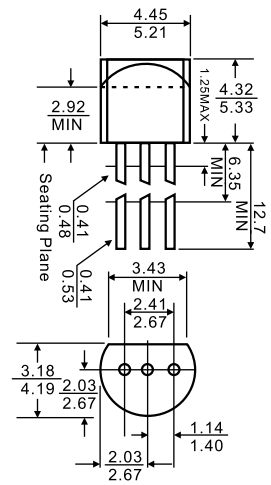




1.EMITTER  
2.COLLECTOR  
3.BASE

### TO-92



Dimensions in inches and (millimeters)

## Features

- ◇ Power dissipation

### MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
$V_{CB0}$	Collector-Base Voltage	-50	V
$V_{CEO}$	Collector-Emitter Voltage	-50	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current -Continuous	-150	mA
$P_D$	Collector Power Dissipation	400	mW
$T_j$	Junction Temperature	125	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55-125	$^\circ\text{C}$

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

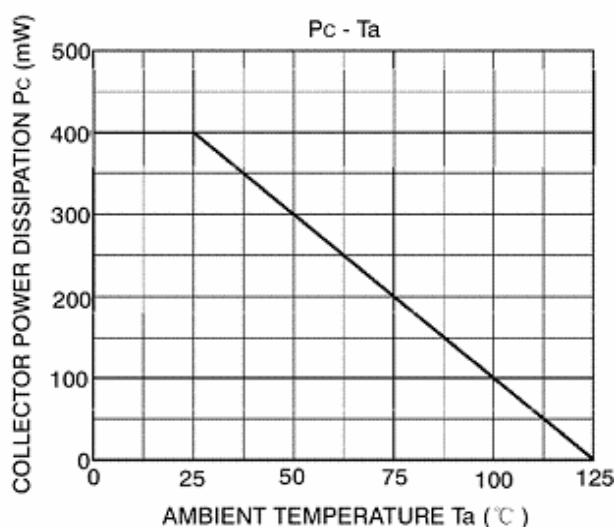
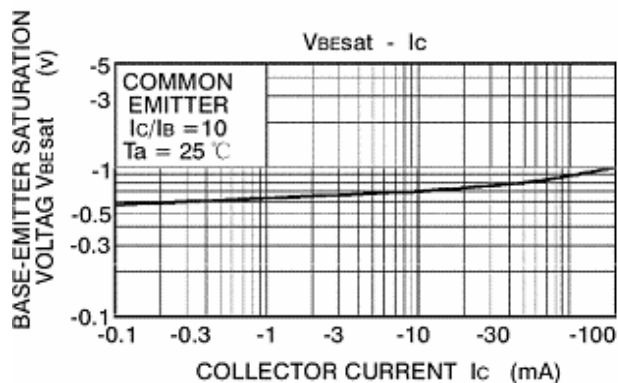
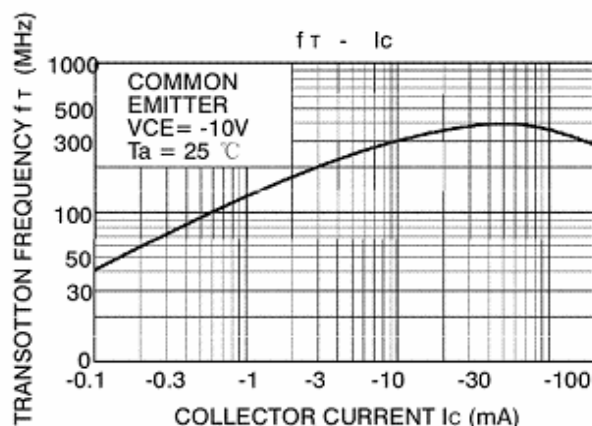
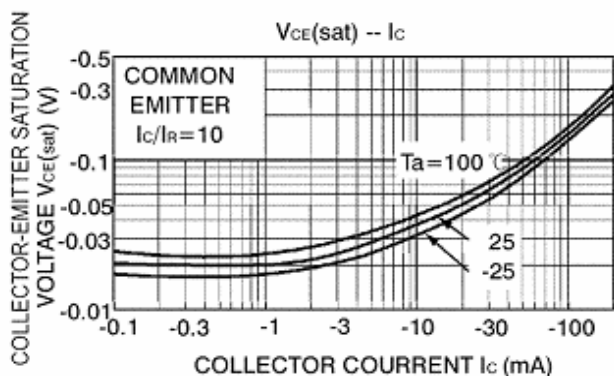
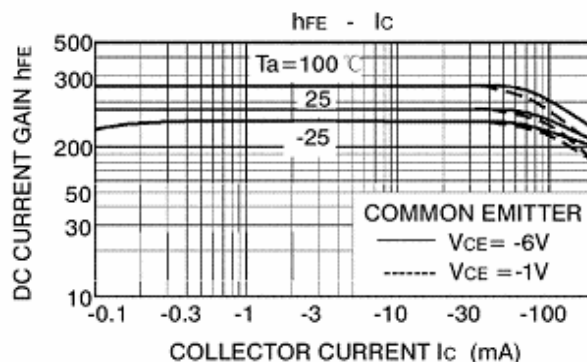
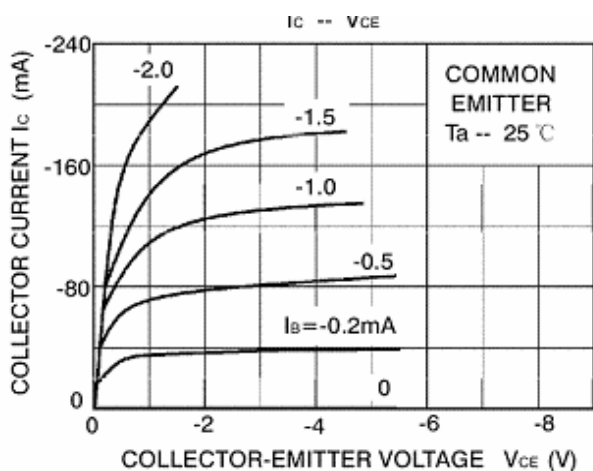
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}, I_E = 0$	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -0.1\text{mA}, I_B = 0$	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -100\mu\text{A}, I_C = 0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -50\text{V}, I_E = 0$			-0.1	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE} = -50\text{V}, I_B = 0$			-0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5\text{V}, I_C = 0$			-0.1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE} = -6\text{V}, I_C = -2\text{mA}$	70		400	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100\text{mA}, I_B = -10\text{mA}$			-0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -100\text{mA}, I_B = -10\text{mA}$			-1.1	V
Transition frequency	$f_T$	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$ $f = 30\text{MHz}$	80			MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$			7	pF
Noise Figure	NF	$V_{CE} = -6\text{V}, I_C = -0.1\text{mA}$ $f = 1\text{KHz}, R_G = 10\text{K}$			6	dB

### CLASSIFICATION OF $h_{FE}$

Rank	O	Y	GR
Range	70-140	120-240	200-400



### Typical Characteristics



Package	Packing	Quantity	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	Bulk	1000pcs/BP	10,000pcs	245×170×100	100,000pcs	525×375×270
TO-92	Tape	2000pcs/TP	2000pcs	333×162×43	20,000pcs	350×340×250