

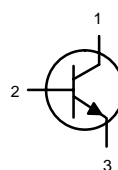
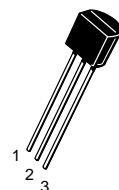
RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

TO-92

**FEATURES**

- \* High voltage
- \* High Reliability



- 1. EMITTER
- 2. BASS
- 3. COLLECTOR

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	400	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	0.2	A
$P_C$	Collector Dissipation	0.625	W
$T_J, T_{stg}$	Junction and Storage Temperature	-55 to +150	$^{\circ}\text{C}$

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

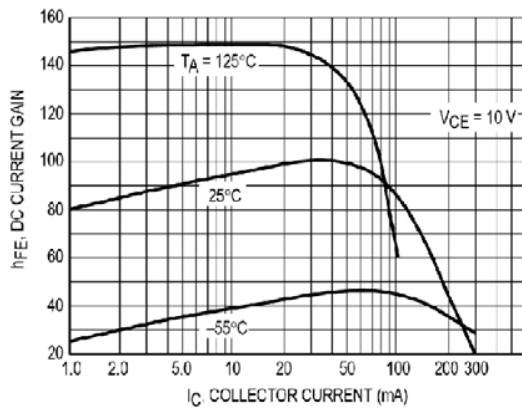
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V(BR)_{CBO}$	$I_C=100\mu\text{A}, I_E=0$	400			V
Collector-emitter breakdown voltage	$V(BR)_{CEO}$	$I_C=1\text{ mA}, I_B=0$	400			V
Emitter-base breakdown voltage	$V(BR)_{EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=400\text{ V}, I_E=0$			0.1	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE}=400\text{ V}$			5	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4\text{ V}, I_C=0$			0.1	$\mu\text{A}$
DC current gain	$H_{FE(1)}$	$V_{CE}=10\text{ V}, I_C=10\text{ mA}$	80		300	
	$H_{FE(2)}$	$V_{CE}=10\text{ V}, I_C=1\text{ mA}$	70			
	$H_{FE(3)}$	$V_{CE}=10\text{ V}, I_C=100\text{ mA}$	60			
	$H_{FE(4)}$	$V_{CE}=10\text{ V}, I_C=50\text{ mA}$	80			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=10\text{ mA}, I_B=1\text{ mA}$			0.2	V
	$V_{CE(sat)}$	$I_C=50\text{ mA}, I_B=5\text{ mA}$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=10\text{ mA}, I_B=1\text{ mA}$			0.75	V
Transition frequency	$f_T$	$V_{CE}=20\text{ V}, I_C=10\text{ mA}$ $f=30\text{ MHz}$	50			MHz

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

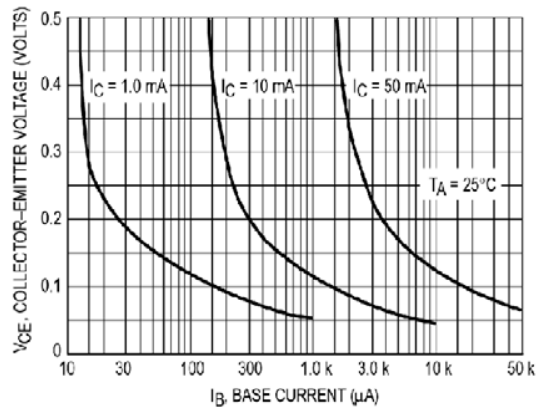
Rank	A	B1	B2	C
Range	80-100	100-150	150-200	200-300

