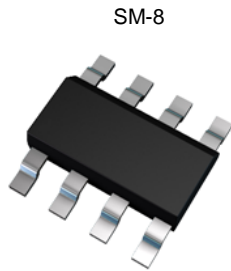


**Features**

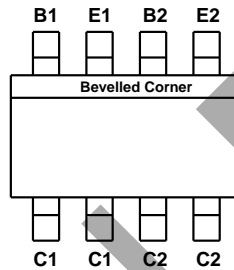
- $BV_{CEO} > -140V$
- $I_C = -0.5A$  High Continuous Current
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **An automotive-compliant part is available under separate datasheet ([ZDT795AQ](#))**

**Mechanical Data**

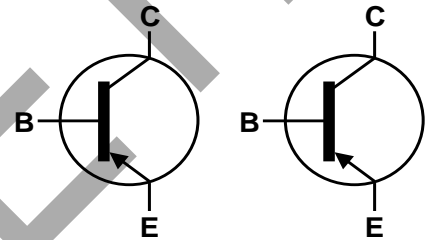
- Package: SM-8 (8 LEAD SOT223)
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.117 grams (Approximate)



Top View



Top View  
Pin Out



Equivalent Circuit

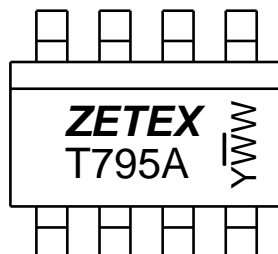
**Ordering Information** (Note 4)

| Part Number | Package | Marking | Reel Size (inches) | Tape Width (mm) | Packing |         |
|-------------|---------|---------|--------------------|-----------------|---------|---------|
|             |         |         |                    |                 | Qty.    | Carrier |
| ZDT795ATA   | SM-8    | T795A   | 7                  | 12              | 1,000   | Reel    |

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

**Marking Information**

SM-8



ZETEX = Product Brand Logo  
 T795A = Product Type Marking Code  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 3 = 2023)  
 WW = Week Code (01 to 53)

OBSOLETE - PART DISCONTINUED

**Absolute Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

| Characteristic               | Symbol    | Value | Unit |
|------------------------------|-----------|-------|------|
| Collector-Base Voltage       | $V_{CB0}$ | -140  | V    |
| Collector-Emitter Voltage    | $V_{CEO}$ | -140  | V    |
| Emitter-Base Voltage         | $V_{EBO}$ | -7    | V    |
| Continuous Collector Current | $I_C$     | -0.5  | A    |
| Peak Pulse Current (Note 5)  | $I_{CM}$  | -1    | A    |

