

SMD Zener Diode



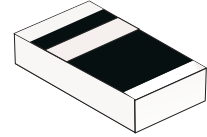
SMD Diodes Specialist

CZRSC55C2V0-G Thru CZRSC55C36-G

Voltage: 2.0 to 36 Volts

Power: 0.5 Watts

RoHS Device

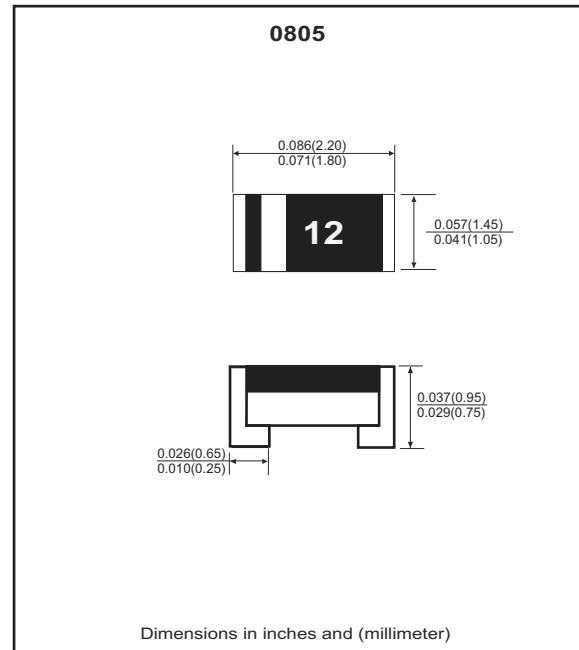


Features

- This diode is also available in other case styles including the 1206 case with the type designation.
- Silicon Planar Power Zener Diode.

Mechanical data

- Case: 0805
- Weight: approx. 6mg
- Marking: Cathode band.



Maximum Rating and Thermal Characteristics (Tamb = 25°C)

| Parameter | Symbol | Value | Unit |
|--|------------------|-------------|------|
| Power Dissipation | P _{tot} | 500 | mW |
| Junction Temperature | T _J | 175 | °C |
| Storage Temperature Range | T _{STG} | -65 to +175 | °C |
| Thermal Resistance Junction to Ambient Air | R _{θJA} | 300 | °C/W |

Electrical Characteristics

| Parameter | Symbol | Max | Unit |
|---------------------------------------|----------------|-----|------|
| Forward voltage I _F =200mA | V _F | 1.5 | V |

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Electrical Characteristics(Ta = 25°C)

