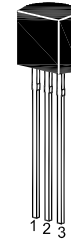


## MPSA42

### NPN Silicon Epitaxial Planar Transistor

for high voltage switching and amplifier applications.

complementary type the PNP transistor MPSA 92 and MPSA 93 is recommended.



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

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

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

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

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 10\text{ V}$ , $I_C = 1\text{ mA}$ at $V_{CE} = 10\text{ V}$ , $I_C = 10\text{ mA}$ at $V_{CE} = 10\text{ V}$ , $I_C = 30\text{ mA}$	$h_{FE}$ $h_{FE}$ $h_{FE}$	25 40 40	- - -	- - -
Collector Base Cutoff Current at $V_{CB} = 200\text{ V}$ at $V_{CB} = 160\text{ V}$	$I_{CBO}$	-	0.1	$\mu\text{A}$
Emitter Base Cutoff Current at $V_{EB} = 6\text{ V}$ at $V_{EB} = 4\text{ V}$	$I_{EBO}$	-	0.1	$\mu\text{A}$
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	300	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	300	-	V
Emitter Base Breakdown Voltage at $I_E = 100\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6	-	V
Collector Emitter Saturation Voltage at $I_C = 20\text{ mA}$ , $I_B = 2\text{ mA}$	$V_{CE(sat)}$	-	0.5	V
Base Emitter Saturation Voltage at $I_C = 20\text{ mA}$ , $I_B = 2\text{ mA}$	$V_{BE(sat)}$	-	0.9	V
Gain Bandwidth Product at $I_C = 10\text{ mA}$ , $V_{CE} = 20\text{ V}$ , $f = 100\text{ MHz}$	$f_T$	50	-	MHz
Collector Output Capacitance at $V_{CB} = 20\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	3	pF

MPSA42

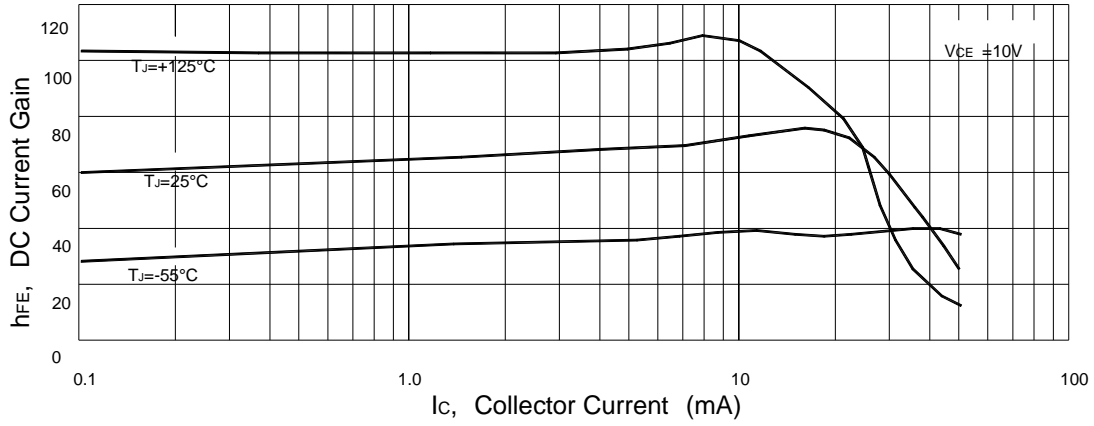


Figure 1. DC Current Gain

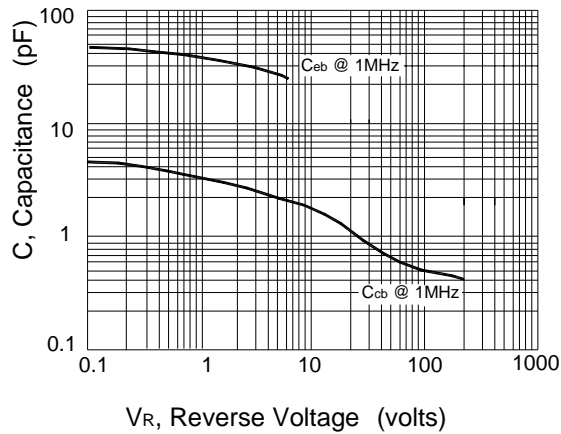


Figure 2. Capacitance

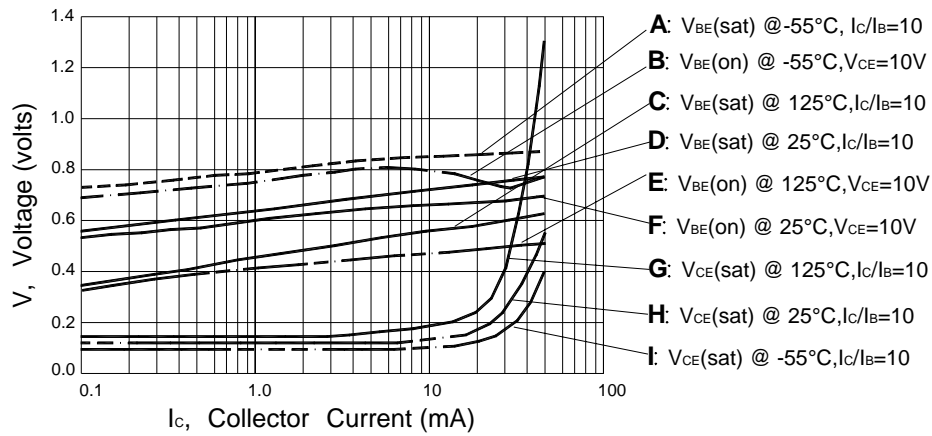


Figure 3. "on" Voltages