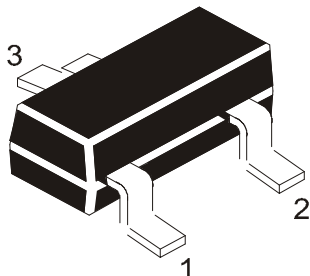


## NPN SILICON PLANAR EPITAXIAL TRANSISTOR

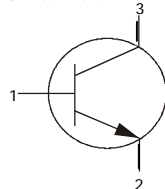
**CSD1306 (SAW)**

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



PIN CONFIGURATION (NPN)

1 = BASE  
2 = EMITTER  
3 = COLLECTOR



**Marking**  
**CSD1306E=06**

### ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Base Voltage	$V_{CBO}$	30	V
Collector Emitter Voltage	$V_{CEO}$	15	V
Emitter Base Voltage	$V_{EBO}$	5	V
Collector Current Continuous	$I_C$	700	mA
Collector Current Peak	$I_{CP}$	1	A
Power Dissipation @ $T_a=25^\circ\text{C}$	$P_D$	200	mW
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	- 55 to +150	$^\circ\text{C}$

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

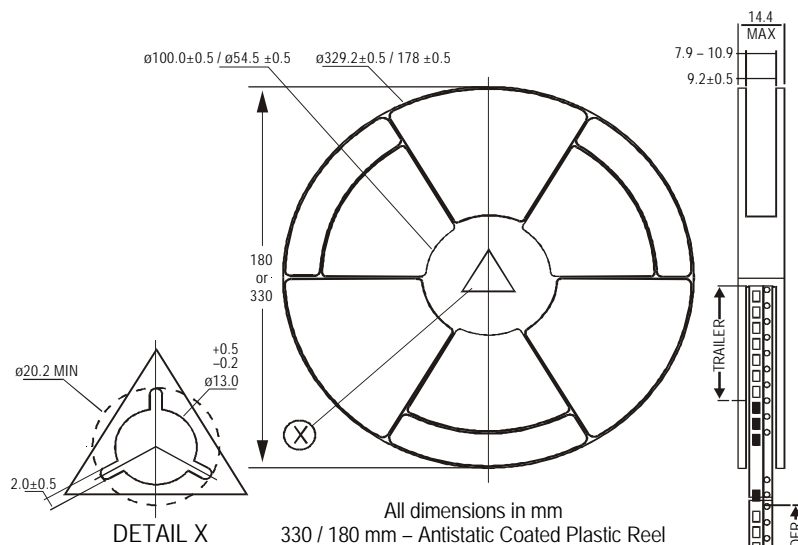
DESCRIPTION	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Collector Base Voltage	$V_{CBO}$	$I_C=10\mu\text{A}, I_E=0$	30			V
Collector Emitter Voltage	$V_{CEO}$	$I_C=10\text{mA}, I_B=0$	15			V
Emitter Base Voltage	$V_{EBO}$	$I_E=1\mu\text{A}, I_C=0$	5			V
Collector Cut off Current	$I_{CBO}$	$V_{CB}=20\text{V}, I_E=0$			1.0	$\mu\text{A}$
Emitter Cut off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			1.0	$\mu\text{A}$
Base Emitter On Voltage	$V_{BE (on)}$	$V_{CE}=1\text{V}, I_C=150\text{mA}$			1.0	V
Collector Emitter Saturation Voltage	$V_{CE (sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.5	V
DC Current Gain	$h_{FE}$	$V_{CE}=1\text{V}, I_C=150\text{mA}$	250		1200	
Transition Frequency	$f_T$	$V_{CE}=1\text{V}, I_C=150\text{mA}$		250		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$			10	pF
Input Capacitance	$C_{ib}$	$V_{EB}=0.5\text{V}, I_C=0, f=1\text{MHz}$			100	pF

$h_{FE}$ Classification	<b>D : 250 - 500</b>	<b>E : 300 - 800</b>	<b>F : 600 -1200</b>
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CSD1306ERev\_3 300103E

## SOT-23 Package Reel Information

### Reel Specifications for W Packing (13") and 7"



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

Technical drawing of a tape reel showing dimensions and tolerances. The drawing includes a side view of the tape cross-section and a top view of the reel with three circular tape pockets. Dimensions are given in millimeters with tolerances. Key dimensions include: tape width 1.6 MAX, tape thickness 0.1, reel diameter 4.0, and various spacing dimensions like 2.0, 4.0, and 1.55. A dashed line indicates the 'Direction of Unreeling'.

## 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/feel	136 gm/3K pcs	3" x 7.5" x 7.5"	12 K	17" x 15" x 13.5"	192 K	12 kgs
			9" x 9" x 9"	51 K	19" x 19" x 19"	408 K	28 kgs
	10K/feel	415 gm/10K pcs	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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