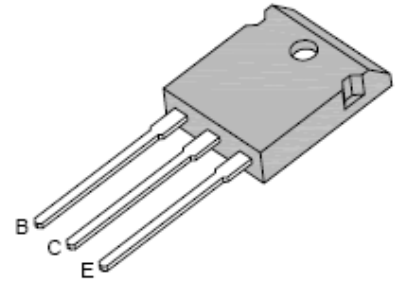


## Power Transistor (NPN)

### Features

- Designed for use in general purpose power amplifier and switching applications



TO-3P

### Mechanical Data

<b>Case:</b>	TO-3P, Plastic Package
<b>Terminals:</b>	Plated leads solderable per MIL-STD-750, Method 2026
<b>Weight:</b>	0.22 ounce, 6.2 gram

### Maximum Ratings ( $T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	TIP35C	Unit
<b>V<sub>CB0</sub></b>	Collector-Base Voltage	100	V
<b>V<sub>CEO</sub></b>	Collector-Emitter Voltage	100	V
<b>V<sub>EB0</sub></b>	Emitter-Base Voltage	5.0	V
<b>I<sub>C</sub></b>	Collector Current Continuous	25	A
<b>I<sub>CM</sub></b>	Collector Current Peak	40	A
<b>I<sub>B</sub></b>	Base Current	5.0	A
<b>P<sub>D</sub></b>	Power Dissipation @ $T_C=25^{\circ}C$ Derate above $25^{\circ}C$	125	W
		1.0	W/ $^{\circ}C$
<b>T<sub>J</sub>, T<sub>STG</sub></b>	Operating Junction and Storage Temperature Range	-65 to +150	$^{\circ}C$

### Thermal Characteristics ( $T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	Max.	Unit
<b>R<sub>θJC</sub></b>	Thermal Resistance from Junction to Case	1.0	$^{\circ}C/W$

# Power Transistor (NPN)

## TIP35C

### Electrical Characteristics ( $T_{Ambient}=25^{\circ}\text{C}$ unless noted otherwise)

#### Off Characteristics

Symbol	Description	Min.	Max.	Unit	Conditions
$V_{CE(sus)}$	Collector-Emitter Sustaining Voltage (Note)	100	-	V	$I_C=30\text{mA}$ , $I_B=0$
$I_{CEO}$	Collector Cut-off Current	-	1.0	mA	$V_{CE}=60\text{V}$ , $I_B=0$
$I_{CES}$	Collector Cut-off Current	-	0.7	mA	$V_{CE}=100\text{V}$ , $V_{EB}=0$
$I_{EBO}$	Emitter Cut-off Current	-	1.0	mA	$V_{EB}=5\text{V}$ , $I_C=0$

#### ON Characteristics (Note)

Symbol	Description	Min.	Max.	Unit	Conditions
$h_{FE}$	DC Current Gain	25	-		$V_{CE}=4\text{V}$ , $I_C=1.5\text{A}$
		15	75		$V_{CE}=4\text{V}$ , $I_C=15\text{A}$
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	-	1.8	V	$I_C=15\text{A}$ , $I_B=1.5\text{A}$
		-	4.0	V	$I_C=25\text{A}$ , $I_B=5\text{A}$
$V_{BE(on)}$	Base-Emitter On Voltage	-	2.0	V	$I_C=15\text{A}$ , $V_{CE}=4\text{V}$
		-	4.0	V	$I_C=25\text{A}$ , $V_{CE}=4\text{V}$

#### Dynamic Characteristics

Symbol	Description	Min.	Max.	Unit	Conditions
$f_T$	Current Gain-Bandwidth Product	3.0	-	MHz	$V_{CE}=10\text{V}$ , $I_C=1\text{A}$ , $f_{TEST}=1\text{MHz}$ , $f_T= h_{fe}  \cdot f_{TEST}$
$h_{fe}$	Small Signal Current Gain	25	-		$V_{CE}=10\text{V}$ , $I_C=1\text{A}$ , $f=1\text{KHz}$

