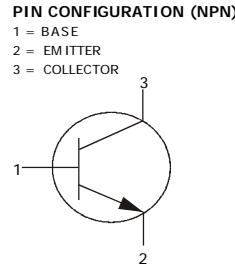
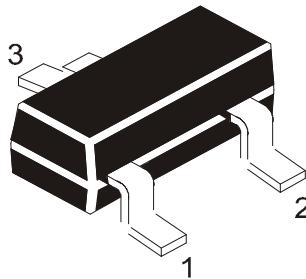


**NPN SILICON PLANAR EPITAXIAL TRANSISTOR**
**CMBTA44**
**SOT-23  
Formed SMD Package**

**Marking Code is =3Z**
**Designed for Extremely High Voltage Applications**
**ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )**

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Base Voltage	$V_{CBO}$	450	V
Collector Emitter Voltage	$V_{CEO}$	400	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	300	mA
Collector Power Dissipation	$P_D$	350	mW
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	- 65 to +150	°C

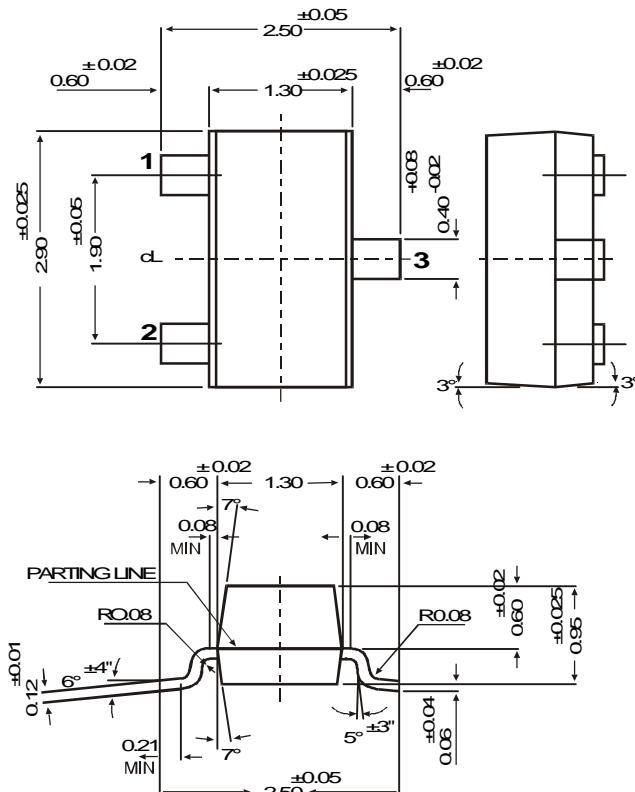
**THERMAL RESISTANCE**

Junction to Ambient in free air	$R_{th(j-a)}$	357	°C/W
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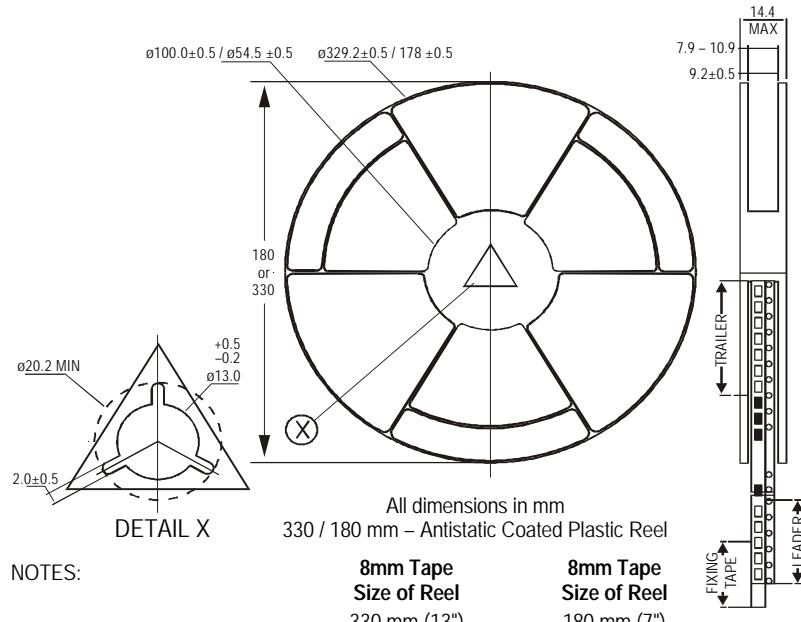
**Electrical Characteristics ( $T_a=25^\circ\text{C}$  unless specified otherwise)**

