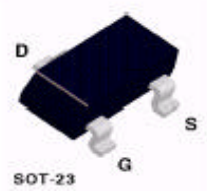
Continental Device India Limited

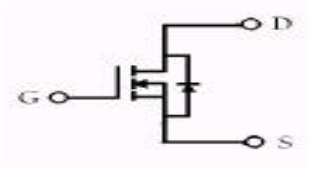
An ISO/TS 16949 and ISO 9001 Certified Company

NPN CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

2N7002



Equivalent Circuit



G : Gate
S : Sourse
D : Drain

PIN COFIGURATION
G= GATE
S= SOURCE
D= DRAIN

SOT-23
Formed SMD Package

Marking
2N7002=S72

Designed for High Speed Pulse Amplifier and Drive Application

ABSOLUTE MAXIMUM RATINGS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	VALUE	UNITS
Drain Source Voltage	V_{DSS}	60	V
Drain Gate Voltage	V_{DRG}	60	V
Gate Source Voltage	V_{GSS}	20	V
Maximum Drain Current Continuous	I_D	200	mA
Maximum Drain Current Pulse	*I_D	800	mA
Maxium Power Dissipation Derating Above 25ºC	P_D	350	mW
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 55 to +150	ºC

THERMAL RESISTANCE

Junction to Ambient in free air	$R_{th\ (j-a)}$	357	ºC/W

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

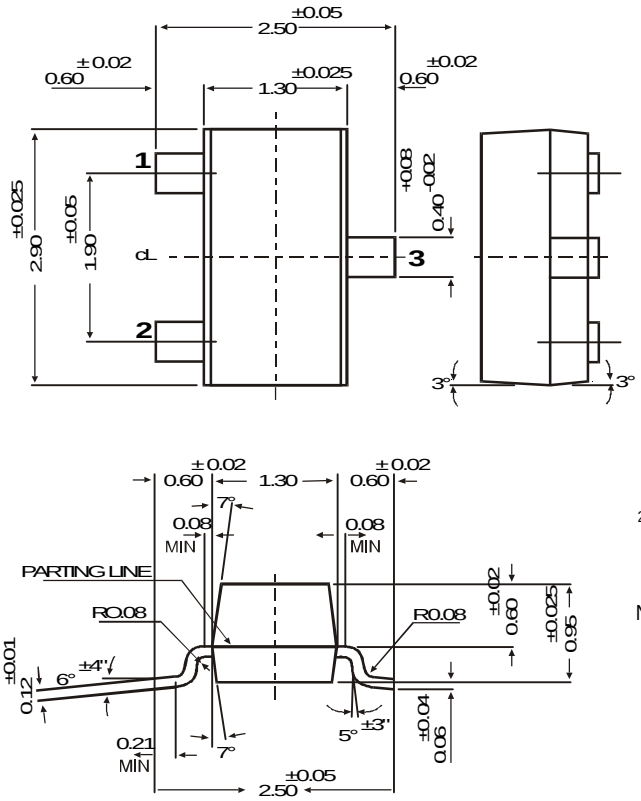
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Drain Source Breakdown Voltage	V_{DSS}	V_{GS}=0V, I_D=10µA	60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0			1.0	µA
		V_{DS}=60V, V_{GS}=0, T_j=125ºC			0.5	mA
Gate Body Leakage Forward	I_{GSSF}	V_{DS}=0, V_{GS}=20V			100	nA
Gate Body Leakage Reverse	I_{GSSR}	V_{DS}=0, V_{GS}= -20V			- 100	nA
Gate Threshold Voltage	*$V_{GS\ (th)}$	V_{DS}=V_{GS}, I_D=250µA	1.0		2.5	V
Static Drain Source On Resistance	*$R_{DS\ (on)}$	V_{GS}=10V, I_D=500mA			7.5	Ω
Drain Source On Voltage	*$V_{DS\ (on)}$	V_{GS}=10V, I_D=500mA			3.75	V
		V_{GS}=5V, I_D=50mA			1.5	V
On State Drain Current	*$I_{D\ (on)}$	V_{GS}=10V, $V_{DS} \geq 2V_{DS\ (on)}$	500			mA
Forward Transconductance	*G_{FS}	V_{GS}>2V, $V_{DS\ (on)}$, I_D=200mA	80			mS

