

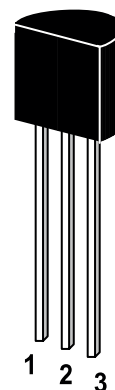
## MPSA 42 / 43

### NPN Silicon Epitaxial Planar Transistor

for high voltage switching and amplifier applications.

The transistor is subdivided into one group according to its DC current gain. As complementary type the PNP transistor MPSA 92 and MPSA 93 is recommended.

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



1. Emitter 2. Base 3. Collector

TO-92 Plastic Package  
Weight approx. 0.19g

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

	Symbol	Value		Unit
		MPSA 42	MPSA 43	
Collector Base Voltage	$V_{CBO}$	300	200	V
Collector Emitter Voltage	$V_{CEO}$	300	200	V
Emitter Base Voltage	$V_{EBO}$	6		V
Collector Current	$I_C$	500		mA
Total Device Dissipation @ $T_a=25^\circ\text{C}$	$P_{tot}$	625		mW
Derate above $25^\circ\text{C}$		5.0		mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_c=25^\circ\text{C}$	$P_{tot}$	1.5		W
Derate above $25^\circ\text{C}$		12		mW/ $^\circ\text{C}$
Junction Temperature	$T_j$	150		$^\circ\text{C}$
Storage Temperature Range	$T_s$	-55 to +150		$^\circ\text{C}$



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

		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $I_C=1\text{mA}, V_{CE}=10\text{V}$ at $I_C=10\text{mA}, V_{CE}=10\text{V}$ at $I_C=30\text{mA}, V_{CE}=10\text{V}$		$h_{FE}$	25	-	-	-
		$h_{FE}$	40	-	-	-
		$h_{FE}$	40	-	-	-
Emitter Cutoff Current at $V_{EB}=6\text{V}$ $V_{EB}=4\text{V}$	MPSA 42	$I_{EBO}$	-	-	0.1	$\mu\text{A}$
	MPSA 43	$I_{EBO}$	-	-	0.1	$\mu\text{A}$
Collector Cutoff Current at $V_{CB}=200\text{V}$ $V_{CB}=160\text{V}$	MPSA 42	$I_{CBO}$	-	-	0.1	$\mu\text{A}$
	MPSA 43	$I_{CBO}$	-	-	0.1	$\mu\text{A}$
Collector Base Breakdown Voltage at $I_C=100\mu\text{A}$	MPSA 42	$V_{(BR)CBO}$	300	-	-	V
	MPSA 43	$V_{(BR)CBO}$	200	-	-	V
Collector Emitter Breakdown Voltage at $I_C=1\text{mA}$	MPSA 42	$V_{(BR)CEO}$	300	-	-	V
	MPSA 43	$V_{(BR)CEO}$	200	-	-	V
Emitter Base Breakdown Voltage at $I_E=100\mu\text{A}$		$V_{(BR)EBO}$	6	-	-	V
Collector Saturation Voltage at $I_C=20\text{mA}, I_B=2\text{mA}$		$V_{CE(sat)}$	-	-	0.5	V
Base 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 $V_{CB}=20\text{V}, f=1\text{MHz}$	MPSA 42	$C_{ob}$	-	-	3	pF
	MPSA 43	$C_{ob}$	-	-	4	pF



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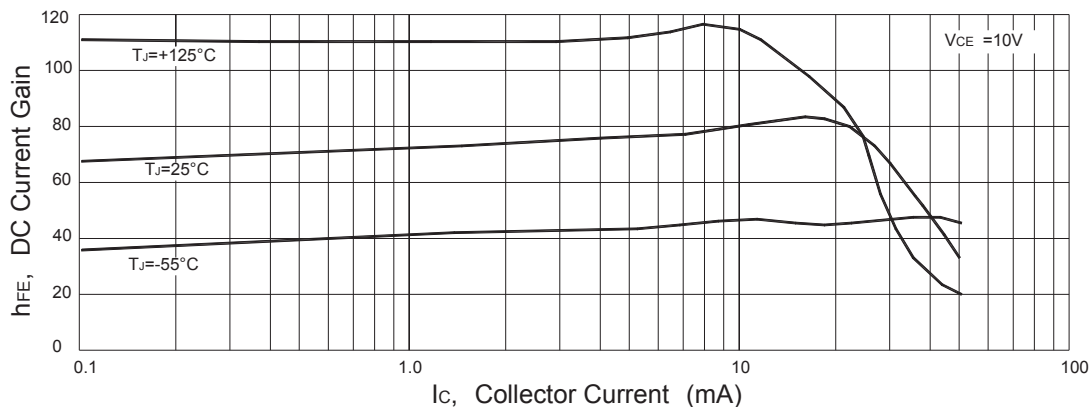


Figure 1. DC Current Gain

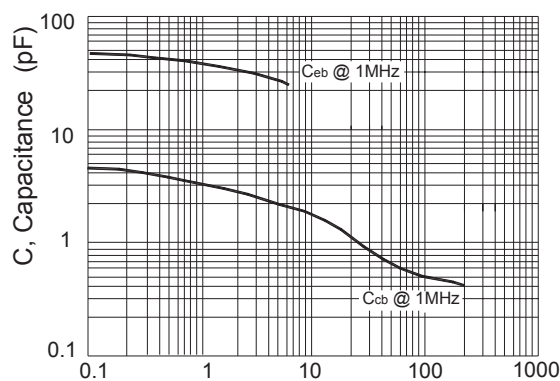


Figure 2. Capacitance

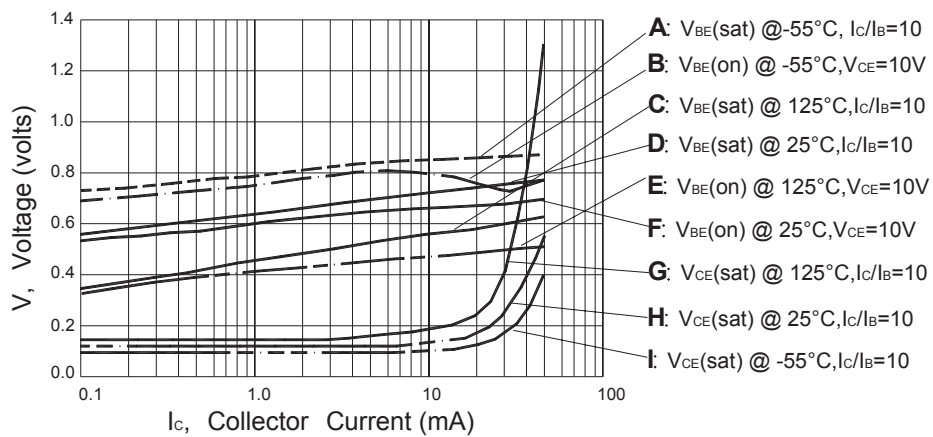


Figure 3. "on" Voltages