



MPSA44

NPN Silicon High Voltage Transistor 625mW

Features

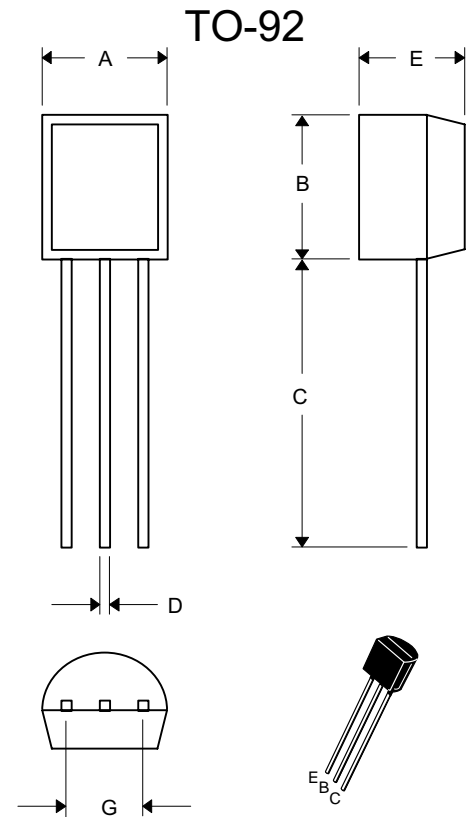
- Through Hole Package
- 150°C Junction Temperature
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

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	mW
		5.0	mW/°C
Power Dissipation@ $T_C=25^\circ\text{C}$	P_d	1.5	W
		12	mW/°C
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	200	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	°C/W
Operating & Storage Temperature	T_j, T_{STG}	-55~150	°C



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.170	.190	4.33	4.83	
B	.170	.190	4.30	4.83	
C	.550	.590	13.97	14.97	
D	.010	.020	0.36	0.56	
E	.130	.160	3.30	3.96	
G	.096	.104	2.44	2.64	

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector–Emitter Breakdown Voltage ⁽¹⁾ ($I_C = 1.0\text{ mA}$, $I_B = 0$)	$V_{(BR)CEO}$	400	—	Vdc
Collector–Base Breakdown Voltage ($I_C = 100\text{ }\mu\text{A}$, $I_E = 0$)	$V_{(BR)CBO}$	400	—	Vdc
Emitter–Base Breakdown Voltage ($I_E = 100\text{ }\mu\text{A}$, $I_C = 0$)	$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 400\text{ Vdc}$, $I_E = 0$)	I_{CBO}	—	0.1	μA
Emitter Cutoff Current ($V_{EB} = 4.0\text{ Vdc}$, $I_C = 0$)	I_{EBO}	—	0.1	μA

ON CHARACTERISTICS⁽¹⁾

DC Current Gain ⁽¹⁾ ($I_C = 1.0\text{ mA}$, $V_{CE} = 10\text{ Vdc}$) ($I_C = 10\text{ mA}$, $V_{CE} = 10\text{ Vdc}$) ($I_C = 50\text{ mA}$, $V_{CE} = 10\text{ Vdc}$) ($I_C = 100\text{ mA}$, $V_{CE} = 10\text{ Vdc}$)	h_{FE}	70 80 80 60	300	
Collector–Emitter Saturation Voltage ⁽¹⁾ ($I_C = 10\text{ mA}$, $I_B = 1.0\text{ mA}$) ($I_C = 50\text{ mA}$, $I_B = 5.0\text{ mA}$)	$V_{CE(sat)}$	— —	0.2 0.3	Vdc
Base–Emitter Saturation Voltage ($I_C = 10\text{ mA}$, $I_B = 1.0\text{ mA}$)	$V_{BE(sat)}$	—	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 ($I_C = 10\text{ mA}$, $V_{CE} = 10\text{ Vdc}$, $f = 20\text{ MHz}$)	h_{fe}	1.0	—	—