**Typical Characteristics**

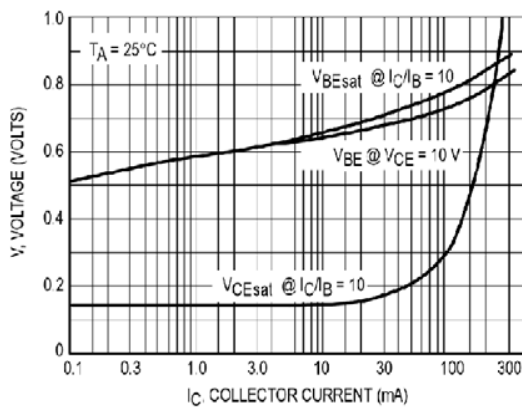
**A44**



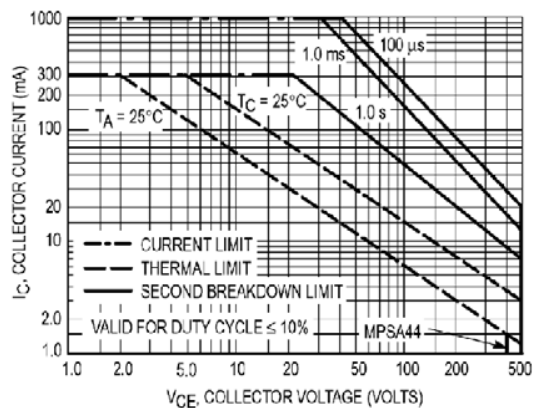
**DC Current Gain**



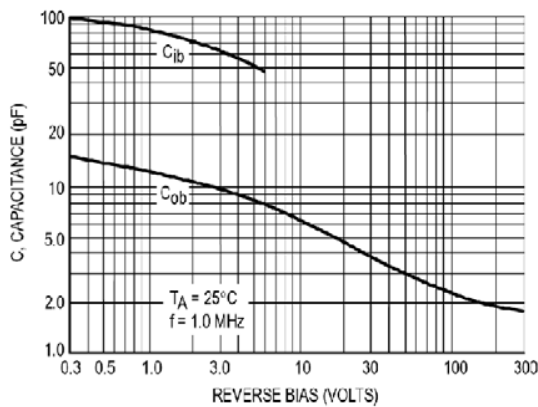
**Collector Saturation Region**



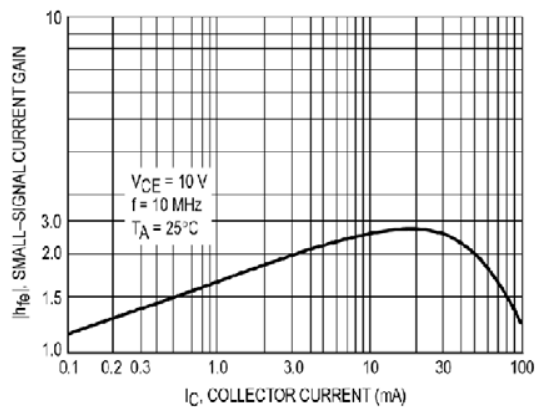
**"On" Voltages**



**Active Region — Safe Operating Area**

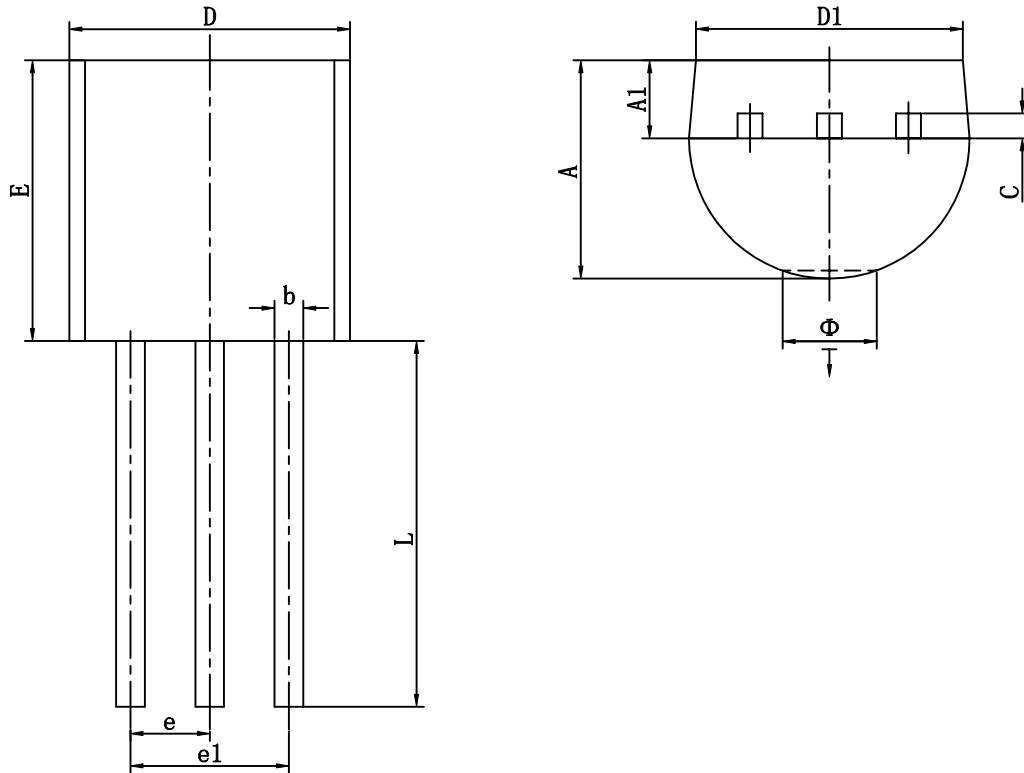


**Capacitance**



**High Frequency Current Gain**

● TO-92 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270TYP		0.050TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Ø		1.600		0.063
↓	0.000	0.380	0.000	0.015