



1. EMITTER
2. BASE
3. COLLECTOR

### Features

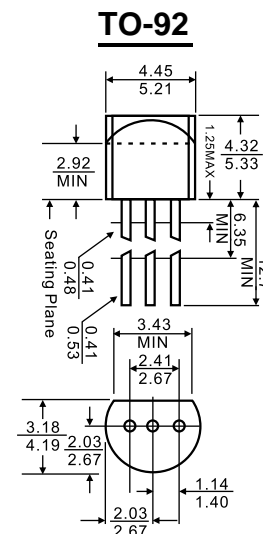
✧ **Power dissipation**

$P_{CM} : 1 \text{ W}$  ( $T_A=25^\circ\text{C}$ )

$: 2 \text{ W}$  ( $T_C=25^\circ\text{C}$ )

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	40	V
$V_{CEO}$	Collector-Emitter Voltage	25	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	1.5	A
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^\circ\text{C}$



Dimensions in inches and (millimeters)

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

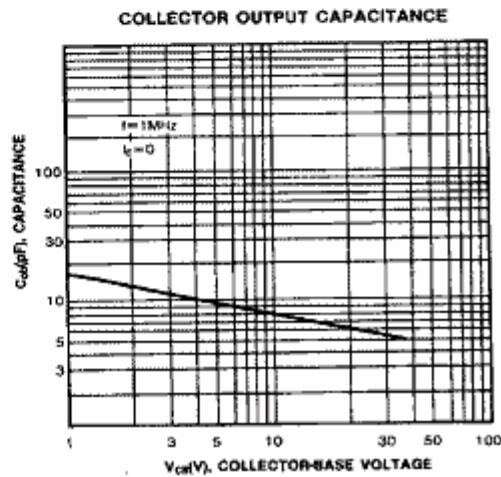
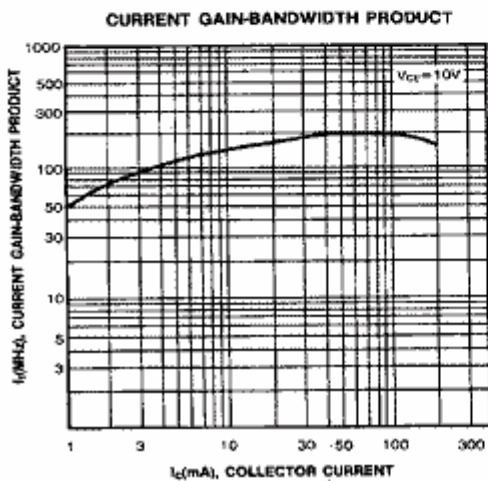
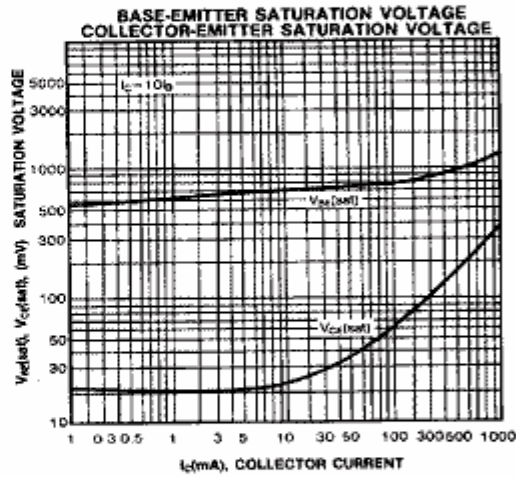
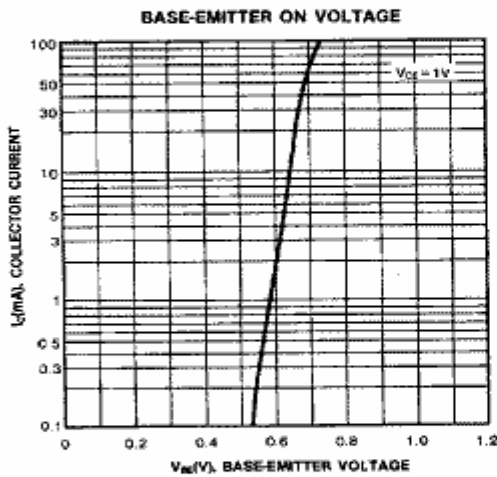
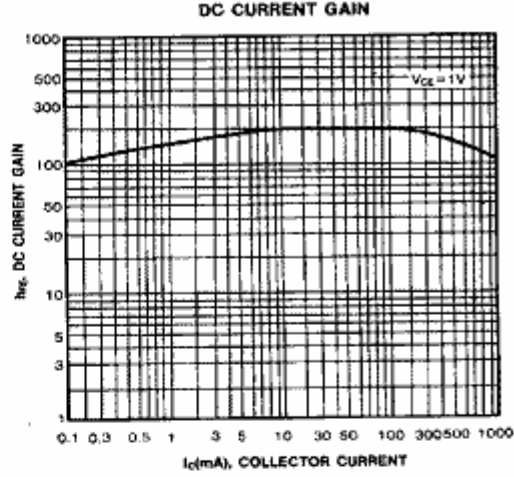
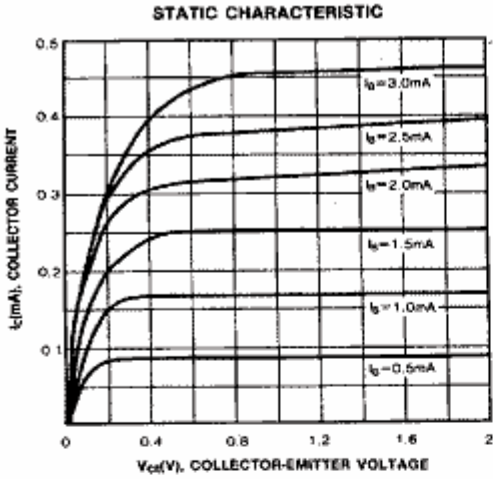
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$ , $I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=0.1\text{mA}$ , $I_B=0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$ , $I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=40\text{V}$ , $I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{CEO}$	$V_{CE}=20\text{V}$ , $I_E=0$			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	$h_{FE(1)}$	$V_{CE}=1\text{V}$ , $I_C=100\text{mA}$	85		400	
	$h_{FE(2)}$	$V_{CE}=1\text{V}$ , $I_C=800\text{mA}$	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=800\text{mA}$ , $I_B=80\text{mA}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=800\text{mA}$ , $I_B=80\text{mA}$			1.2	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=1\text{V}$ , $I_C=10\text{mA}$			1	V
Transition frequency	$f_T$	$V_{CE}=10\text{V}$ , $I_C=50\text{mA}$ , $f=30\text{MHz}$	100			MHz

### CLASSIFICATION OF $h_{FE(1)}$

Rank	B	C	D	D3
Range	85-160	120-200	160-300	300-400



## 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