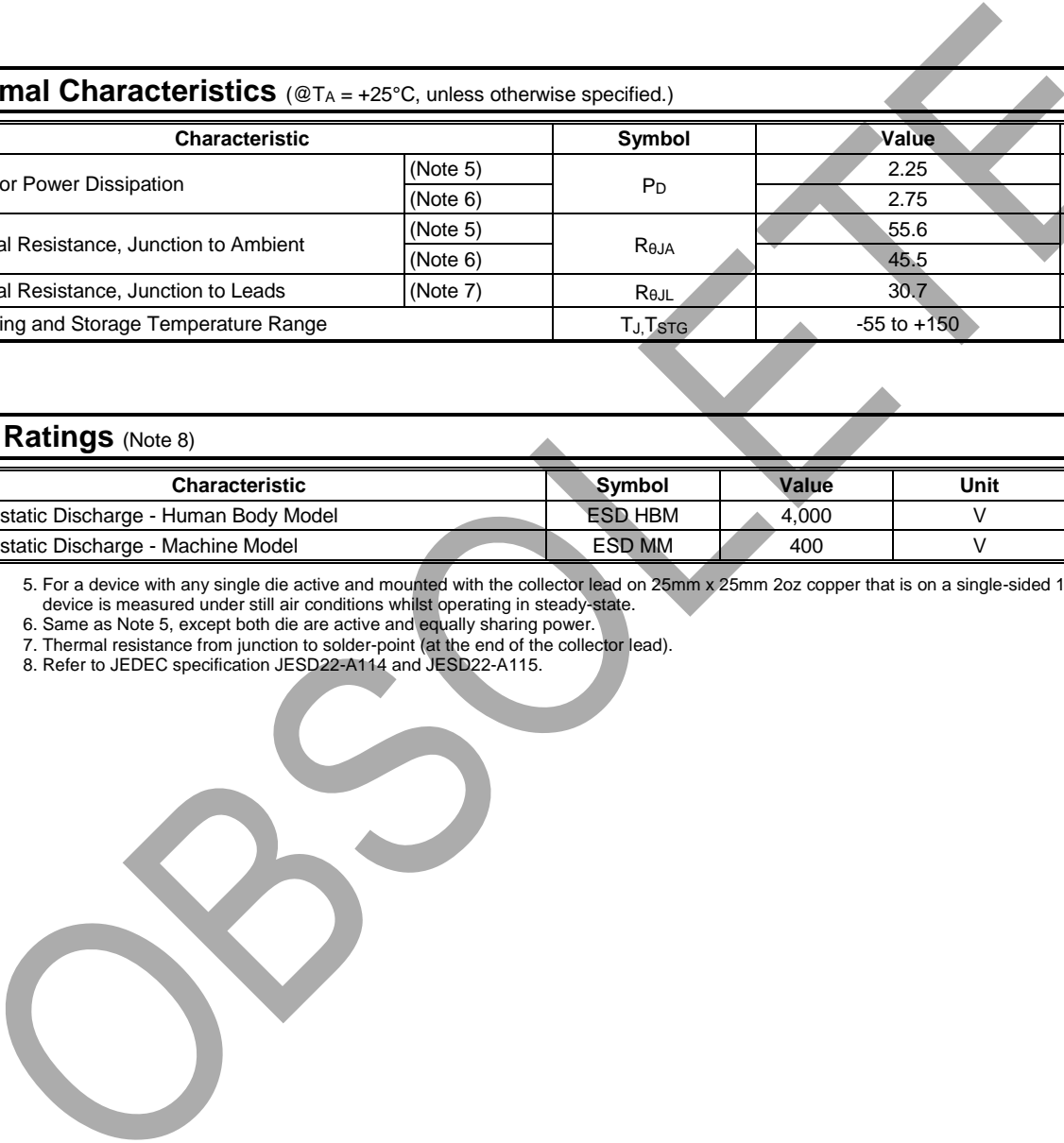
**Thermal Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

| Characteristic                          | Symbol          | Value            | Unit               |
|---|-----------------|------------------|--------------------|
| Collector Power Dissipation             | $P_D$           | (Note 5)<br>2.25 | W                  |
|   |                 | (Note 6)<br>2.75 |                    |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | (Note 5)<br>55.6 | $^\circ\text{C/W}$ |
|   |                 | (Note 6)<br>45.5 |                    |
| Thermal Resistance, Junction to Leads   | $R_{\theta JL}$ | 30.7             | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range | $T_J, T_{STG}$  | -55 to +150      | $^\circ\text{C}$   |

