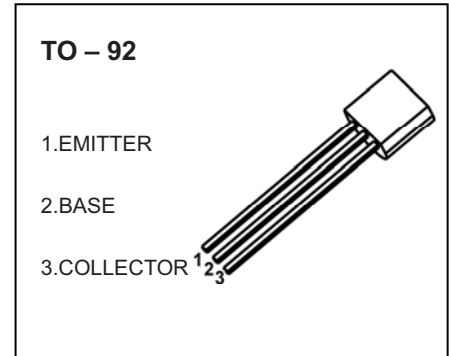
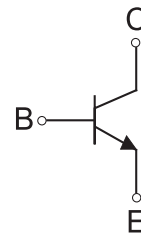


### FEATURES

- High Breakdown Voltage



### Equivalent Circuit



### ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
MPSA44	TO-92	Bulk	1000pcs/Bag
MPSA44-TA	TO-92	Tape	2000pcs/Box

### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	400	V
V <sub>CEO</sub>	Collector-Emitter Voltage	400	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>c</sub>	Collector Current -Continuous	0.3	A
P <sub>D</sub>	Collector Power Dissipation	625	mW
R <sub>θJA</sub>	Thermal Resistance from Junction to Ambient	200	°C /W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~+150	°C

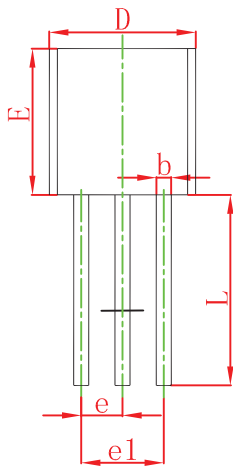
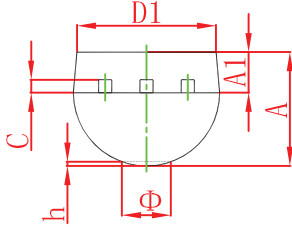
### ELECTRICAL CHARACTERISTICS

$T_a=25^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=0.1\text{mA}, I_E=0$	400			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=1\text{mA}, I_B=0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1\text{mA}, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=400\text{V}, I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}^*$	$V_{CE}=10\text{V}, I_C=1\text{mA}$	40			
	$h_{FE(2)}^*$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	50		200	
	$h_{FE(3)}^*$	$V_{CE}=10\text{V}, I_C=50\text{mA}$	45			
	$h_{FE(4)}^*$	$V_{CE}=10\text{V}, I_C=100\text{mA}$	40			
Collector-emitter saturation voltage	$V_{CE(sat)(1)}^*$	$I_C=1\text{mA}, I_B=0.1\text{mA}$			0.4	V
	$V_{CE(sat)(2)}^*$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.5	
	$V_{CE(sat)(3)}^*$	$I_C=50\text{mA}, I_B=5\text{mA}$			0.75	
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.75	V
Collector output capacitance	$C_{ob}$	$V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$			7	pF
Emitter input capacitance	$C_{ib}$	$V_{EB}=0.5\text{V}, I_C=0, f=1\text{MHz}$			130	pF

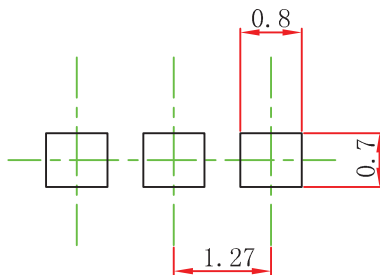
\*Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2.0\%$ .

