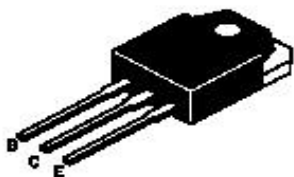


## HIGH POWER TRANSISTORS

TIP33, A, B, C NPN  
TIP34, A, B, C PNP

TO- 3PN Non Isolated  
Plastic Package



For General Purpose Power Amplifier and Switching Applications.

### ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	TIP33 TIP34	TIP33A TIP34A	TIP33B TIP34B	TIP33C TIP34C	UNIT
Collector Emitter Voltage	$V_{CEO}$	40	60	80	100	V
Collector Base Voltage	$V_{CBO}$	40	60	80	100	V
Emitter Base Voltage	$V_{EBO}$	5.0				V
Collector Current Continuous	$I_C$	10				A
Collector Current Peak	$*I_{CM}$	15				A
Base Current Continuous	$I_B$	3.0				A
Total Power Dissipation at $T_c=25^\circ\text{C}$	$P_D$	80				W
Derate Above $25^\circ\text{C}$		0.64				W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	- 65 to +150				$^\circ\text{C}$

\*Pulse test: Pulse width = 10ms , Duty cycle  $\leq 10\%$

### THERMAL CHARACTERISTICS

Thermal Resistance, Junction to Case	$R_{th(j-c)}$	1.56	$^\circ\text{C/W}$
Junction to Free Air Thermal Resistance	$R_{th(j-a)}$	35.7	$^\circ\text{C/W}$

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Emitter Sustaining Voltage	$**V_{CEO(sus)}$	$I_C=30\text{mA}, I_B=0$ TIP33/TIP34 TIP33A/TIP34A TIP33B/TIP34B TIP33C/TIP34C	40 60 80 100			V V V V
Collector Emitter Cut Off Current	$I_{CEO}$	$V_{CE}=30\text{V}, I_B=0$ TIP33/A, TIP34/A $V_{CE}=60\text{V}, I_B=0$ TIP33B/C, TIP34B/C			0.7 0.7	mA mA
Collector Emitter Cut Off Current	$I_{CES}$	$V_{CE}=\text{Rated } V_{CEO}, V_{EB}=0$			0.4	mA
Emitter Base Cut Off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			1.0	mA
DC Current Gain	$**h_{FE}$	$I_C=1\text{A}, V_{CE}=4\text{V}$ $I_C=3\text{A}, V_{CE}=4\text{V}$	40 20		100	
Collector Emitter Saturation Voltage	$**V_{CE(sat)}$	$I_C=3\text{A}, I_B=0.3\text{A}$ $I_C=10\text{A}, I_B=2.5\text{A}$			1.0 4.0	V V
Base Emitter On Voltage	$**V_{BE(on)}$	$I_C=3\text{A}, V_{CE}=4\text{V}$ $I_C=10\text{A}, V_{CE}=4\text{V}$			1.6 3.0	V V

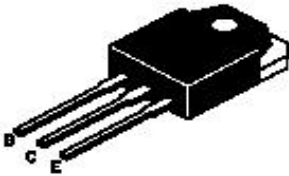
\*\*Pulse test: Pulse width 300ms, Duty cycle  $\leq 2\%$

