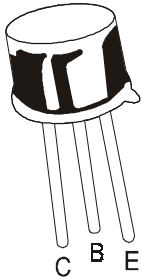


## PNP SILICON PLANAR TRANSISTORS

2N4030, 2N4031  
2N4032, 2N4033



TO-39  
Metal Can Package

2N4030 And 2N4033 ARE PNP SMALL SIGNAL GENERAL PURPOSE AMPLIFIER, TRANSISTORS.

### ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)

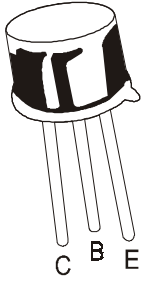
DESCRIPTION	SYMBOL	2N4030,32	2N4031, 33	UNITS
Collector Emitter Voltage	$V_{CEO}$	60	80	V
Collector Base Voltage	$V_{CBO}$	60	80	V
Emitter Base Voltage	$V_{EBO}$		5	V
Collector Current	$I_{CM}$		1	A
Power Dissipation @ Ta=25°C	$P_D$		800	mW
Derate Above 25°C			4.6	mW/°C
Power Dissipation @ Tc=25°C	$P_D$		4	W
Derate Above 25°C			22.85	mW/°C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$		-65 to +200	°C

### ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS		
Collector Emitter Breakdown Voltage	$BV_{CEO}^*$	$I_C=10mA, I_B=0$					
			2N4030, 4032	60		V	
			2N4031, 4033	80		V	
Collector Base Breakdown Voltage	$BV_{CBO}$	$I_C=10\mu A, I_E=0$					
			2N4030, 4032	60		V	
			2N4031, 4033	80		V	
Emitter Base Breakdown Voltage	$BV_{EBO}$	$I_E=10\mu A, I_C=0$	5		V		
Collector Leakage Current	$I_{CBO}$	$V_{CB}=50V, I_E=0$					
			2N4030, 4032		50	nA	
			2N4030, 4032	$V_{CB}=50V, T_A=150^\circ C$	50		$\mu A$
			2N4031, 4033	$V_{CB}=60V, I_E=0$	50		nA
			2N4031, 4033	$V_{CB}=60V, T_A=150^\circ C$	50		$\mu A$
Emitter Leakage Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$		10	$\mu A$		

# PNP SILICON PLANAR TRANSISTORS

2N4030, 2N4031  
2N4032, 2N4033



TO-39  
Metal Can Package

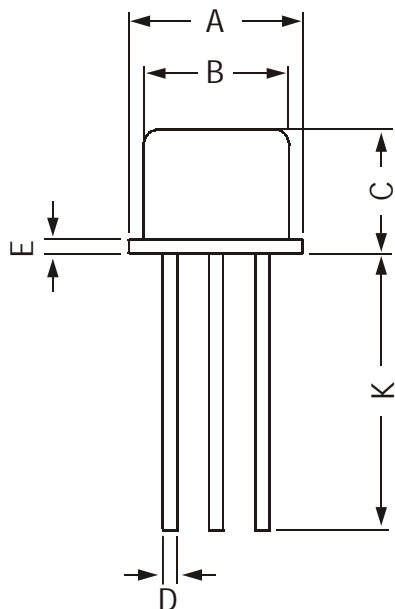
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	MAX	UNITS
Collector Emitter Saturation Voltage	$V_{CE(Sat)}$ *	$I_C=150mA, I_B=15mA$		0.15	V
		$I_C=500mA, I_B=50mA$		0.5	V
		$I_C=1A, I_B=100mA$		1.0	V
2N4030, 4032					
Base Emitter Saturation Voltage	$V_{BE(Sat)}$ *	$I_C=150mA, I_B=15mA$		0.9	V
Base Emitter on Voltage	$V_{BE(on)}$ *	$I_C=500mA, V_{CE}=0.5V$		1.1	V
2N4030, 4032		$I_C=1A, V_{CE}=1V$		1.2	V
<b>DC Current Gain</b>					
2N4030, 4031	$h_{FE}$ *	$I_C=100mA, V_{CE}=5V$	30		
			75		
2N4032, 4033		$I_C=100mA, V_{CE}=5V$	40	120	
			100	300	
2N4030, 4031		$I_C=500mA, V_{CE}=5V$	25		
			70		
2N4030, 4031		$I_C=100mA, V_{CE}=5V,$ $T_a=-55^\circ C$	15		
			40		
2N4032, 4033			15		
			10		
2N4030		$I_C=1A, V_{CE}=5V$	15		
2N4031			10		
2N4032			40		
2N4033			25		

## SMALL SIGNAL CHARACTERISTICS

Transition Frequency	$f_T$	$I_C=50mA, V_{CE}=10V,$ $f=100MHz$	100	400	MHz
			150	500	MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$		20	pF
Input Capacitance	$C_{ib}$	$V_{BE}=0.5V, I_C=0, f=1MHz$		110	pF
Turn on Time	$t_{on}$	$I_C=500mA, I_{B1}=50mA$		100	nS
Storage Time	$t_{on}$	$I_C=500mA, I_{B1}=I_{B2}=50mA$		350	nS
Fall Time	$t_f$	$I_C=500mA, I_{B1}=I_{B2}=50mA$		50	nS

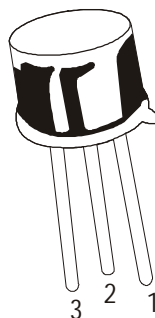
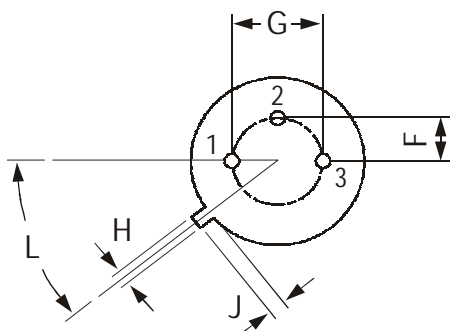
\*Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$

TO-39 Metal Can Package



All dimensions are in mm

DIM	MIN	MAX
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	—	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	—
L	42 DEG	48 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-39	500 pcs/polybag	540 gm/500 pcs	3" x 7.5" x 7.5"	20K	17" x 15" x 13.5"	32K	40 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).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of

**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