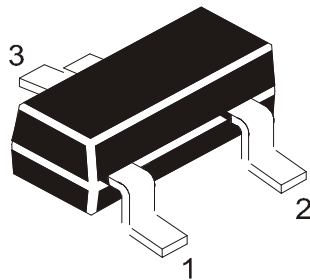


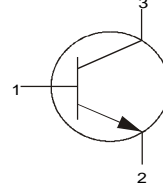
NPN SILICON PLANAR EPITAXIAL TRANSISTOR

CMBTH10

SOT-23
Formed SMD Package



PIN CONFIGURATION (NPN)
1 = BASE
2 = EMITTER
3 = COLLECTOR



Marking Code = 3E

VHF/UHF Transistor

ABSOLUTE MAXIMUM RATINGS

| DESCRIPTION | SYMBOL | VALUE | UNITS |
|---------------------------|-----------|-------|-------|
| Collector Emitter Voltage | V_{CEO} | 25 | V |
| Collector Base Voltage | V_{CBO} | 30 | V |
| Emitter Base Voltage | V_{EBO} | 3.0 | V |

THERMAL CHARACTERISTICS

| | | | |
|--|----------------|------------|------------------------------|
| *Device Dissipation FR-5 Board, $T_a=25^{\circ}\text{C}$ Derate above $=25^{\circ}\text{C}$ | P_D | 225 1.8 | mW mW/ $^{\circ}\text{C}$ |
| Thermal Resistance Junction to Ambient in free Air | $R_{th(j-a)}$ | 556 | $^{\circ}\text{C}/\text{mW}$ |
| **Device Dissipation Alumina Substrate, $T_a=25^{\circ}\text{C}$ Derate above $=25^{\circ}\text{C}$ | P_D | 300 2.4 | mW mW/ $^{\circ}\text{C}$ |
| Thermal Resistance Junction to Ambient in free Air | $R_{th(j-a)}$ | 417 | $^{\circ}\text{C}/\text{mW}$ |
| Junction and Storage Temperature | T_j, T_{stg} | 150 | $^{\circ}\text{C}$ |

* FR-5 Board=25.4 x 19.05 x 1.58 mm (1.0 x 0.75 x 0.062 inches)

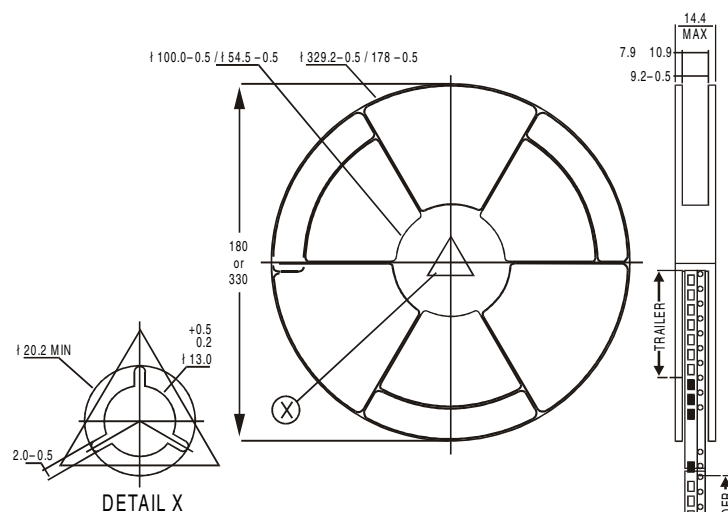
** Alumina Substrate=10.16 x 7.62 x 0.61 mm (0.4 x 0.3 x 0.024 inches) 99.5% alumina.

Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless specified otherwise)

| DESCRIPTION | SYMBOL | CONDITIONS | MIN | MAX | UNIT |
|--------------------------------------|---------------|-------------------------------------|-----|------|------|
| Collector Emitter Voltage | V_{CEO} | $I_C=1\text{mA}, I_B=0$ | 25 | | V |
| Collector Base Voltage | V_{CBO} | $I_C=100\mu\text{A}, I_E=0$ | 30 | | V |
| Emitter Base Voltage | V_{EBO} | $I_E=10\mu\text{A}, I_C=0$ | 3 | | V |
| Collector Cut Off Current | I_{CBO} | $V_{CB}=25\text{V}, I_E=0$ | | 100 | nA |
| Emitter Cut Off Current | I_{EBO} | $V_{EB}=2\text{V}, I_C=0$ | | 100 | nA |
| DC Current Gain | h_{FE} | $V_{CE}=10\text{V}, I_C=4\text{mA}$ | 60 | | |
| Collector Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=4\text{mA}, I_B=0.4\text{mA}$ | | 0.50 | V |
| Base Emitter On Voltage | $V_{BE(on)}$ | $V_{CE}=10\text{V}, I_C=4\text{mA}$ | | 0.95 | V |

SOT-23 Package Reel Information

Reel specifications for Packing (13"/7" reels)



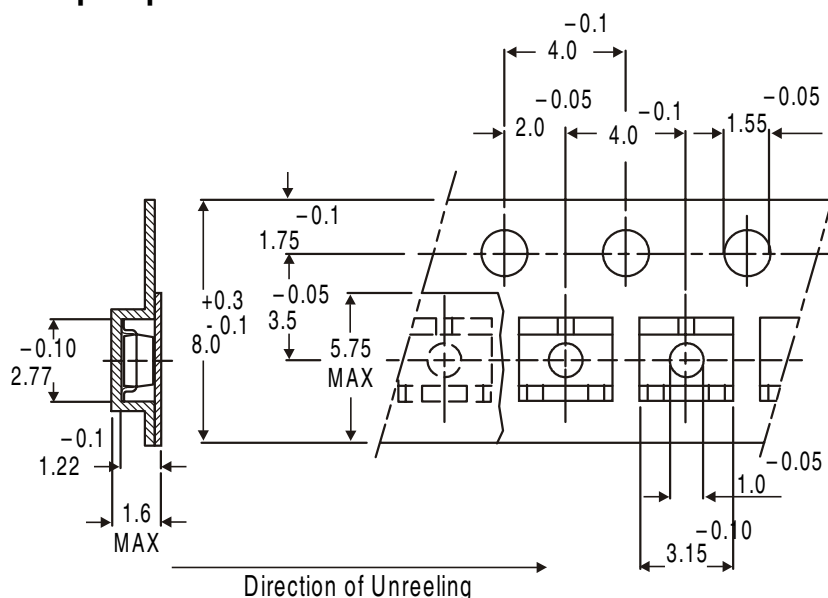
All dimensions in mm
330 / 180 mm Antistatic Coated Plastic Reel

NOTES:

| | | |
|----------------|--------------|--------------|
| | 8mm Tape | 8mm Tape |
| | Size of Reel | Size of Reel |
| | 330 mm (13") | 180 mm (7") |
| No. of Devices | 10,000 Pcs | 3,000 Pcs |

1. The bandolier of 330 mm reel contains at least 10,000 devices.
2. The bandolier of 180 mm reel contains at least 3,000 devices.
3. No more than 0.5% missing devices / reel. 50 empty compartments for 330 mm reel. 15 empty compartments for 180 mm reel.
4. Three consecutive empty places might be found provided this gap is followed by 6 consecutive devices.
5. The carrier tape (leader) starts with at least 75 empty positions (equivalent to 330 mm). In order to fix the carrier tape a self adhesive tape of 20 to 50 mm is applied. At the end of the bandolier at least 40 empty positions (equivalent to 160 mm) are there.

Tape Specification for SOT-23 Surface Mount Device



All dimensions in mm

Packing Detail

| PACKAGE | STANDARD PACK | | INNER CARTON BOX | | OUTER CARTON BOX | | |
|------------|---------------|----------------|------------------|-------|-------------------|--------|--------|
| | Details | Net Weight/Qty | Size | Qty | Size | Qty | Gr Wt |
| SOT-23 T&R | 3K/reel | 136 gm/3K pcs | 3" x 7.5" x 7.5" | 12.0K | 17" x 15" x 13.5" | 192.0K | 12 kgs |
| | | | 9" x 9" x 9" | 51.0K | 19" x 19" x 19" | 408.0K | 28 kgs |
| | 10K/reel | 415 gm/10K pcs | 13" x 13" x 0.5" | 10.0K | 17" x 15" x 13.5" | 300.0K | 16 kgs |

Customer Notes

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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