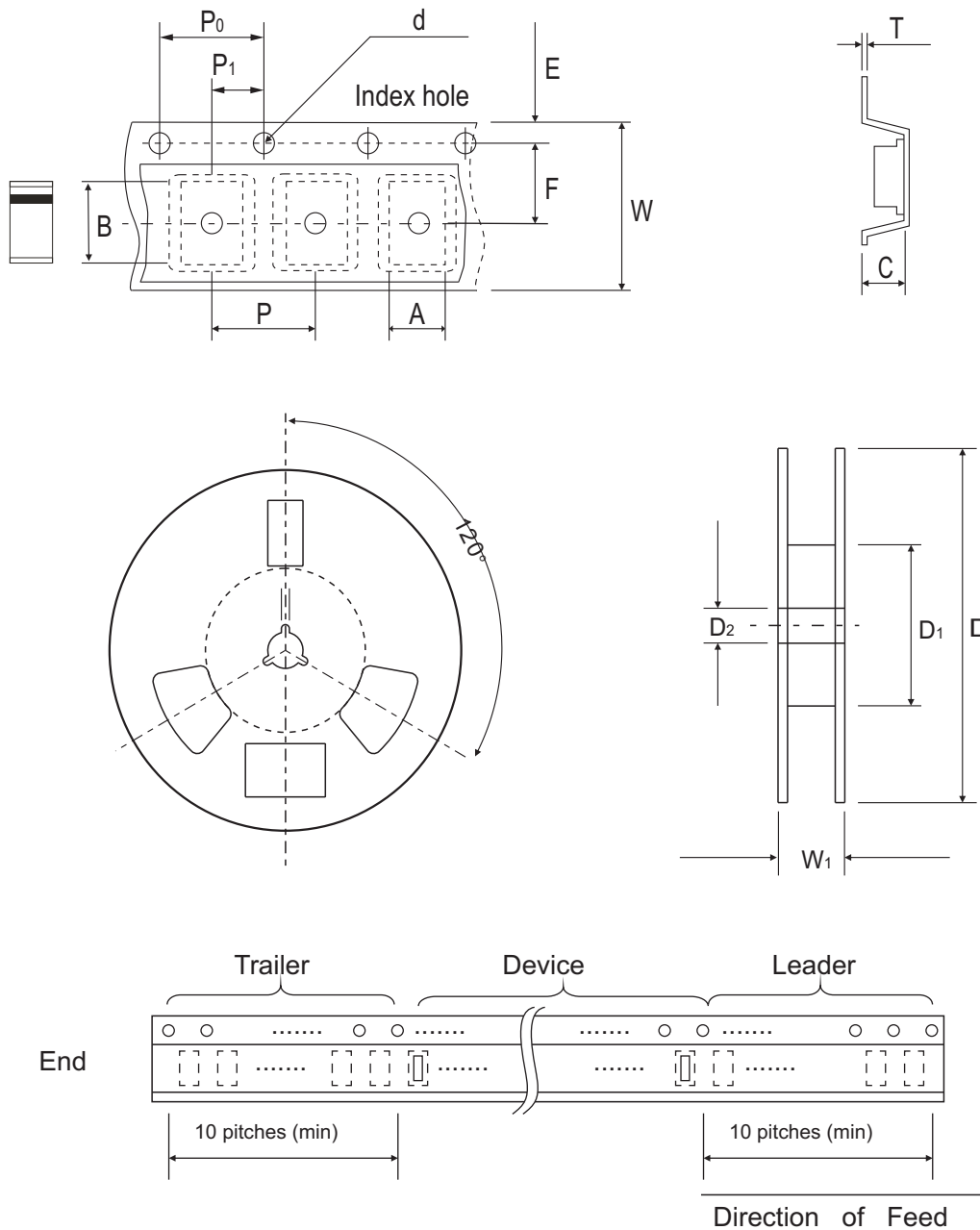
Fig.6 - Effect of Zener Current



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Reel Taping Specification



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

| DO-214AC (SMA) | SYMBOL | E | F | P | P0 | P1 | W | W1 |
|-------------------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | (mm) | 1.75 ± 0.10 | 5.50 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.10 | 12.00 ± 0.30 | 18.00 ± 1.00 |
| | (inch) | 0.069 ± 0.004 | 0.216 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.472 ± 0.012 | 0.709 ± 0.039 |

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