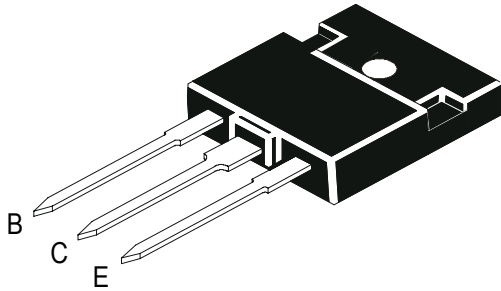




NPN POWER TRANSISTORS

TIP33F, 33AF, 33BF, 33CF
TIP 34F,34AF, 34BF, 34CF



TO -3P
Plastic Package

Complementary TIP34F, 34AF, 34BF, 34CF

General Purpose Power Amplifier and Switching Applications.

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

DESCRIPTION	SYMBOL	33F	33AF	33BF	33CF	UNITS
		34F	34AF	34BF	34CF	
Collector -Base Voltage(open emitter)	V_{CBO}	>40	>60	>80	>100	V
Collector -Emitter Voltage(open base)	V_{CEO}	>40	>60	>80	>100	V
Emitter Base Voltage(open collector)	V_{EBO}			<5.0		V
Collector Current	I_C			<10		A
Collector Current (Peak Valule) (1)	I_C			<15		A
Base Current	I_B			<3.0		A
Total Power Dissipation upto Tc=25° C	P_{tot}			<80		W
Derate above 25°C				<0.64		W/°C
Junction Temperature	T_j			<150		°C
Storage Temperature	T_{stg}			-55 to +150		°C
THERMAL RESISTANCE						
Junction to Case	$R_{th(j-c)}$			1.56		°C/W
Junction to Ambient	$R_{th(j-a)}$			35.7		°C/W

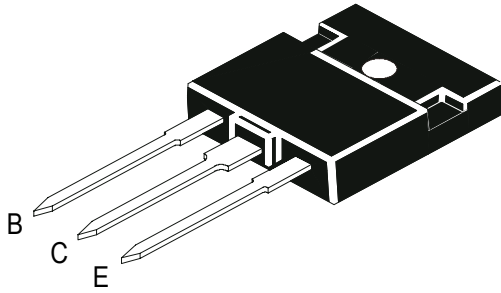
ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	33F	33AF	33BF	33CF	UNITS
		34F	34AF	34BF	34CF	
Collector Cut off Current	I_{CEO} $V_{CE}=30V, I_B=0$	<0.7	<0.7			mA
	I_{CEO} $V_{CE}=60V, I_B=0$			<0.7	<0.7	mA
	I_{CES} $V_{EB}=0, V_{CE} = \text{Rated } V_{CEO}$			< 0.4		mA
Emitter Cut off Current	I_{EBO} $V_{EB}=5V, I_C=0$			<1.0		mA
Breakdown Voltages						
	$V_{CEO(sus)}^*$ $I_C=30mA, I_B=0$	>40	<60	<80	<100	V
	V_{CBO} $I_C=1mA, I_E=0$	>40	<60	<80	<100	V
	V_{EBO} $I_E=1mA, I_C=0$			>5.0		V
Saturation Voltages						
	$V_{CE(sat)}^*$ $I_C=3A, I_B=0.3A$			<1.0		V
	$V_{CE(sat)}^*$ $I_C=10A, I_B=2.5A$			<4.0		V

NPN POWER TRANSISTORS

TIP33F, 33AF, 33BF, 33CF
TIP 34F,34AF, 34BF, 34CF

TO -3P
Plastic Package



DESCRIPTION	SYMBOL	33F	33AF	33BF	33CF	UNITS
		34F	34AF	34BF	34CF	
Base Emitter on Voltage	$V_{BE (on)}^*$	$I_C=3A, V_{CE}=4V$		<1.6		V
	$V_{BE (on)}^*$	$I_C=10A, V_{CE}=4V$		<3.0		V
DC Current Gain	h_{FE}^*	$I_C =1A, V_{CE} =4V$		>40		
		$I_C =3A, V_{CE} =4V$		>20		
Small Signal Current Gain	$ h_{fe} $	$I_C =0.5A, V_{CE}=10V,$ $f=1KHz$		>20		
Transition frequency at $f= 1MHz$	$f_T^{(2)}$	$I_C=0.5A, V_{CE}=10V$		>3.0		MHz

* Pulse test : Pulse width = 30 μ s, duty cycle \leq 2%

(1) Pulse test : Pulse with = 10ms, duty cycle < 10%

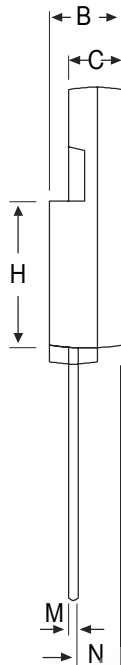
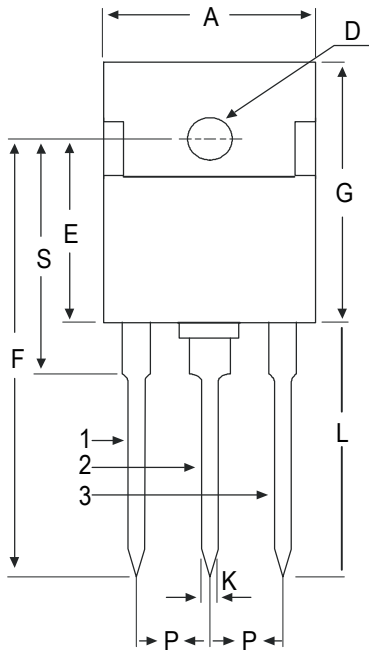
(2) $f_T = |h_{fe}| \cdot f_{test}$

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TIP33F, 33AF, 33BF, 33CF
TIP 34F,34AF, 34BF, 34CF

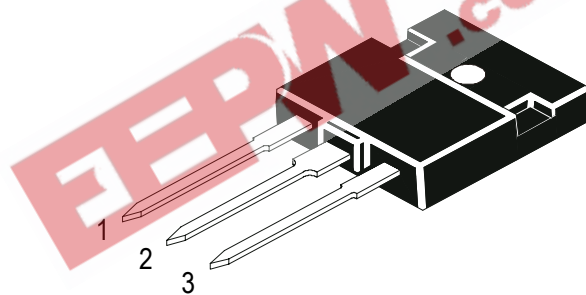
TO -3P
Plastic Package

TO-3P (TO-218) Plastic Package



DIM	MIN	MAX
A	15.80	16.40
B	5.20	5.70
C	3.80	4.20
D	Ø 3.30	Ø 3.60
E	14.50	15.10
F	33.25	36.75
G	20.75	21.25
H	11.50	12.25
K	1.00	1.30
L	18.75	21.65
M	0.40	0.60
N	3.15	3.45
P	5.21	5.72
S	18.75	19.25

All diminsions in mm.



Pin Configuration

1. Base
2. Collector
3. Emitter

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-3P	100 pcs/polybag	628 gm/100 pcs	3" x 7.5" x 7.5"	0.3K	17" x 15" x 13.5"	4.8K	42 kgs