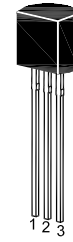


# MPSA44-HAF

## NPN Silicon Epitaxial Planar Transistor

As complementary type the PNP transistor MPSA94 is recommended.

On special request, these transistors can be manufactured in different pin configurations.



1. Emitter 2. Base 3. Collector  
TO-92 Plastic Package

### Features

- Halogen and Antimony Free(HAF), RoHS compliant

### Applications

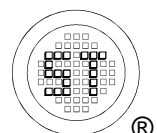
- For high voltage switching and amplifier

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	500	V
Collector Emitter Voltage	$V_{CEO}$	400	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	300	mA
Power Dissipation	$P_{tot}$	625	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

### Thermal Characteristics

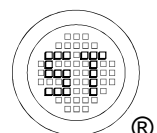
Parameter	Symbol	Value	Unit
Thermal Resistance from Junction Ambient	$R_{\theta JA}$	200	$^\circ\text{C/W}$



# MPSA44-HAF

## Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 10\text{ V}$ , $I_C = 1\text{ mA}$	$h_{FE}$	40	-	-
at $V_{CE} = 10\text{ V}$ , $I_C = 10\text{ mA}$	$h_{FE}$	50	200	-
at $V_{CE} = 10\text{ V}$ , $I_C = 50\text{ mA}$	$h_{FE}$	45	-	-
at $V_{CE} = 10\text{ V}$ , $I_C = 100\text{ mA}$	$h_{FE}$	40	-	-
Collector Base Cutoff Current at $V_{CB} = 400\text{ V}$	$I_{CBO}$	-	0.1	$\mu\text{A}$
Collector Emitter Cutoff Current at $V_{CE} = 400\text{ V}$	$I_{CES}$	-	0.5	$\mu\text{A}$
Emitter Base Cutoff Current at $V_{EB} = 4\text{ V}$	$I_{EBO}$	-	0.1	$\mu\text{A}$
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	500	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	400	-	V
Emitter Base Breakdown Voltage at $I_E = 100\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6	-	V
Collector Emitter Saturation Voltage at $I_C = 1\text{ mA}$ , $I_B = 0.1\text{ mA}$	$V_{CE(sat)}$	-	0.4	V
at $I_C = 10\text{ mA}$ , $I_B = 1\text{ mA}$		-	0.5	V
at $I_C = 50\text{ mA}$ , $I_B = 5\text{ mA}$		-	0.75	V
Base Emitter Saturation Voltage at $I_C = 10\text{ mA}$ , $I_B = 1\text{ mA}$	$V_{BE(sat)}$	-	0.75	V
Collector Output Capacitance at $V_{CB} = 20\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	7	pF