| Part Number | Nominal Zener Voltage | | Maximum Zener Impedance | | | | Maximum Reverse Leakage Current | | Maximum DC Zener Current | Marking Code |
|---------------|-----------------------|-------|-------------------------|------|-----------|------|---------------------------------|------|--------------------------|--------------|
| | VZ @ IZT | | ZZT @ IZT | | ZZK @ IZK | | IR @ VR | | IZM | |
| | Min V | Max V | (Ω) | (mA) | (Ω) | (mA) | (uA) | (V) | (mA) | |
| CZRSC55C2V0-G | 1.90 | 2.10 | 85 | 5.0 | 600 | 1.0 | 100 | 4.0 | 241 | 2V0 |
| CZRSC55C2V2-G | 2.09 | 2.31 | 85 | 5.0 | 600 | 1.0 | 75 | 5.2 | 440 | 2V2 |
| CZRSC55C2V4-G | 2.28 | 2.52 | 85 | 5.0 | 600 | 1.0 | 50 | 6.0 | 400 | 2V4 |
| CZRSC55C2V7-G | 2.57 | 2.84 | 85 | 5.0 | 600 | 1.0 | 10 | 6.5 | 364 | 2V7 |
| CZRSC55C3V0-G | 2.85 | 3.15 | 85 | 5.0 | 600 | 1.0 | 4 | 7.0 | 328 | 3V0 |
| CZRSC55C3V3-G | 3.14 | 3.47 | 85 | 5.0 | 600 | 1.0 | 2 | 8.0 | 300 | 3V3 |
| CZRSC55C3V6-G | 3.42 | 3.78 | 85 | 5.0 | 600 | 1.0 | 2 | 8.4 | 272 | 3V6 |
| CZRSC55C3V9-G | 3.71 | 4.10 | 85 | 5.0 | 600 | 1.0 | 2 | 9.1 | 250 | 3V9 |
| CZRSC55C4V3-G | 4.09 | 4.52 | 80 | 5.0 | 600 | 1.0 | 1 | 9.9 | 230 | 4V3 |
| CZRSC55C4V7-G | 4.47 | 4.94 | 70 | 5.0 | 600 | 1.0 | 0.5 | 11.4 | 200 | 4V7 |
| CZRSC55C5V1-G | 4.85 | 5.36 | 50 | 5.0 | 550 | 1.0 | 0.1 | 12.2 | 186 | 5V1 |
| CZRSC55C5V6-G | 5.32 | 5.88 | 30 | 5.0 | 450 | 1.0 | 0.1 | 13.7 | 166 | 5V6 |
| CZRSC55C6V2-G | 5.89 | 6.51 | 10 | 5.0 | 200 | 1.0 | 0.1 | 15.2 | 150 | 6V2 |
| CZRSC55C6V8-G | 6.46 | 7.14 | 8 | 5.0 | 150 | 1.0 | 0.1 | 16.7 | 136 | 6V8 |
| CZRSC55C7V5-G | 7.13 | 7.88 | 7 | 5.0 | 50 | 1.0 | 0.1 | 18.2 | 124 | 7V5 |
| CZRSC55C8V2-G | 7.79 | 8.61 | 7 | 5.0 | 50 | 1.0 | 0.1 | 20.6 | 110 | 8V2 |
| CZRSC55C9V1-G | 8.65 | 9.56 | 10 | 5.0 | 50 | 1.0 | 0.1 | 22.8 | 100 | 9V1 |
| CZRSC55C10-G | 9.50 | 10.50 | 15 | 5.0 | 70 | 1.0 | 0.1 | 25.1 | 90 | 10 |
| CZRSC55C11-G | 10.45 | 11.55 | 20 | 5.0 | 70 | 1.0 | 0.1 | 27.4 | 82 | 11 |
| CZRSC55C12-G | 11.40 | 12.60 | 20 | 5.0 | 90 | 1.0 | 0.1 | 29.7 | 76 | 12 |
| CZRSC55C13-G | 12.35 | 13.65 | 26 | 5.0 | 110 | 1.0 | 0.1 | 32.7 | 68 | 13 |
| CZRSC55C15-G | 14.25 | 15.75 | 30 | 5.0 | 110 | 1.0 | 0.1 | 35.8 | 62 | 15 |
| CZRSC55C16-G | 15.20 | 16.80 | 40 | 5.0 | 170 | 1.0 | 0.1 | 38.8 | 58 | 16 |
| CZRSC55C18-G | 17.10 | 18.90 | 50 | 5.0 | 170 | 1.0 | 0.1 | 42.6 | 52 | 18 |
| CZRSC55C20-G | 19.00 | 21.00 | 55 | 5.0 | 220 | 1.0 | 0.1 | 47.1 | 48 | 20 |
| CZRSC55C22-G | 20.90 | 23.10 | 55 | 5.0 | 220 | 1.0 | 0.1 | 51.7 | 44 | 22 |
| CZRSC55C24-G | 22.80 | 25.20 | 80 | 5.0 | 220 | 1.0 | 0.1 | 56.0 | 40 | 24 |
| CZRSC55C27-G | 25.65 | 28.35 | 80 | 5.0 | 220 | 1.0 | 0.1 | 62.2 | 36 | 27 |
| CZRSC55C30-G | 28.50 | 31.50 | 80 | 5.0 | 220 | 1.0 | 0.1 | 69.2 | 32 | 30 |
| CZRSC55C33-G | 31.35 | 34.65 | 80 | 5.0 | 220 | 1.0 | 0.1 | 76.0 | 30 | 33 |
| CZRSC55C36-G | 34.20 | 37.80 | 80 | 5.0 | 220 | 1.0 | 0.1 | 83.6 | 13 | 36 |

RATING AND CHARACTERISTIC CURVES (CZRSC552V0-G Thru CZRSC55C36-G)