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

### Typical Characteristics Curves

Fig.1- Power Derating

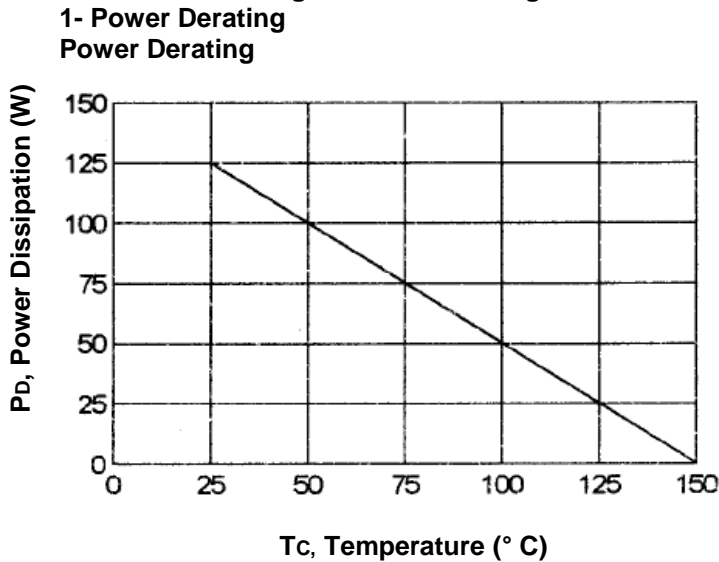


Fig.2- DC Current Gain

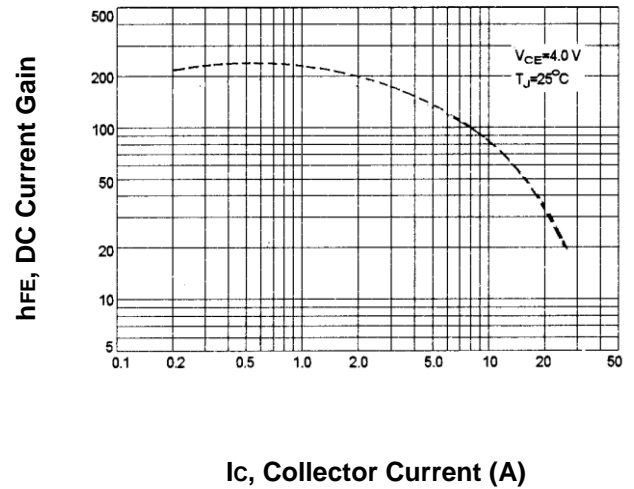


Fig.3 Turn-off Time-

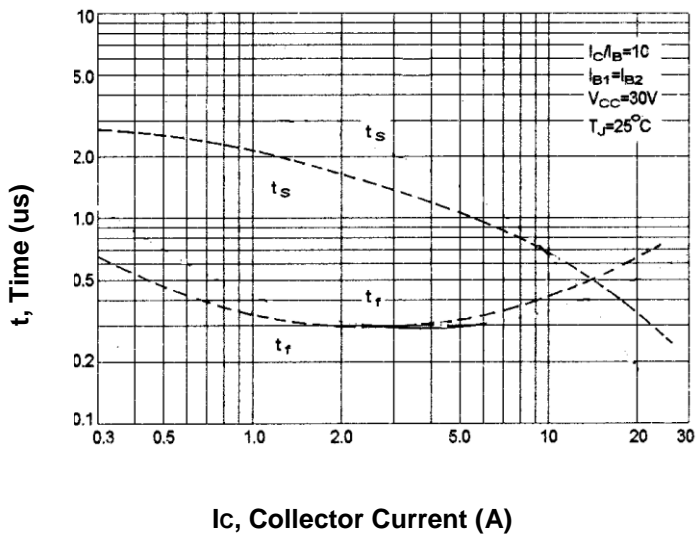
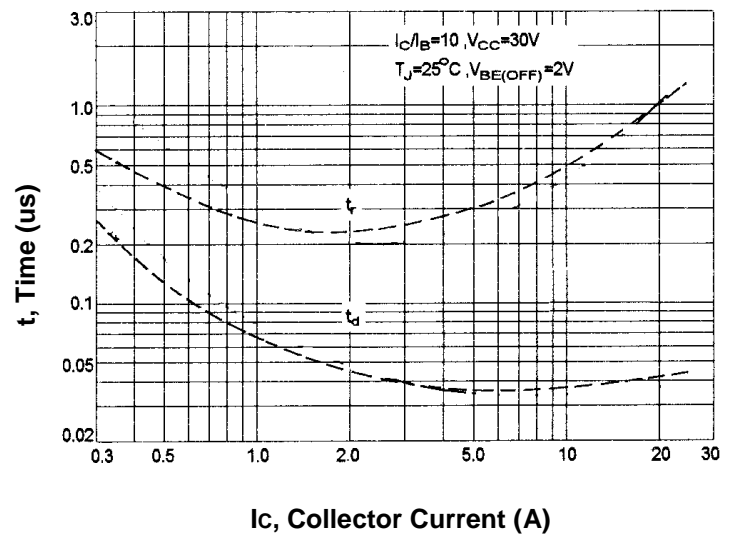


