



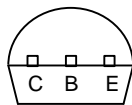
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# MPSA44

## Features

- Through Hole Package
- 150°C Junction Temperature

Pin Configuration  
Bottom View



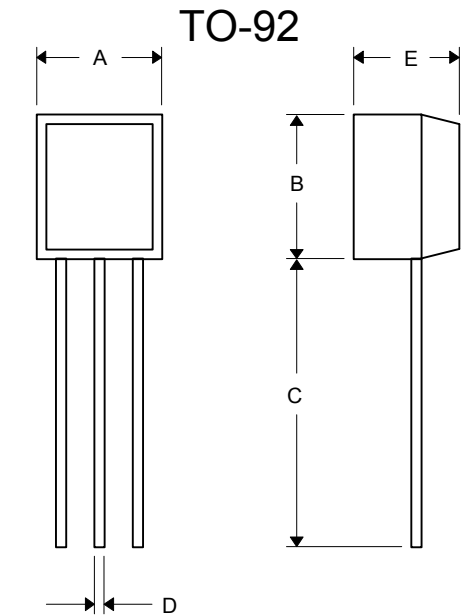
## NPN Silicon High Voltage Transistor 625mW

## Mechanical Data

- Case: TO-92, Molded Plastic
- Marking: A44

Maximum Ratings @ 25°C Unless Otherwise Specified

Charateristic	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	400	V
Collector-Base Voltage	$V_{CBO}$	400	V
Emitter-Base Voltage	$V_{EBO}$	5.0	V
Collector Current(DC)	$I_C$	200	mA
Power Dissipation@ $T_A=25^\circ\text{C}$	$P_d$	625 5.0	mW mW/°C
Power Dissipation@ $T_C=25^\circ\text{C}$	$P_d$	1.5 12	W mW/°C
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	200	°CW
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	°CW
Operating & Storage Temperature	$T_j, T_{STG}$	-55~150	°C



DIM	DIMENSIONS				NOTE
	INCHES		MM		
A	.175	.185	4.45	4.70	
B	.175	.185	4.46	4.70	
C	.500	---	12.7	---	
D	.016	.020	0.41	0.63	
E	.135	.145	3.43	3.68	
G	.095	.105	2.42	2.67	

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector–Emitter Breakdown Voltage <sup>(1)</sup> ( $I_C = 1.0\text{ mAdc}$ , $I_B = 0$ )	$V_{(BR)CEO}$	400	—	Vdc
Collector–Base Breakdown Voltage ( $I_C = 100\text{ }\mu\text{Adc}$ , $I_E = 0$ )	$V_{(BR)CBO}$	400	—	Vdc
Emitter–Base Breakdown Voltage ( $I_E = 100\text{ }\mu\text{Adc}$ , $I_C = 0$ )	$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current ( $V_{CB} = 300\text{ Vdc}$ , $I_E = 0$ )	$I_{CBO}$	—	0.1	$\mu\text{Adc}$
Emitter Cutoff Current ( $V_{EB} = 4.0\text{ Vdc}$ , $I_C = 0$ )	$I_{EBO}$	—	0.1	$\mu\text{Adc}$

**ON CHARACTERISTICS<sup>(1)</sup>**

DC Current Gain <sup>(1)</sup> ( $I_C = 1.0\text{ mAdc}$ , $V_{CE} = 10\text{ Vdc}$ ) ( $I_C = 10\text{ mAdc}$ , $V_{CE} = 10\text{ Vdc}$ ) ( $I_C = 100\text{ mAdc}$ , $V_{CE} = 10\text{ Vdc}$ )	$h_{FE}$	70 80 60	300	
Collector–Emitter Saturation Voltage <sup>(1)</sup> ( $I_C = 10\text{ mAdc}$ , $I_B = 1.0\text{ mAdc}$ ) ( $I_C = 50\text{ mAdc}$ , $I_B = 5.0\text{ mAdc}$ )	$V_{CE(sat)}$	— —	0.2 0.3	Vdc
Base–Emitter Saturation Voltage ( $I_C = 10\text{ mAdc}$ , $I_B = 1.0\text{ mAdc}$ )	$V_{BE(sat)}$	—	0.75	Vdc

**SMALL–SIGNAL CHARACTERISTICS**

Output Capacitance ( $V_{CB} = 20\text{ Vdc}$ , $I_E = 0$ , $f = 1.0\text{ MHz}$ )	$C_{obo}$	—	7.0	pF
Input Capacitance ( $V_{EB} = 0.5\text{ Vdc}$ , $I_C = 0$ , $f = 1.0\text{ MHz}$ )	$C_{ibo}$	—	130	pF
Small–Signal Current Gain ( $I_C = 10\text{ mAdc}$ , $V_{CE} = 10\text{ Vdc}$ , $f = 20\text{ MHz}$ )	$h_{fe}$	1.0	—	—

