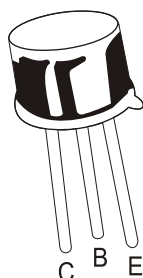


## NPN SILICON PLANAR TRANSISTOR

## 2N3501P



TO-39

Metal Can Package

### Amplifier Transistor

#### ABSOLUTE MAXIMUM RATINGS (at $T_A=25^\circ\text{C}$ , unless otherwise specified)

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Emitter Voltage	$V_{CEO}$	150	V
Collector Base Voltage	$V_{CBO}$	150	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current Continuous	$I_C$	300	mA
Power Dissipation @ $T_A = 25^\circ\text{C}$	$P_D$	1	W
Derate Above $25^\circ\text{C}$		5.71	mW/ $^\circ\text{C}$
Power Dissipation @ $T_C = 25^\circ\text{C}$	$P_D$	5	W
Derate Above $25^\circ\text{C}$		28.6	mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	- 65 to +200	$^\circ\text{C}$

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

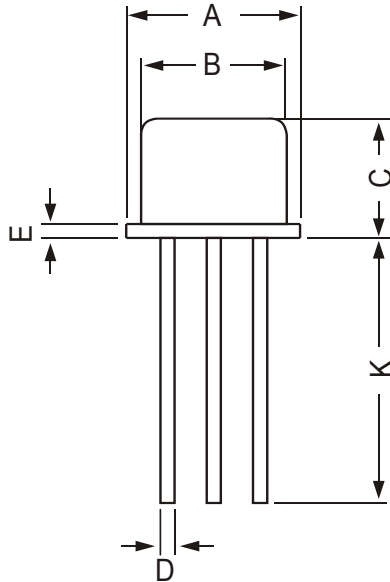
DESCRIPTION	SYMBOL	TEST CONDITION	VALUE	UNIT
Junction to Ambient	$R_{th(J-A)}$		175	$^\circ\text{C/W}$
Junction to Case	$R_{th(J-C)}$		35	$^\circ\text{C/W}$

**ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$  unless specified otherwise )**

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter Breakdown Voltage	$V_{CEO}$	$I_C=10\text{mA}$ , $I_B=0$	150			V
Collector Base Breakdown Voltage	$V_{CBO}$	$I_C=10\mu\text{A}$ , $I_E=0$	150			V
Emitter Base Breakdown Voltage	$V_{EBO}$	$I_E=10\mu\text{A}$ , $I_C=0$	6			V
Collector Cut Off Current	$I_{CBO}$	$V_{CB}=75\text{V}$ , $I_E=0$			50	nA
Emitter Cut Off Current	$I_{EBO}$	$V_{EB}=4\text{V}$ , $I_C=0$			25	nA
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}$ , $I_B=1\text{mA}$			0.2	V
		$I_C=50\text{mA}$ , $I_B=5\text{mA}$			0.25	V
		$I_C=150\text{mA}$ , $I_B=15\text{mA}$			0.4	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10\text{mA}$ , $I_B=1\text{mA}$			0.8	V
		$I_C=50\text{mA}$ , $I_B=5\text{mA}$			0.9	V
		$I_C=150\text{mA}$ , $I_B=15\text{mA}$			1.2	V
DC Current Gain	$*h_{FE}$	$I_C=0.1\text{mA}$ , $V_{CE}=10\text{V}$	35			
		$I_C=1\text{mA}$ , $V_{CE}=10\text{V}$	50			
		$I_C=10\text{mA}$ , $V_{CE}=10\text{V}$	75			
		$I_C=150\text{mA}$ , $V_{CE}=10\text{V}$	40		300	
		$I_C=300\text{mA}$ , $V_{CE}=10\text{V}$	10			
Transition Frequency	$f_T$	$V_{CE}=10\text{V}$ , $I_C=10\text{mA}$ , $f=1\text{KHz}$	150			MHz

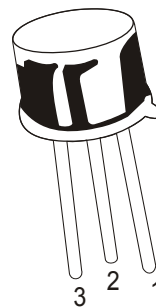
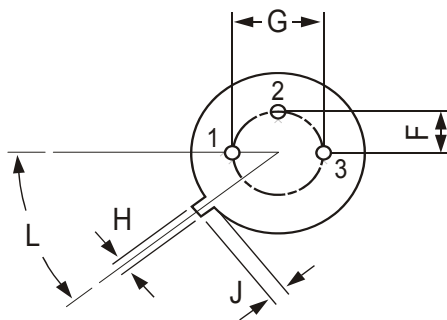
\*Pulse Test: Pulse Width = 300 $\mu\text{s}$ , Duty Cycle  $\leq 2\%$

## 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



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## Customer Notes

### Disclaimer

The product information and the selection guides facilitate selection of the CDIL's 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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