Fig.4 Turn-on Time-



# Power Transistor (NPN)

## TIP35C

Fig.5 Reverse Base Safe Operating Area -

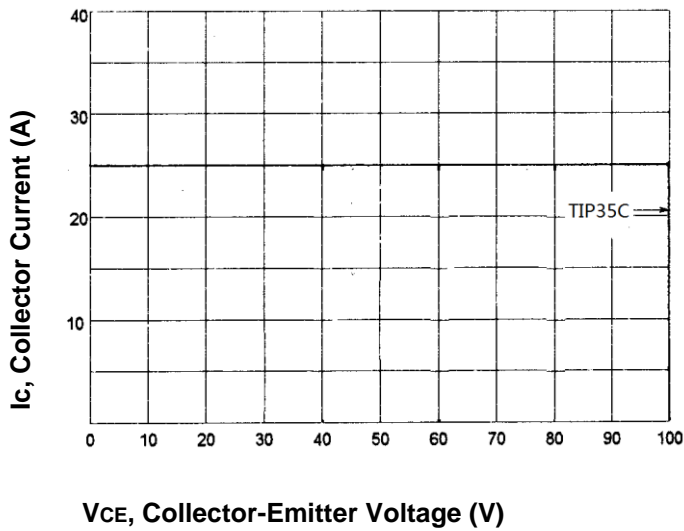
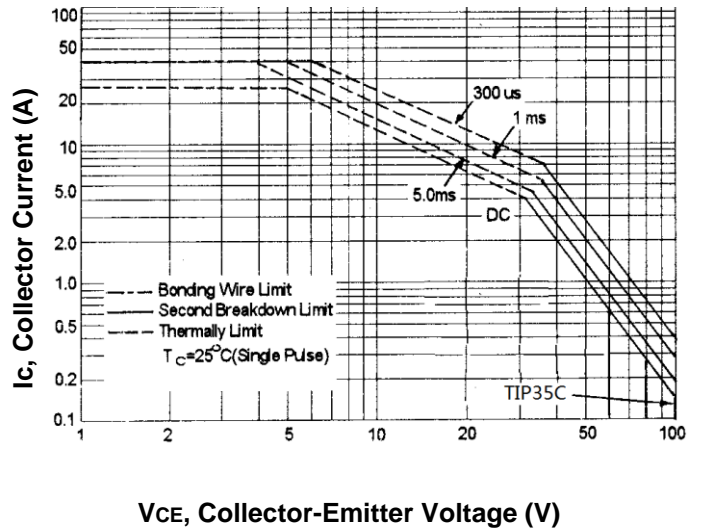
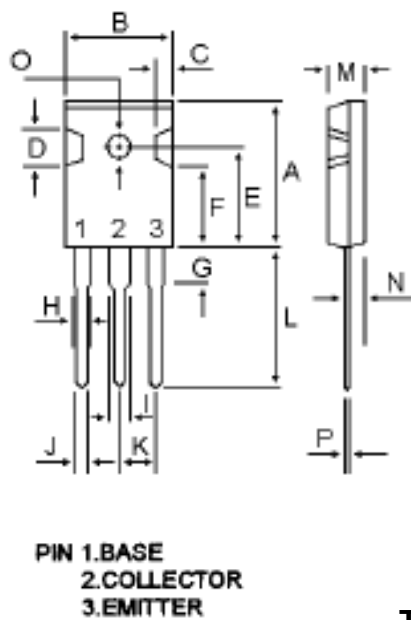


Fig.6 Active Region Safe Operating Area -



### Dimensions in mm



TO-3P

DIM	MILLIMETERS	
	MIN	MAX
A	20.63	22.38
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.81	15.22
F	11.72	12.84
G	4.20	4.50
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.50	21.50
M	4.68	5.36
N	2.40	2.80
O	3.25	3.65
P	0.55	0.70

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