# MPSA44-HAF

## Electrical Characteristics Curves

Fig. 1 Power Derating Curve

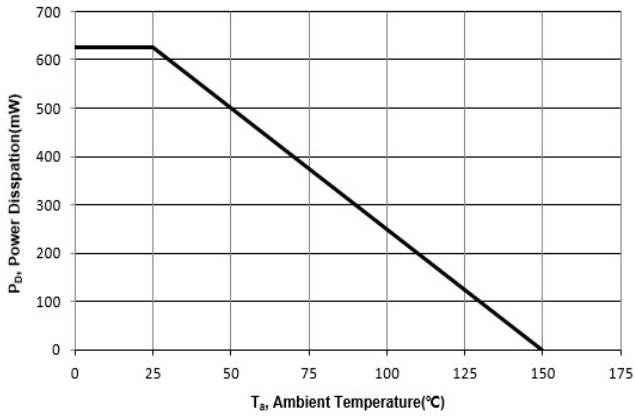


Fig. 2 Output Characteristics Curve

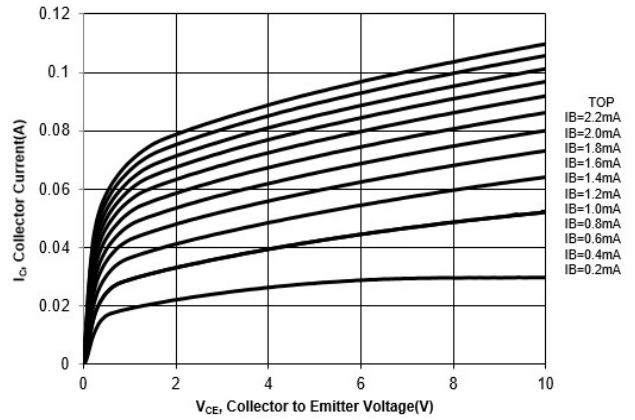


Fig. 3 Collector Current vs. Base to Emitter Voltage

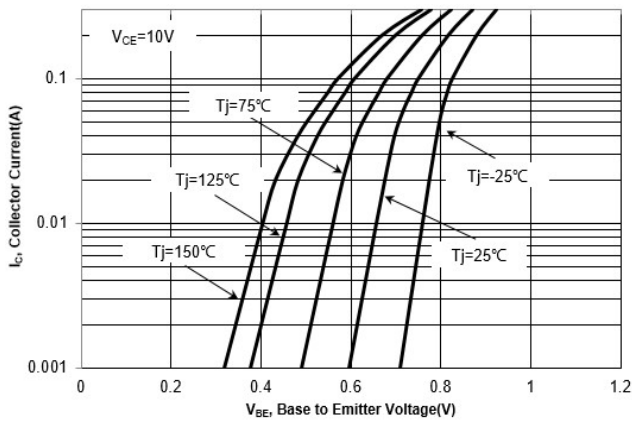
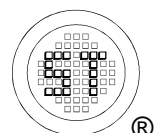
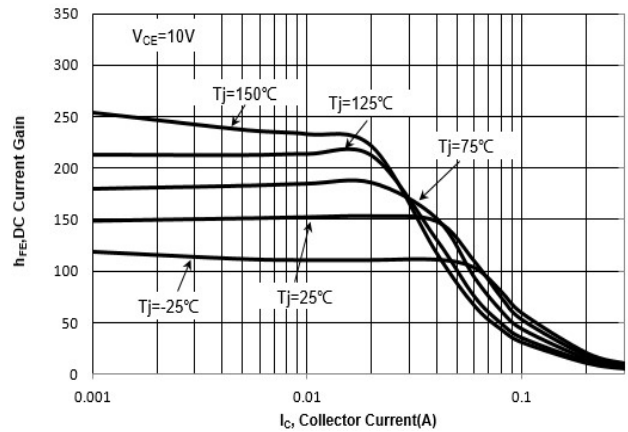


Fig. 4 DC Current Gain vs. Collector Current



# MPSA44-HAF

## Electrical Characteristics Curves

Fig. 5  $V_{BESAT}$  vs. Collector Current

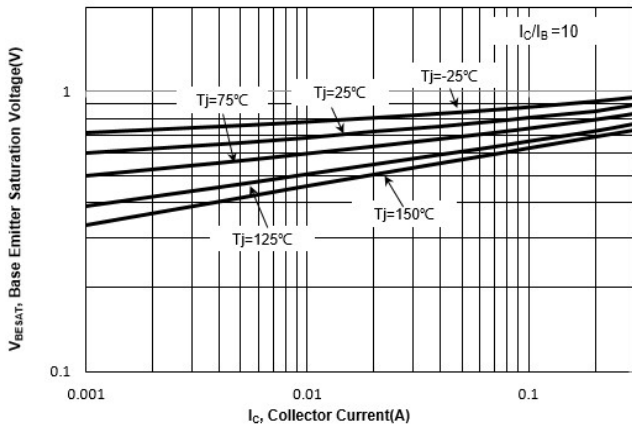


Fig. 6  $V_{CESAT}$  vs. Collector Current

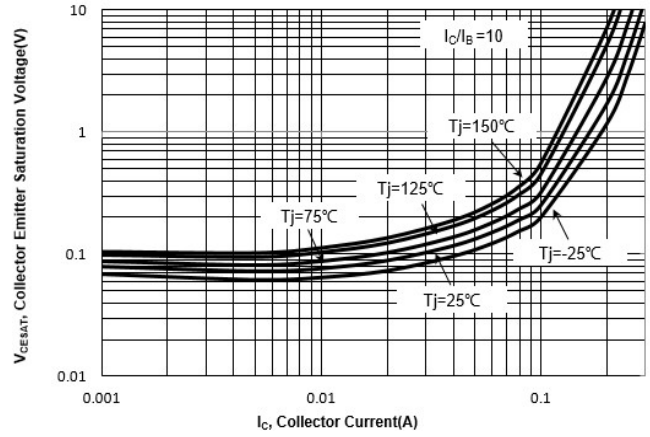


Fig. 7 Output Capacitance