Fig.1 Typical thermal resistance v.s. lead length

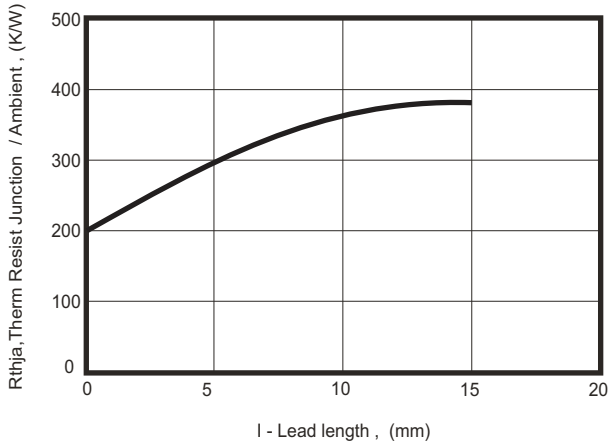


Fig.2 Total Power Dissipation vs. Ambient Temperature

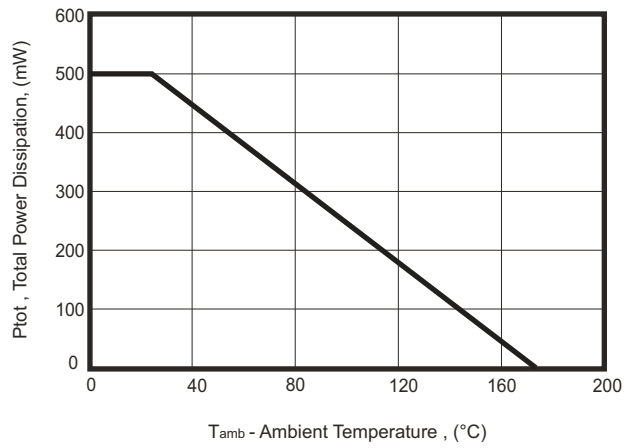


Fig.3 Typical Change of Working Voltage Under Operating Conditions at Tamb=25°C

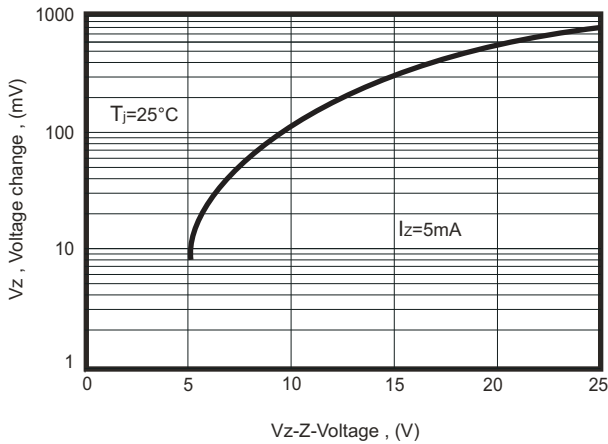


Fig.4 Maximum surge power

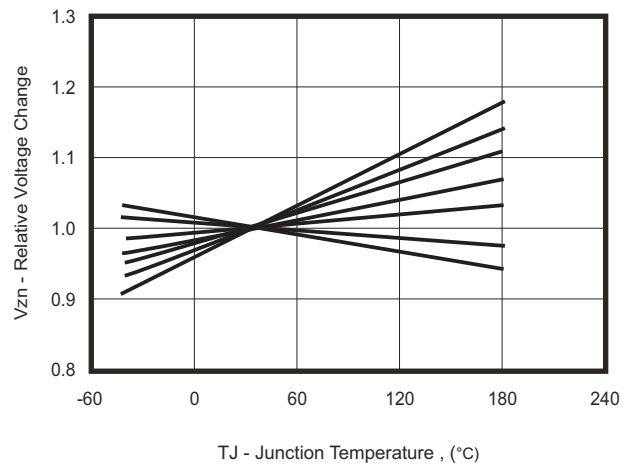


Fig.5- Temperature Coefficient of Vz vs Z-Voltage

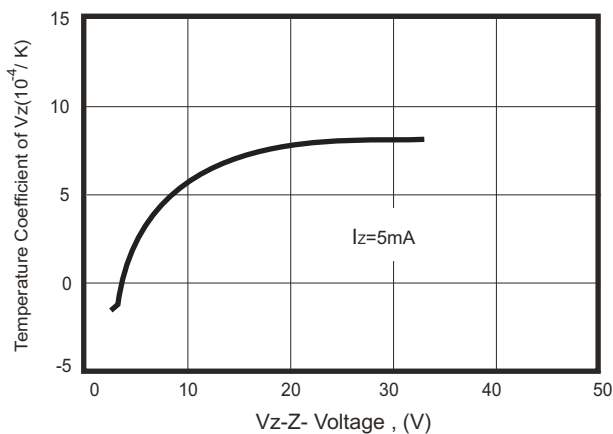
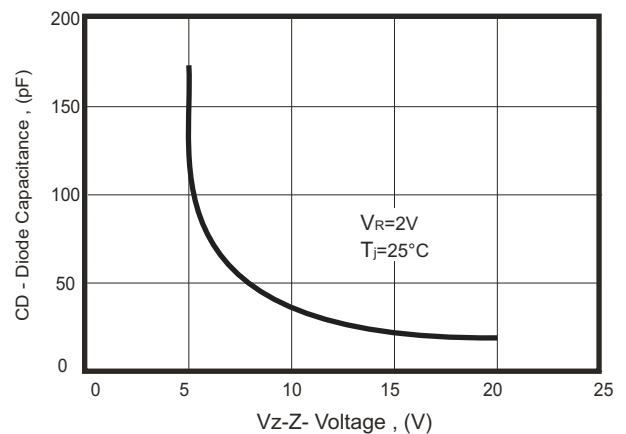


Fig.6-Diode Capacitance vs. Z-Voltage



RATING AND CHARACTERISTIC CURVES (CZRSC552V0-G Thru CZRSC55C36-G)

