



## TBZ363C5V5 - TBZ363C20V8

TRIPLE BI-DIRECTIONAL SURFACE MOUNT ZENER DIODE ARRAY

### Features

- Nominal Zener Voltages: 5.5V, 6.4V, 7.0V, 20.8V
- Ultra-Small Surface Mount Package
- Ideal For Transient Suppression
- Lead Free/RoHS Compliant (Note 4)
- "Green" Device (Note 5 and 6)

## **Mechanical Data**

- Case: SOT-363
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.0061 grams (approximate)



Top View

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|---|---|---|----------|---|--|
| 3 | < | 4 | <u> </u> | 4 |  |
|   |   |   |          |   |  |

**Device Schematic** 

## **Thermal Characteristics**

| Characteristic                              |          | Symbol                           | Value       | Unit |  |
|---|----------|----------------------------------|-------------|------|--|
| Power Dissipation                           | (Note1)  | PD                               | 200         | mW   |  |
| Thermal Resistance, Junction to Ambient Air | (Note 1) | $R_{	ext{	heta}JA}$              | 625         | °C/W |  |
| Operating and Storage Temperature Range     |          | T <sub>J,</sub> T <sub>STG</sub> | -65 to +150 | °C   |  |

#### Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

| Туре        | Type Marking |          | Zener Voltage<br>Range (Note 2) |                                   |    | Maximum Zener Impedance<br>(Note 3) |     |                  |                                 | n Reverse<br>(Note 2) | Temperature<br>Coefficient |      |
|-------------|--------------|----------|---------------------------------|-----------------------------------|----|-------------------------------------|-----|------------------|---------------------------------|-----------------------|----------------------------|------|
| Number      | Code         | Vz @ Izt |                                 | Z <sub>ZT</sub> @ I <sub>ZT</sub> |    | Z <sub>ZK</sub> @ I <sub>ZK</sub>   |     | I <sub>R</sub> @ | I <sub>R</sub> @ V <sub>R</sub> |                       | TC (mV/°C)                 |      |
|             |              | Nom (V)  | Min (V)                         | Max (V)                           | Ω  | mA                                  | Ω   | mA               | μΑ                              | v                     | Min                        | Max  |
| TBZ363C5V5  | KL1          | 5.5      | 5.22                            | 5.78                              | 80 | 5.0                                 | 500 | 1.0              | 1.0                             | 2.0                   | -5.5                       | -2.2 |
| TBZ363C6V4  | KL3          | 6.4      | 6.08                            | 6.72                              | 50 | 5.0                                 | 400 | 1.0              | 2.0                             | 3.0                   | -4.0                       | 0.5  |
| TBZ363C7V0  | KL5          | 7.0      | 6.65                            | 7.35                              | 18 | 5.0                                 | 200 | 1.0              | 2.0                             | 4.0                   | -1.6                       | 1.7  |
| TBZ363C20V8 | KV7          | 20.8     | 19.76                           | 21.84                             | 58 | 5.0                                 | 225 | 1.0              | 0.1                             | 14                    | 12.4                       | 16.0 |

Notes: 1. Mounted on FR4 PC Board with recommended pad layout which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.

2. V<sub>Z</sub> measured @ I<sub>ZT</sub> using a short duration pulse. Standard voltage tolerance is 5%.

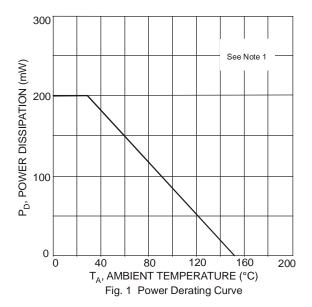
3. f = 1KHz.

4. No purposefully added lead.

5. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php.

 Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.



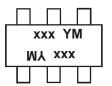


# Ordering Information (Note 7)

| Device          | Packaging | Shipping         |
|-----------------|-----------|------------------|
| TBZ363C5V5-7-F  | SOT-363   | 3000/Tape & Reel |
| TBZ363C6V4-7-F  | SOT-363   | 3000/Tape & Reel |
| TBZ363C7V0-7-F  | SOT-363   | 3000/Tape & Reel |
| TBZ363C20V8-7-F | SOT-363   | 3000/Tape & Reel |

Notes: 7. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## **Marking Information**



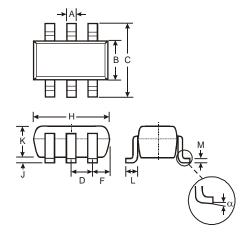
xxx = Product Type Marking Code (See Electrical Characteristics Table) YM = Date Code Marking Y = Year (ex: N = 2002) M = Month (ex: 9 = September)

Date Code Key

| Year  | 2002 | 2003 | 2004 | 2005 | 200 | 6 20 | 07 | 2008 | 3 2 | 2009 | 2010 | 2111 | 2012 |
|-------|------|------|------|------|-----|------|----|------|-----|------|------|------|------|
| Code  | Ν    | Р    | R    | S    | Т   |      | J  | V    |     | W    | Х    | Y    | Z    |
| Month | Jan  | Feb  | Mar  | Apr  | Мау | Jun  | Ju | ul 🛛 | Aug | Sep  | Oct  | Nov  | Dec  |
| Code  | 1    | 2    | 3    | 4    | 5   | 6    | 7  | 7    | 8   | 9    | 0    | Ν    | D    |

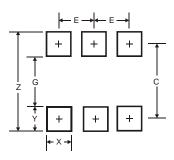


## **Package Outline Dimensions**



| SOT-363 |              |       |  |  |  |  |
|---------|--------------|-------|--|--|--|--|
| Dim     | Min          | Max   |  |  |  |  |
| Α       | 0.10         | 0.30  |  |  |  |  |
| В       | 1.15         | 1.35  |  |  |  |  |
| С       | 2.00         | 2.20  |  |  |  |  |
| D       | 0.65 Nominal |       |  |  |  |  |
| F       | 0.40         | 0.45  |  |  |  |  |
| Н       | 1.80         | 2.20  |  |  |  |  |
| J       | 0            | 0.10  |  |  |  |  |
| Κ       | 0.90         | 1.00  |  |  |  |  |
| L       | 0.25         | 0.40  |  |  |  |  |
| М       | 0.10         | 0.22  |  |  |  |  |
| α       | 0°           | 8°    |  |  |  |  |
| All Di  | mensions     | in mm |  |  |  |  |

## Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 2.5           |
| G          | 1.3           |
| Х          | 0.42          |
| Y          | 0.6           |
| С          | 1.9           |
| E          | 0.65          |

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