**ESD Ratings** (Note 8)

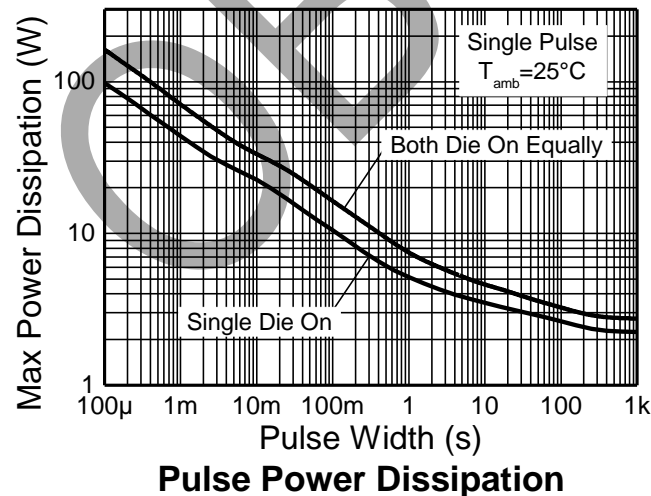
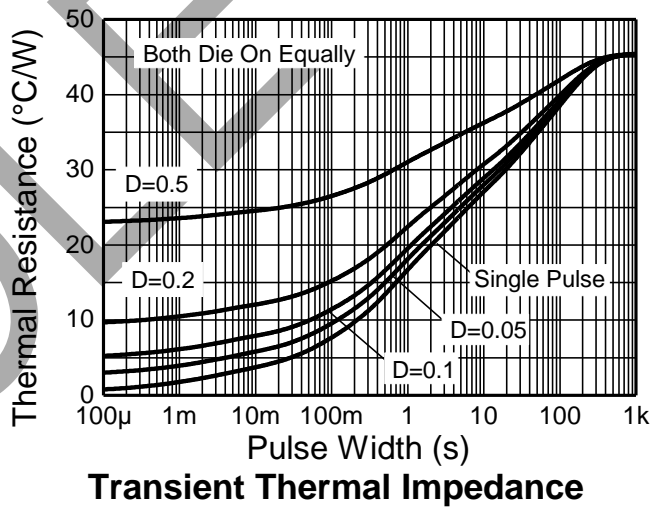
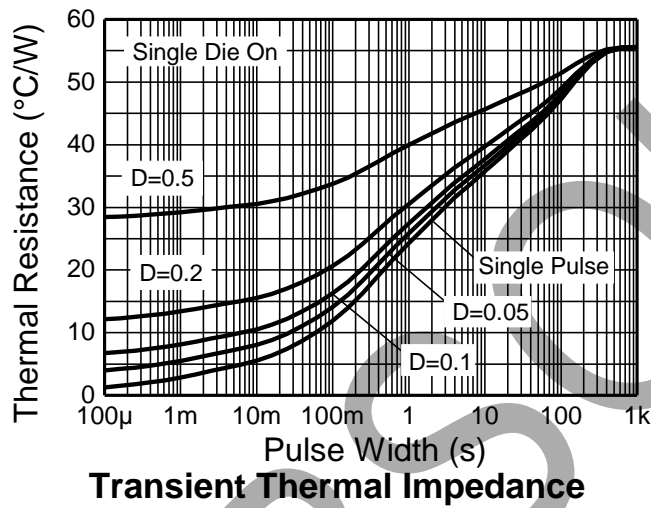
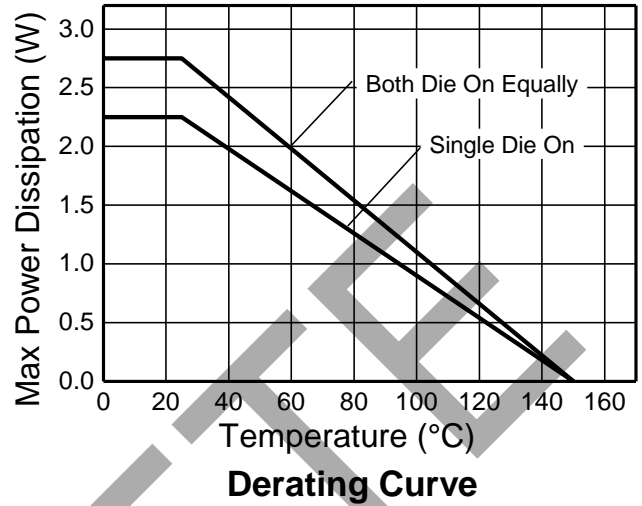
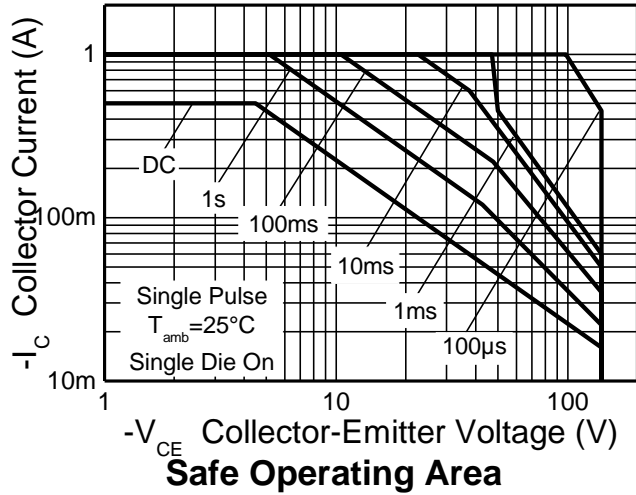
| Characteristic                             | Symbol  | Value | Unit | JEDEC Class |
|--|---------|-------|------|-------------|
| Electrostatic Discharge - Human Body Model | ESD HBM | 4,000 | V    | 3A          |
| Electrostatic Discharge - Machine Model    | ESD MM  | 400   | V    | C           |