1. Pulse Test: Pulse Width  $\leq 300\text{ }\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

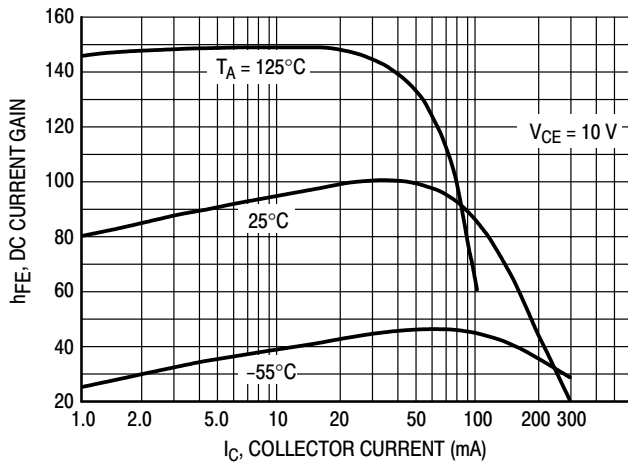


Figure 1. DC Current Gain

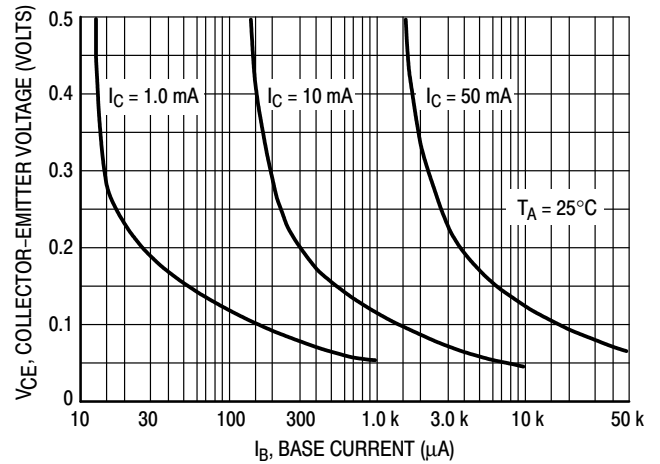


Figure 2. Collector Saturation Region

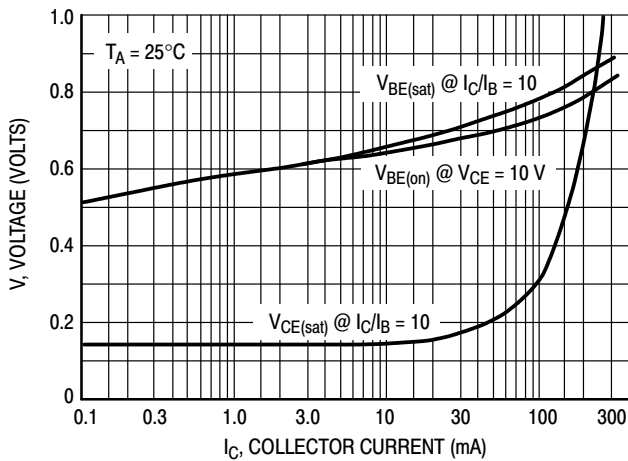


Figure 3. "On" Voltages

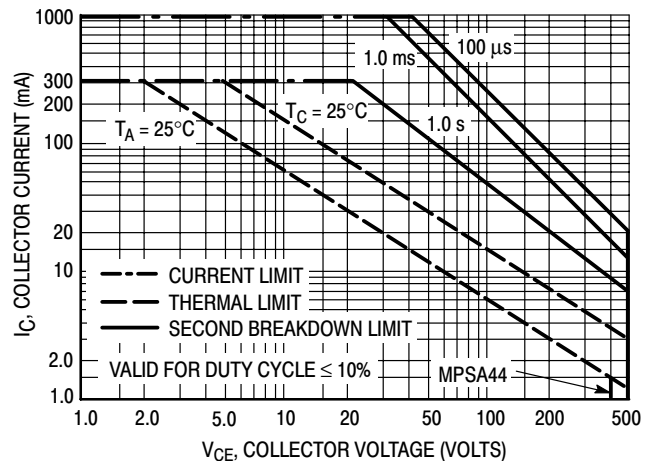


Figure 4. Active Region — Safe Operating Area

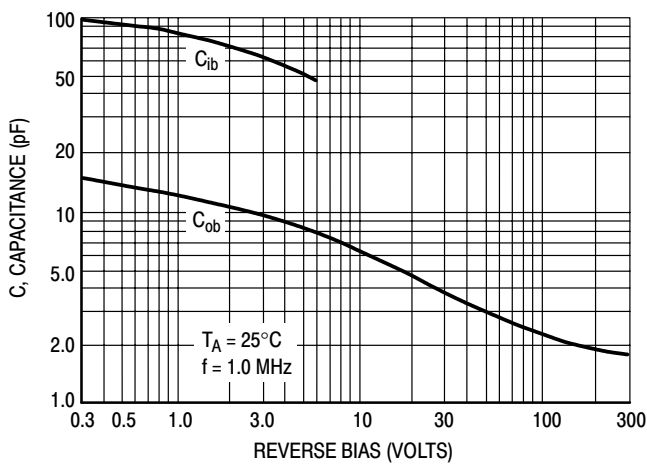


Figure 5. Capacitance