Fig.7- Forward Current Forward Voltage

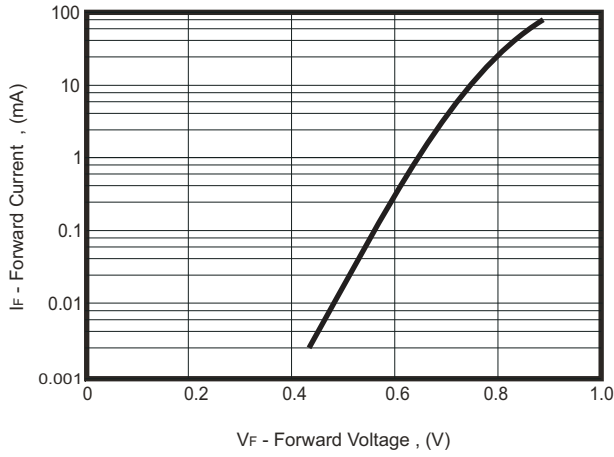


Fig.4- Z-Current vs. Z-Voltage

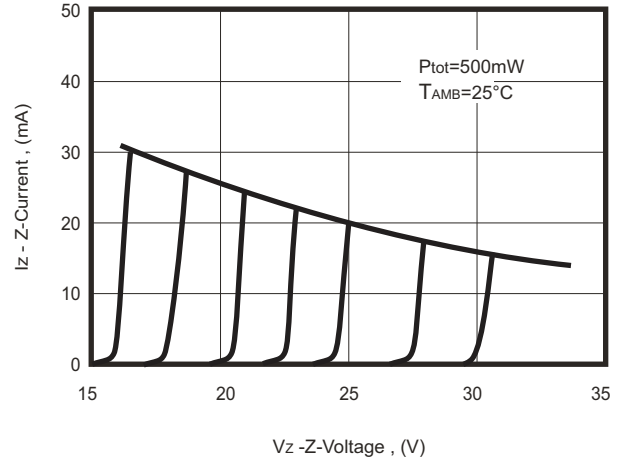


Fig.8- Z-Current vs. Z-Voltage