- Notes:
5. For a device with any single die active and mounted with the collector lead on 25mm x 25mm 2oz copper that is on a single-sided 1.6mm FR4 PCB; device is measured under still air conditions whilst operating in steady-state.
  6. Same as Note 5, except both die are active and equally sharing power.
  7. Thermal resistance from junction to solder-point (at the end of the collector lead).
  8. Refer to JEDEC specification JESD22-A114 and JESD22-A115.



OBSOLETE - PART DISCONTINUED

**Thermal Characteristics and Derating Information**



OBSOLETE - PART DISCONTINUED

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

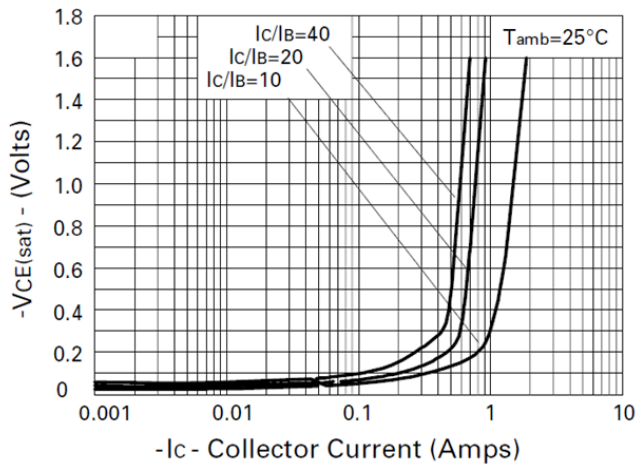
| Characteristic                                | Symbol               | Min  | Typ   | Max   | Unit | Test Condition  |
|---|----------------------|------|-------|-------|------|---|
| Collector-Base Breakdown Voltage              | BV <sub>CBO</sub>    | -140 | —     | —     | V    | I <sub>C</sub> = -100μA                                     |
| Collector-Emitter Breakdown Voltage (Note 9)  | BV <sub>CEO</sub>    | -140 | —     | —     | V    | I <sub>C</sub> = -10mA                                      |
| Emitter-Base Breakdown Voltage                | BV <sub>EBO</sub>    | -7   | —     | —     | V    | I <sub>E</sub> = -100μA                                     |
| Collector Cutoff Current                      | I <sub>CBO</sub>     | —    | —     | -0.1  | μA   | V <sub>CB</sub> = -100V                                     |
| Emitter Cutoff Current                        | I <sub>EBO</sub>     | —    | —     | -0.1  | μA   | V <sub>EB</sub> = -5.6V                                     |
| DC Current Transfer Static Ratio (Note 9)     | h <sub>FE</sub>      | 300  | —     | 800   | —    | I <sub>C</sub> = -10mA, V <sub>CE</sub> = -2V               |
|   |                      | 250  | —     | —     |      | I <sub>C</sub> = -200mA, V <sub>CE</sub> = -2V              |
|   |                      | 100  | —     | —     |      | I <sub>C</sub> = -300mA, V <sub>CE</sub> = -2V              |
| Collector-Emitter Saturation Voltage (Note 9) | V <sub>CE(sat)</sub> | —    | —     | -0.3  | V    | I <sub>C</sub> = -100mA, I <sub>B</sub> = -1mA              |
|   |                      | —    | —     | -0.3  |      | I <sub>C</sub> = -200mA, I <sub>B</sub> = -5mA              |
|   |                      | —    | —     | -0.25 |      | I <sub>C</sub> = -500mA, I <sub>B</sub> = -50mA             |
| Base-Emitter Saturation Voltage (Note 9)      | V <sub>BE(sat)</sub> | —    | —     | -0.95 | V    | I <sub>C</sub> = -500mA, I <sub>B</sub> = -50mA             |
| Base-Emitter Turn-on Voltage (Note 9)         | V <sub>BE(on)</sub>  | —    | -0.75 | —     | V    | I <sub>C</sub> = -500mA, V <sub>CE</sub> = -2V              |
| Transitional Frequency                        | f <sub>r</sub>       | 100  | —     | —     | MHz  | I <sub>C</sub> = -50mA, V <sub>CE</sub> = -5V,<br>f = 50MHz |
| Output Capacitance                            | C <sub>obo</sub>     | —    | 15    | —     | pF   | V <sub>EB</sub> = -10V, f = 1MHz,                           |
| Switching Time                                | t <sub>on</sub>      | —    | 100   | —     | ns   | V <sub>CC</sub> = -50V, I <sub>C</sub> = -100mA,            |
|   | t <sub>off</sub>     | —    | 1900  | —     | ns   | I <sub>B1</sub> = -I <sub>B2</sub> = -10mA                  |

