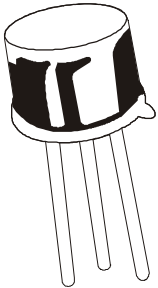


**NPN SILICON PLANAR TRANSISTORS**

**2N3053  
2N3053A  
TO-39**



**General Purpose, Medium Current Amplifier Applications.**

**ABSOLUTE MAXIMUM RATINGS**

DESCRIPTION	SYMBOL	2N3053	2N3053A	UNITS
Collector -Emitter Voltage (1)	VCEO	40	60	V
Collector -Base Voltage	VCBO	60	80	V
Emitter -Base Voltage	VEBO		5.0	V
Collector Current Continuous	IC		700	mA
Power Dissipation@ Tc=25 degC	PD		5.0	W
Derate Above 25 deg C			28.6	mW/deg C
Operating And Storage Junction Temperature Range	Tj, Tstg		-65 to +200	deg C
Lead Temperature 1/16", +/- 1/32" From Case for 10 s	TL		+235	deg C
<b>THERMAL RESISTANCE</b>				
Junction to Case	Rth(j-c)		35	deg C/W

(1) Applicable 0 to 100mA(pulsed):

Pulse Width =300us, Duty Cycle=2%

0 to 700 mA; Pulse Width=10us, Duty Cycle=2%

**ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Otherwise Specified)**

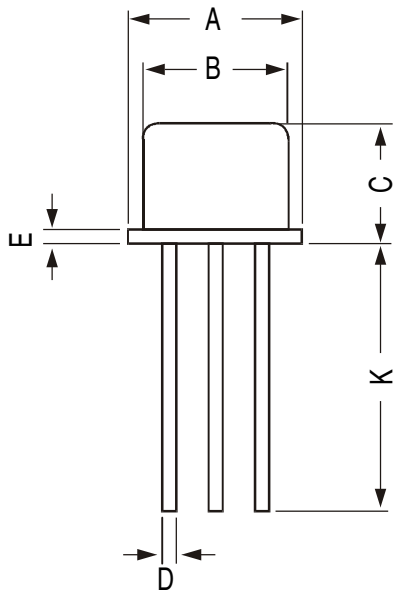
DESCRIPTION	SYMBOL	TEST CONDITION	2N3053	2N3053A	UNITS
Collector -Emitter Voltage	VCEO*	IC=100uA, IB=0	>40	>60	V
	VCER*	IC=100mA, RBE=10ohms	>50	>70	V
Collector -Base Voltage	VCBO	IC=100uA, IE=0	>60	>80	V
Emitter -Base Voltage	VEBO	IE=100uA, IC=0	>5.0	>5.0	V
Collector-Cut off Current	ICEX	VCE=30V, VBE(off)=1.5V	<250	-	nA
		VCE=60V, VBE(off)=1.5V	-	<250	nA
Emitter-Cut off Current	IEBO	VBE=4V, IC=0	<250	-	nA
Base Cutt-off Current	IBL	VCE=60V, VBE(off)=1.5V	-	<250	nA
DC Current Gain	hFE*	IC=150mA, VCE=2.5V	>25	>25	
		IC=150mA, VCE=10V	50 -250	50 -250	
Collector Emitter Saturation Voltage	VCE(Sat)*	IC=150mA, IB=15mA	<1.4	<0.3	V
Base Emitter Saturation Voltage	VBE(Sat) *	IC=150mA, IB=15mA	<1.7	0.6-1.0	V
Base Emitter on Voltage	VBE(on)*	IC=150mA, VCE=2.5V	<1.7	<1.0	V

**SMALL SIGNAL CHARACTERISTICS**

Output Capacitance	Cobo	VCB=10V, IE=0, f=140kHz	<15	<15	pF
Input Capacitance	Cibo	VBE=0.5V, IC=0, f=140kHz	<80	<80	pF
Current Gain-Bandwidth Product	ft	IC=50mA, VCE=10V, f=20MHz	>100	>100	MHz

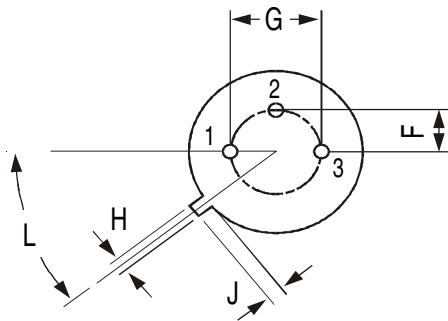
\*Pulse Test:- Pulse Width =300us, Duty Cycle=2%

## 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"	20.0K	17" x 15" x 13.5"	32.0K	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 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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