TIP33\_34Rev110706E

## HIGH POWER TRANSISTORS

TIP33, A, B, C NPN  
TIP34, A, B, C PNP

TO- 3PN Non Isolated  
Plastic Package



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

#### DYNAMIC CHARACTERIS

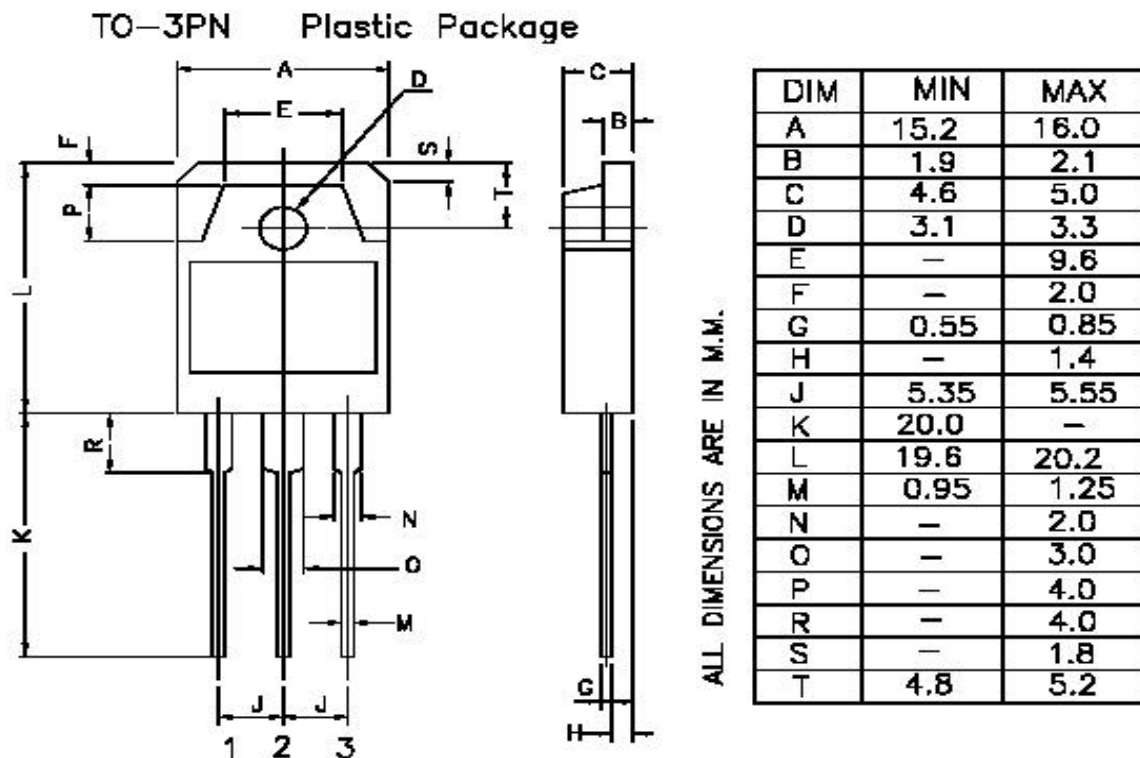
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Small Signal Current Gain	$h_{fe}$	$I_C=0.5\text{A}$ , $V_{CE}=10\text{V}$ , $f=1\text{kHz}$	20			
Current Gain Bandwidth Product	$***f_T$	$I_C=0.5\text{A}$ , $V_{CE}=10\text{V}$ , $f=1\text{MHz}$	3.0			MHz

$$***f_T = |h_{fe}| f_{\text{test}}$$

TIP33\_34Rev110706E

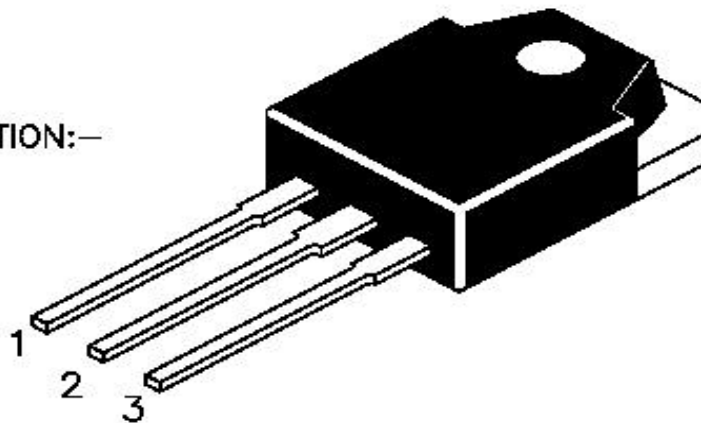
TIP33, A, B, C NPN  
TIP34, A, B, C PNP

TO-3PN Non Isolated  
Plastic Package



PIN CONFIGURATION:—

1. BASE
2. COLLECTOR
3. EMITTER



#### Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Detail	Net Weight/Qty.	Size	Qty.	Size	Qty.	Gr. Wt.
TO-3PN	100pcs/polybag	639gm/100pcs	3"X7.5"X7.5"	0.3K	18"X15"X9"	3K	21kgs

## **Component Disposal Instructions**

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

## **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 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 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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