Note: 9. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

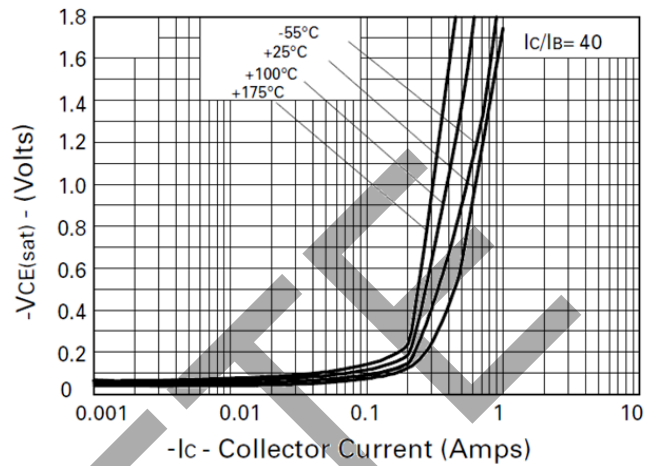
OBSOLETE

OBSOLETE - PART DISCONTINUED

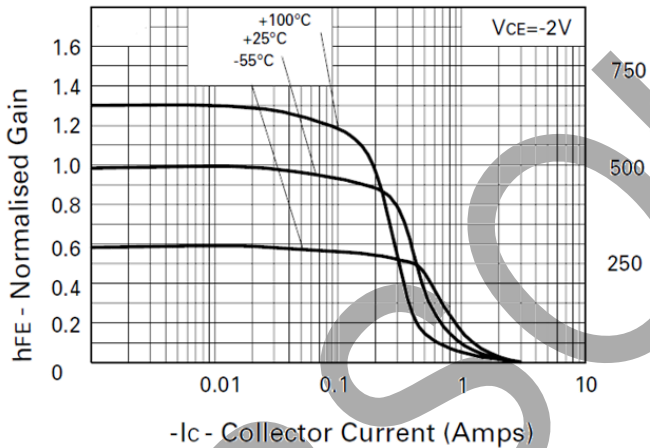
**Typical Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)