TO-92 Package Outline Dimensions



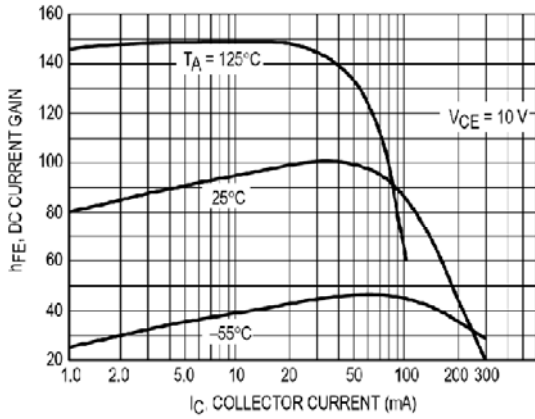
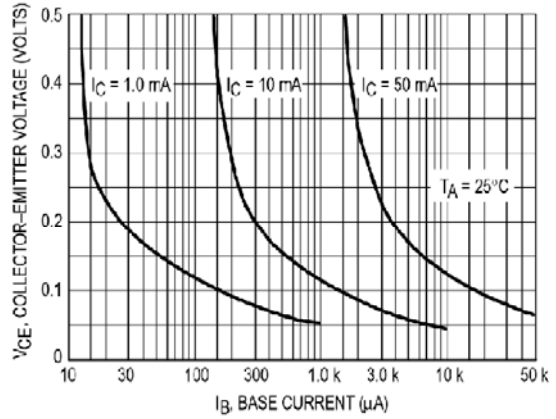
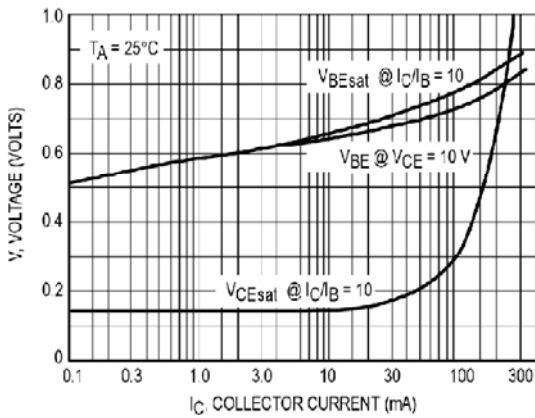
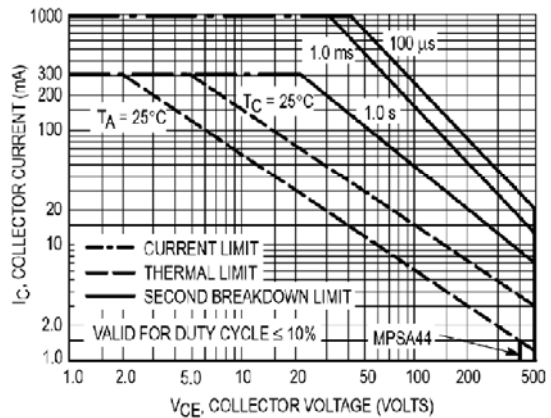
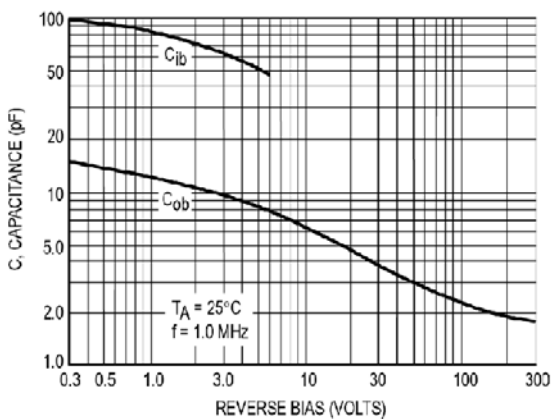
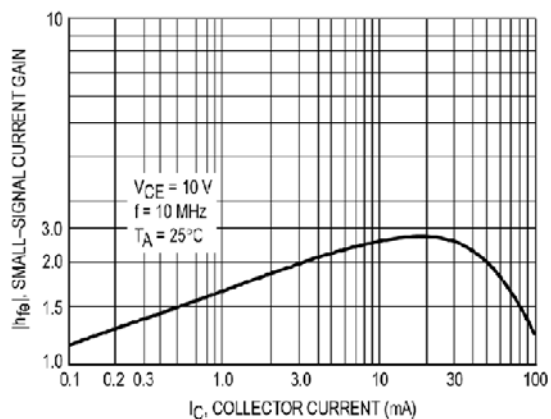
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100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

TO-92 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

**Typical Characteristics**

**DC Current Gain**

**Collector Saturation Region**

**"On" Voltages**

**Active Region — Safe Operating Area**

**Capacitance**

**High Frequency Current Gain**