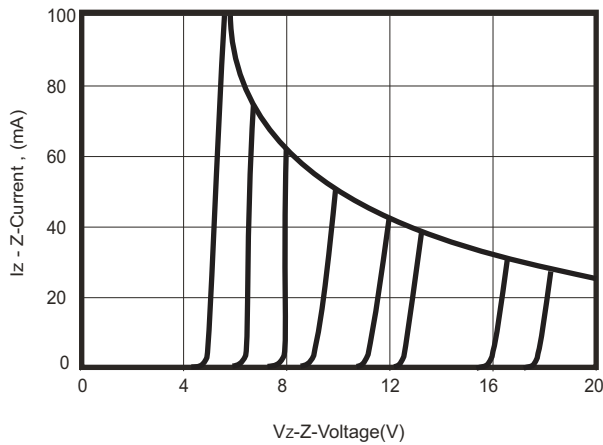


Fig.10- Differential Z-Resistance vs. Z-Voltage

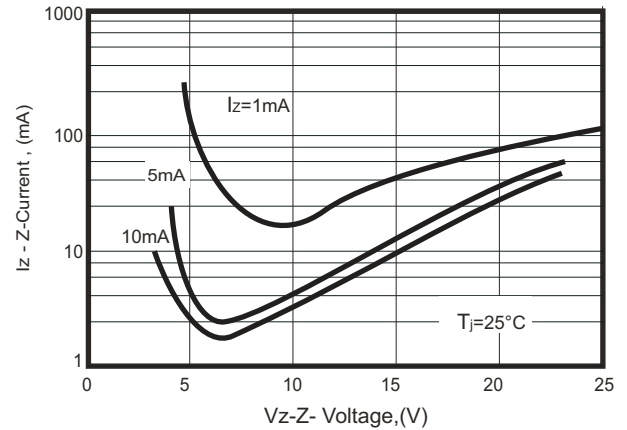
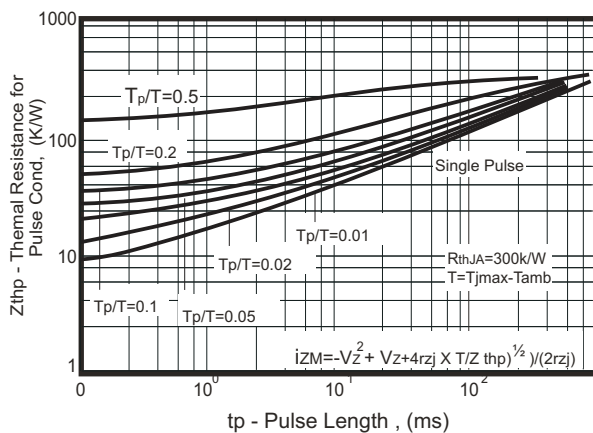
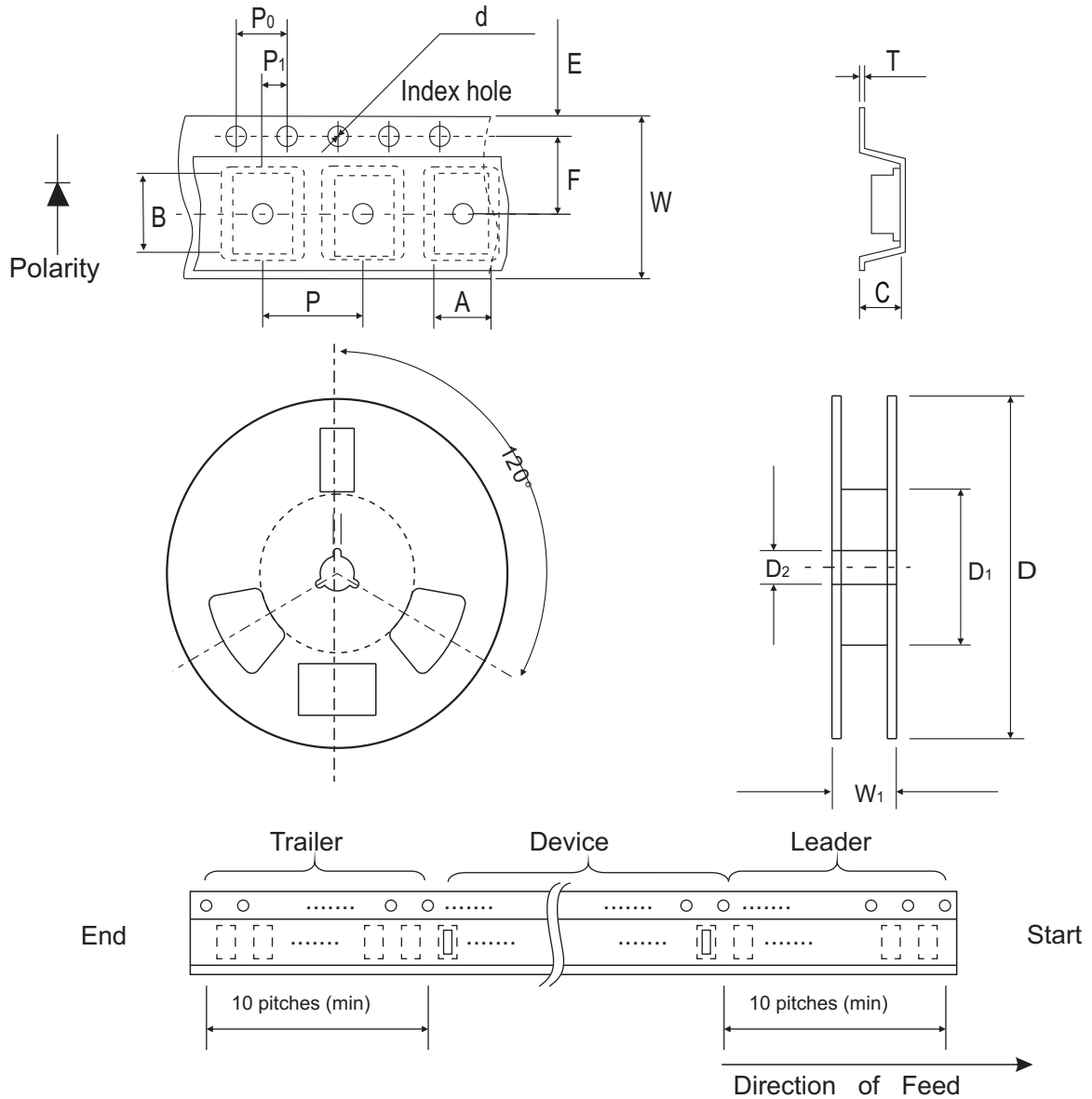