DYNAMIC CHARACTERISTICS

Input Capacitance	C_{ISS}	V_{DS}=25V, V_{GS}=0V, f=1MHz			50	pF
Output Capacitance	C_{OSS}				25	pF
Reverse Transfer Capacitance	C_{RSS}				5.0	pF
Turn On Time	t_{on}	V_{DD}=30V, R_L=25Ω, I_D=500mA, V_{GS}=10V, R_{GEN}=25Ω			20	ns
Turn Off Time	t_{off}				20	ns

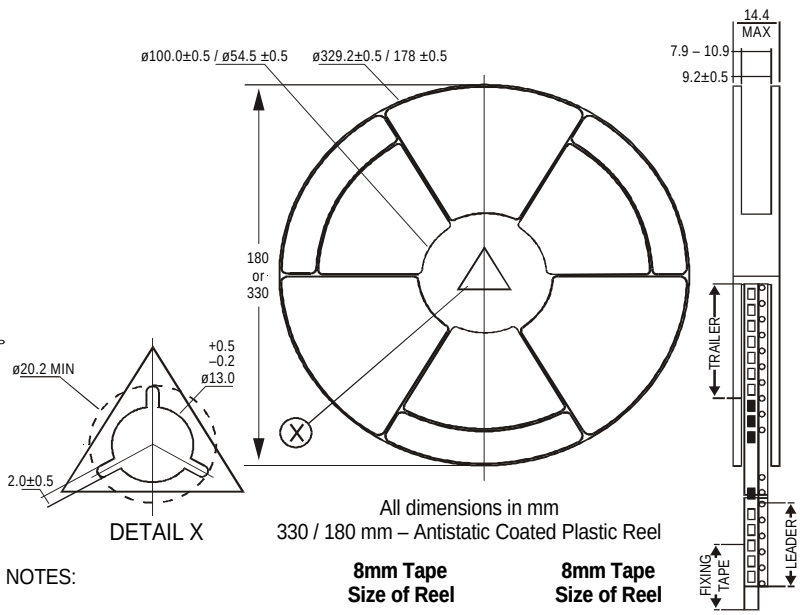
***Pulse Test: Pulse Width ≤ 300µs, Duty Cycle ≤ 2%**

SOT-23 Formed SMD Package



SOT-23 Package Reel Information

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



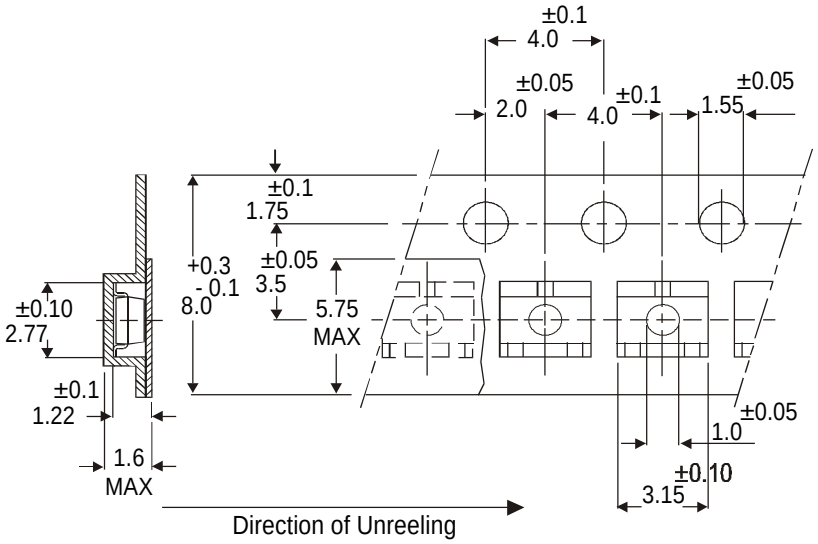
All dimensions in mm
330 / 180 mm – Antistatic Coated Plastic Reel

NOTES:

	8mm Tape Size of Reel	8mm Tape 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 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/reel	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 is 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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