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

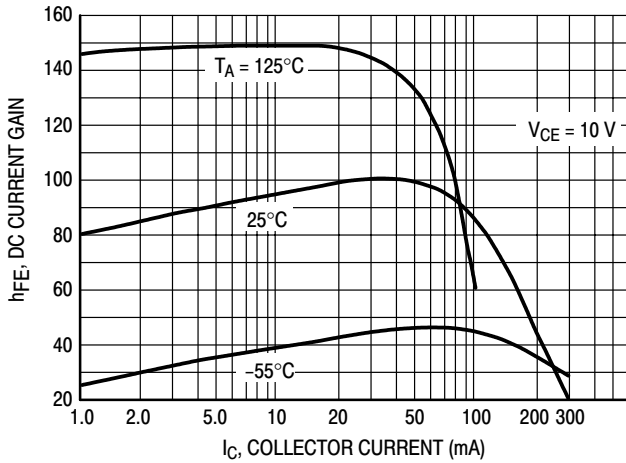


Figure 1. DC Current Gain

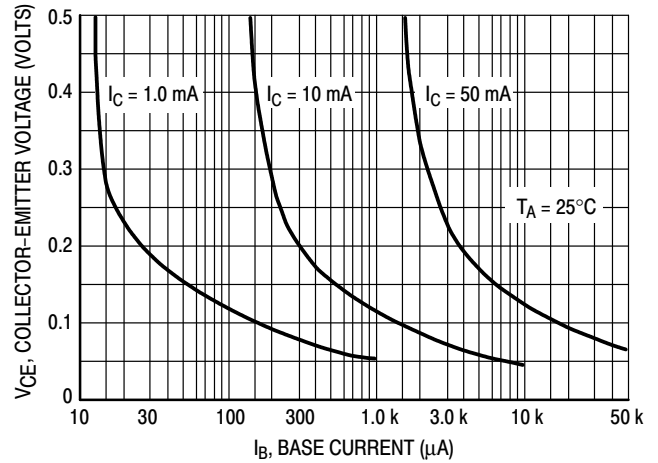


Figure 2. Collector Saturation Region

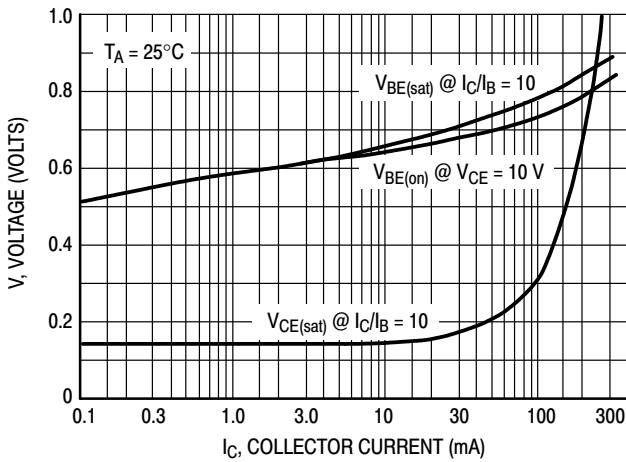


Figure 3. "On" Voltages

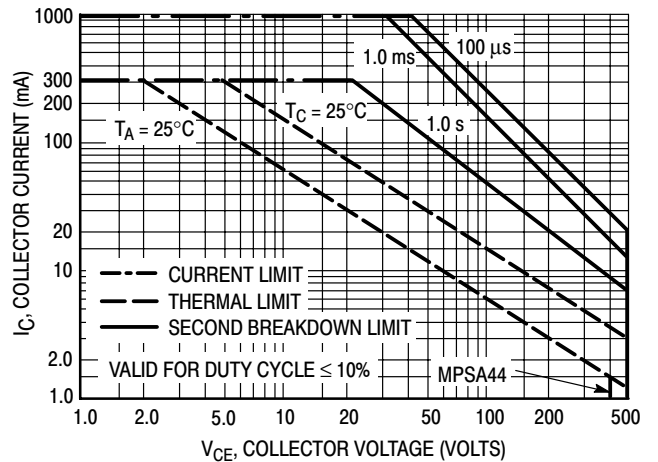


Figure 4. Active Region — Safe Operating Area

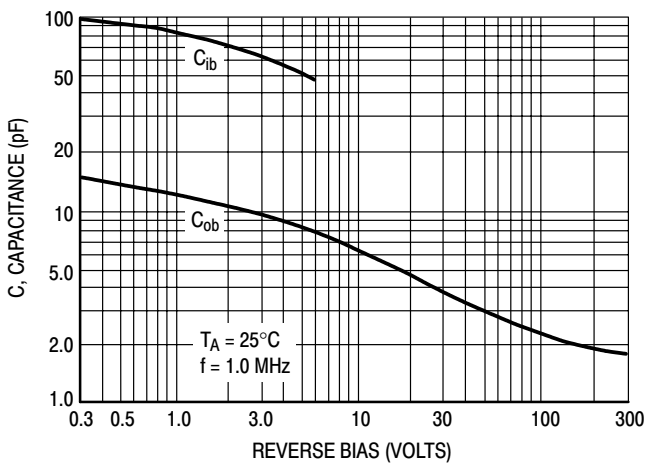


Figure 5. Capacitance



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Ordering Information :

Device	Packing
Part Number-AP	Ammo Packing: 2Kpcs/Ammo Box
Part Number-BP	Bulk: 100Kpcs/Carton

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