Fig.10- Thermal Response



Reel Taping Specification

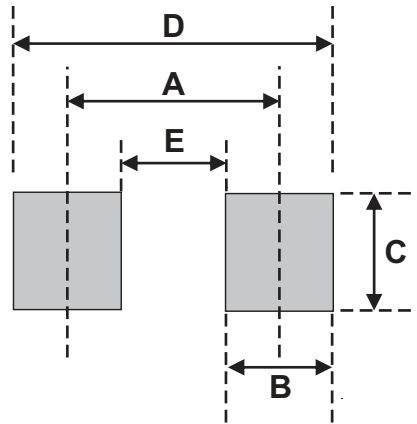


| | | | | | | | | |
|------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 0805 | SYMBOL | A | B | C | d | D | D1 | D2 |
| | (mm) | 1.65 ± 0.20 | 2.40 ± 0.20 | 0.95 ± 0.05 | 1.50 ± 0.10 | 178.0 ± 1.00 | 60.0 ± 1.00 | 13.0 ± 0.30 |
| | (inch) | 0.065 ± 0.008 | 0.094 ± 0.008 | 0.037 ± 0.002 | 0.059 ± 0.004 | 7.007 ± 0.040 | 2.362 ± 0.040 | 0.512 ± 0.012 |

| | | | | | | | | |
|------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 0805 | SYMBOL | E | F | P | P0 | P1 | W | W1 |
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.05 | 8.00 ± 0.20 | 9.50 ± 0.30 |
| | (inch) | 0.689 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.315 ± 0.008 | 0.374 ± 0.012 |

Suggested PAD Layout

| SIZE | 0805 | |
|------|------|--------|
| | (mm) | (inch) |
| A | 2.20 | 0.087 |
| B | 1.10 | 0.043 |
| C | 1.30 | 0.051 |
| D | 3.30 | 0.130 |
| E | 1.10 | 0.043 |



Standard Package

| Case Type | Qty per Reel | Reel Size |
|-----------|--------------|-----------|
| | (Pcs) | (inch) |
| 0805 | 5000 | 7 |