

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	MPSA42	V_{CBO}	300	V
	MPSA43		200	
Collector Emitter Voltage	MPSA42	V_{CEO}	300	V
	MPSA43		200	
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}	25	-	-
		h_{FE}	40	-	-
		h_{FE}	40	-	-
Collector Base Cutoff Current at $V_{CB} = 200\text{ V}$ at $V_{CB} = 160\text{ V}$	MPSA42	I_{CBO}	-	0.1	μA
	MPSA43		-	0.1	μA
Emitter Base Cutoff Current at $V_{EB} = 6\text{ V}$ at $V_{EB} = 4\text{ V}$	MPSA42	I_{EBO}	-	0.1	μA
	MPSA43		-	0.1	μA
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	MPSA42	$V_{(BR)CBO}$	300	-	V
	MPSA43		200	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	MPSA42	$V_{(BR)CEO}$	300	-	V
	MPSA43		200	-	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 $V_{CB} = 20\text{ V}$, $f = 1\text{ MHz}$	MPSA42	C_{ob}	-	3	pF
	MPSA43		-	4	pF

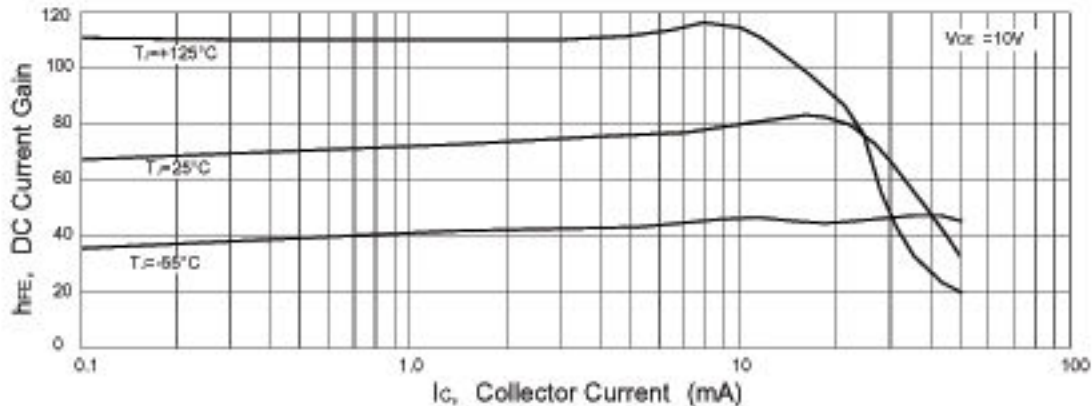


Figure 1. DC Current Gain

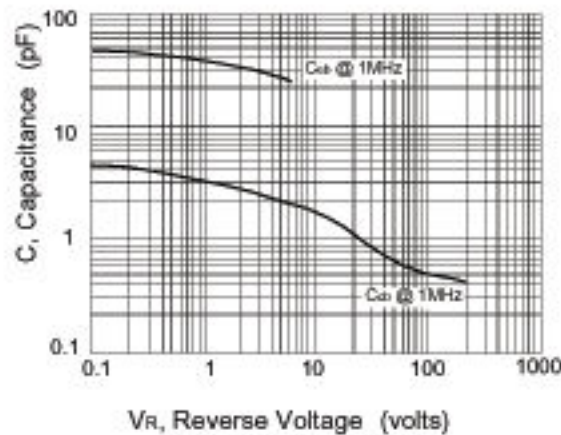


Figure 2. Capacitance

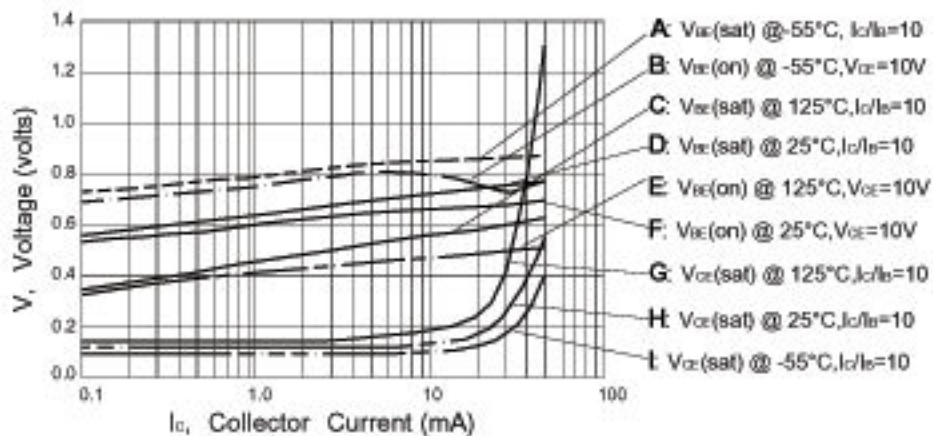


Figure 3. "on" Voltages