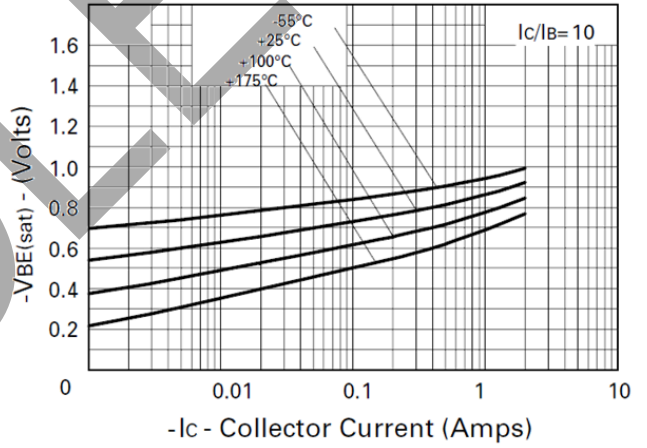
**$V_{CE(sat)}$  v  $I_C$**



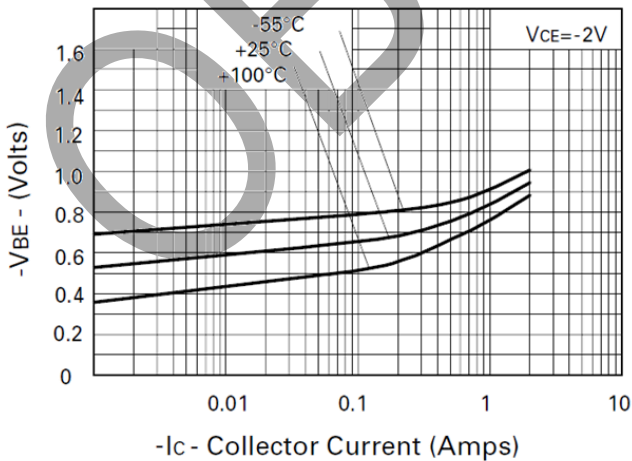
**$V_{CE(sat)}$  v  $I_C$**



**$h_{FE}$  v  $I_C$**



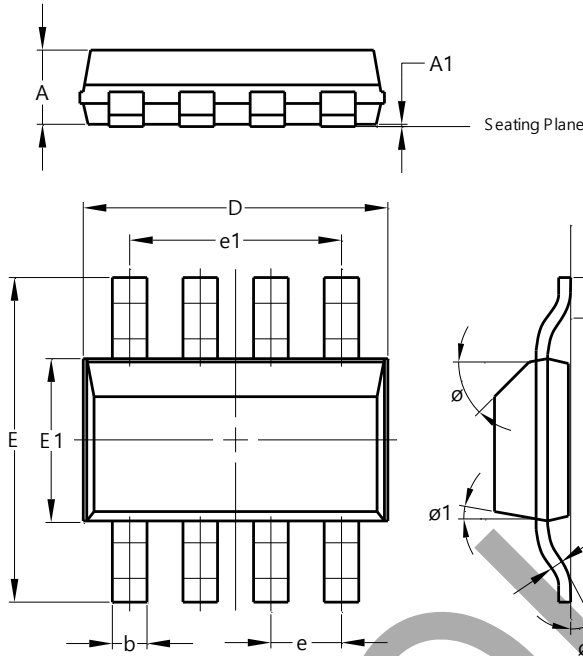
**$V_{BE(sat)}$  v  $I_C$**



**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**SM-8**



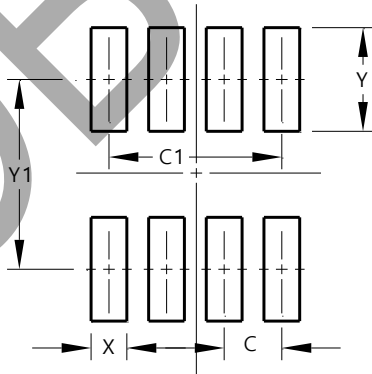
| SM-8                 |          |      |      |
|----------------------|----------|------|------|
| Dim                  | Min      | Max  | Typ  |
| A                    | --       | 1.70 | 1.60 |
| A1                   | 0.02     | 0.10 | 0.04 |
| b                    | 0.70     | 0.90 | 0.80 |
| c                    | 0.24     | 0.32 | 0.28 |
| D                    | 6.30     | 6.70 | 6.60 |
| e                    | 1.53 REF |      |      |
| e1                   | 4.59 REF |      |      |
| E                    | 6.70     | 7.30 | 7.00 |
| E1                   | 3.30     | 3.70 | 3.50 |
| L                    | 0.75     | 1.00 | 0.90 |
| Ø                    | --       | --   | 45°  |
| Ø1                   | --       | 15°  | --   |
| Ø2                   | --       | --   | 10°  |
| All Dimensions in mm |          |      |      |

OBSOLETE - PART DISCONTINUED

**Suggested Pad Layout**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**SM-8**



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 1.52          |
| C1         | 4.6           |
| X          | 0.95          |
| Y          | 2.80          |
| Y1         | 6.80          |

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