DESCRIPTION	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut Off Current	$I_{CBO}$	$V_{CB}=400\text{V}, I_E=0$			100	nA
Collector Cut Off Current	$I_{CES}$	$V_{CE}=400\text{V}, V_{BE}=0$			500	nA
Emitter Cut Off Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			100	nA
Collector Base Voltage	$V_{CBO}$	$I_C=100\mu\text{A}, I_E=0$	450			V
Collector Emitter Voltage	$V_{CES}$	$I_C=100\mu\text{A}, V_{BE}=0$	450			V
Collector Emitter Voltage	$V_{CEO}$	$I_C=1\text{mA}, I_B=0$	400			V
Emitter Base Voltage	$V_{EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector Emitter Saturation Voltage	$V_{CE(\text{sat})}$	$I_C=1\text{mA}, I_B=0.1\text{mA}$			0.40	V
		$I_C=10\text{mA}, I_B=1\text{mA}$			0.50	V
		$I_C=50\text{mA}, I_B=5\text{mA}$			0.75	V
Base Emitter Saturation Voltage	$V_{BE(\text{sat})}$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.75	V
DC Current Gain	$h_{FE}$	$V_{CE}=10\text{V}, I_C=1\text{mA}$	40			
		$V_{CE}=10\text{V}, I_C=10\text{mA}$	50		200	
		$V_{CE}=10\text{V}, I_C=50\text{mA}$	45			
		$V_{CE}=10\text{V}, I_C=100\text{mA}$	20			
Transition Frequency	$f_T$	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=10\text{MHz}$	20			MHz
Output Capacitance	$C_{ob}$	$V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$			7.0	pF
Input Capacitance	$C_{ib}$	$V_{EB}=0.5\text{V}, I_C=0, f=1\text{MHz}$			130	pF

## **SOT-23 Formed SMD Package**

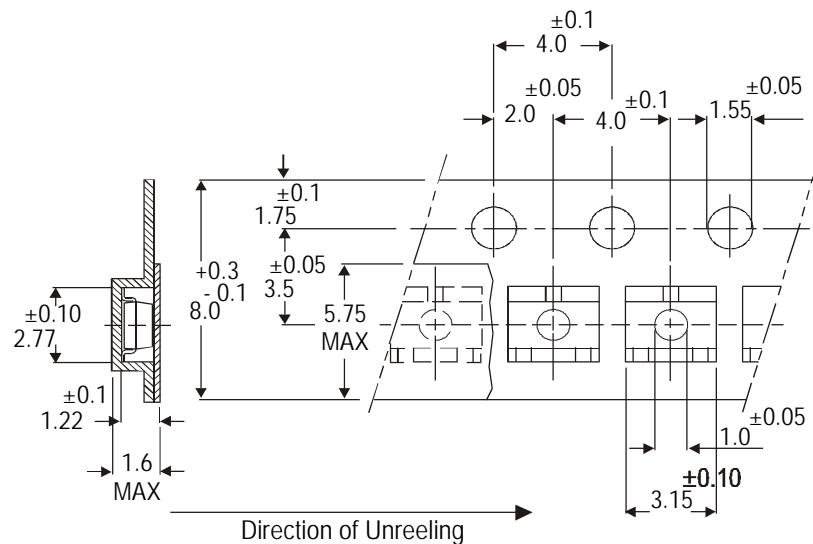


## **SOT-23 Package Reel Information**



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



## 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/feet	136 gm/3K pcs	3" x 7.5" x 7.5"	12 K	17" x 15" x 13.5"	192 K	12 kgs
	10K/feet	415 gm/10K pcs	9" x 9" x 9"	51 K	19" x 19" x 19"	408 K	28 kgs
			13" x 13" x 0.5"	10 K	17" x 15" x 13.5"	300 K	16 kgs

### **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 in the Data Sheet and 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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