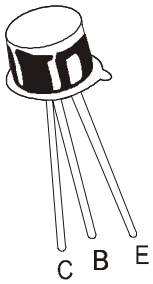
Continental Device India Limited

An ISO/TS16949 and ISO 9001 Certified Company

PNP SILICON PLANAR SWITCHING TRANSISTORS

2N3250, A/ 2N3251,A



TO-18
Metal Can Package

Designed for Small Signal, General Purpose and Switching Applications

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	2N3250 2N3251	2N3250A 2N3251A	UNIT
Collector Emitter Voltage	V_{CEO}	40	60	V
Collector Base Voltage	V_{CBO}	50	60	V
Emitter Base Voltage	V_{EBO}	5		V
Collector Current Continuous	I_C	200		mA
Power Dissipation @ T_a=25ºC	P_D	360		mW
Derate Above 25ºC		2.06		mW/ ºC
Power Dissipation @ T_c=25ºC	P_D	1.2		W
Derate Above 25ºC		6.9		mW/ ºC
Operating And Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +200		ºC

THERMAL RESISTANCE

Junction to Ambient in free air	$R_{th\ (j\text{-}a)}$	490	ºC/W
Junction to Case	$R_{th\ (j\text{-}c)}$	150	ºC/W

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	2N3250 2N3251	2N3250A 2N3251A	UNIT
Collector Emitter Voltage	*V_{CEO}	I_C=10mA, I_B=0	>40	>60	V
Collector Base Voltage	V_{CBO}	I_C=10µA, I_E=0	>50	>60	V
Emitter Base Voltage	V_{EBO}	I_E=10µA, I_C=0	>5		V
Collector Cutoff Current	I_{CEX}	V_{CE}=40V, V_{BE}=3V	<20		nA
Base Cutoff Current	I_{BL}	V_{CE}=40V, V_{BE}=3V	<50		nA

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Collector Emitter Saturation Voltage	*$V_{CE\ (sat)}$	I_C=10mA, I_B=1mA		0.25	V
		I_C=50mA, I_B=5mA		0.5	V
Base Emitter Saturation Voltage	*$V_{BE\ (sat)}$	I_C=10mA, I_B=1mA	0.6	0.9	V
		I_C=50mA, I_B=5mA		1.2	V

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

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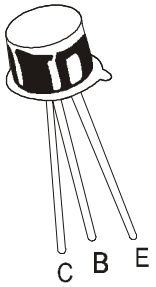

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ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

SMALL SIGNAL CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	2N3250, A	2N3251, A	UNIT
DC Current Gain	*h_{FE}	I_C=0.1mA, V_{CE}=1V I_C=1mA, V_{CE}=1V I_C=10mA, V_{CE}=1V I_C=50mA, V_{CE}=1V	>40 >45 50 - 150 >15	>80 >90 100 - 300 >30	

DYNAMIC CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	2N3250, A	2N3251, A	UNIT
Small Signal Current Gain	h_{fe}	V_{CE}=10V, I_C=1mA, f=1KHz	50 - 200	100 -400	
Input Impedence	h_{ie}	V_{CE}=10V, I_C=1mA, f=1KHz	1.0 - 6.0	2.0 - 12.0	KΩ
Reverse Voltage Transfer Ratio	h_{re}	V_{CE}=10V, I_C=1mA, f=1KHz	<10	<20	x 10^{-4}
Output Admittance	h_{oe}	V_{CE}=10V, I_C=1mA, f=1KHz	4 - 40	10 - 60	μΩ
Noise Figure	NF	V_{CE}=5V, I_C=0.1mA, R_S=1KΩ, f=100Hz	<6.0		dB
Transition Frequency	f_T	I_C=10mA, V_{CE}=20V, f=100MHz	>250	>300	MHz
Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=100KHz	<6.0		pF
Input Capacitance	C_{ib}	V_{EB}=1V, I_C=0, f=100KHz	<8.0		pF
Collector Base Time Constant	$r_b'C_C$	I_C=10mA, V_{CE}=20V, f=31.8MHz	<250		ps

SWITCHING TIME

DESCRIPTION	SYMBOL	TEST CONDITION	2N3250, A	2N3251, A	UNIT
Delay Time	t_d	V_{CC}=3V, V_{BE}=0.5V, I_C=10mA, I_{B1}=1mA	<35		ns
Rise Time	t_r		<35		ns
Storage time	t_s	V_{CC}=3V, I_C=10mA, I_{B1}=I_{B2}=1mA	<175	<200	ns
Fall Time	t_f		<50		ns

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

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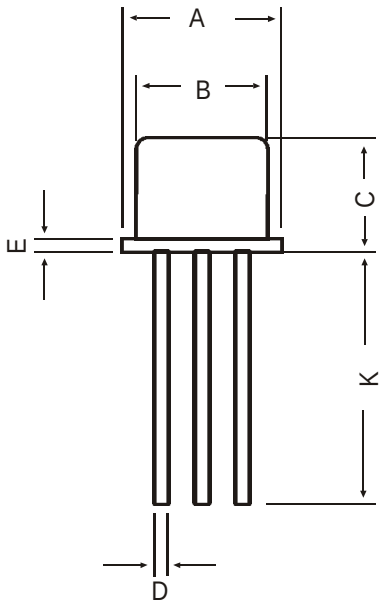
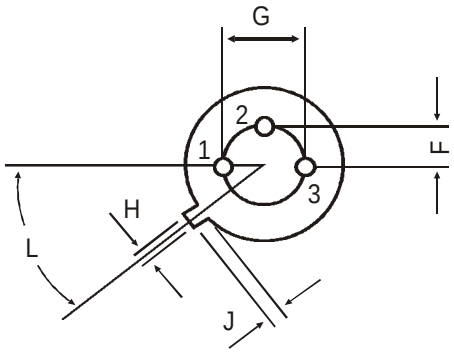
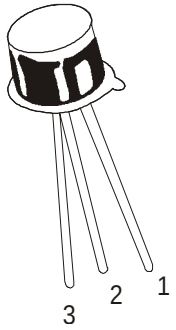




All diminsions in mm.

DIM	MIN	MAX
A	5.24	5.84
B	4.52	4.97
C	4.31	5.33
D	0.40	0.53
E	—	0.76
F	—	1.27
G	—	2.97
H	0.91	1.17
J	0.71	1.21
K	12.70	—
L	45 DEG	



PIN CONFIGURATION
1. EMITTER
2. BASE
3. COLLECTOR

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-18	1K/polybag	350 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	34 kgs

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Disclaimer

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Continental Device India Limited
C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119
email@cdil.com www.cdilsemi.com

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