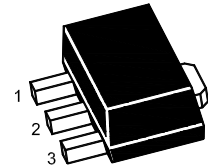


MPSA42U

NPN Silicon Epitaxial Planar Transistor

for high voltage switching and amplifier applications.



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

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

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}	500	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 10\text{ V}$, $I_C = 1\text{ mA}$	h_{FE}	25	-	-
at $V_{CE} = 10\text{ V}$, $I_C = 10\text{ mA}$	h_{FE}	40	-	-
at $V_{CE} = 10\text{ V}$, $I_C = 30\text{ mA}$	h_{FE}	40	-	-
Collector Base Cutoff Current at $V_{CB} = 200\text{ V}$	I_{CBO}	-	0.1	μA
Emitter Base Cutoff Current at $V_{EB} = 6\text{ V}$	I_{EBO}	-	0.1	μA
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

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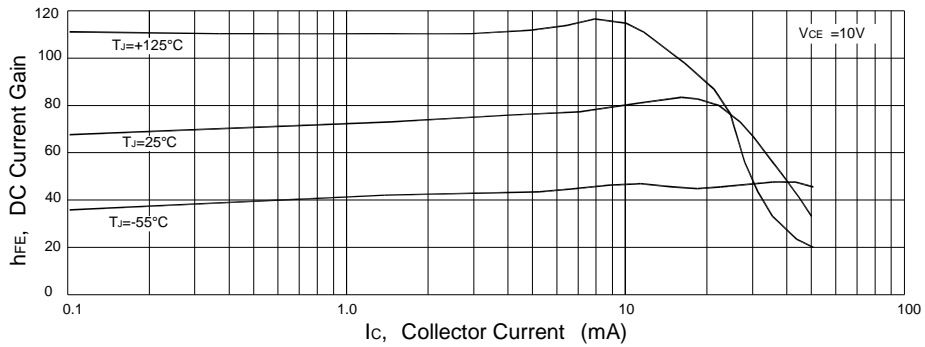


Figure 1. DC Current Gain

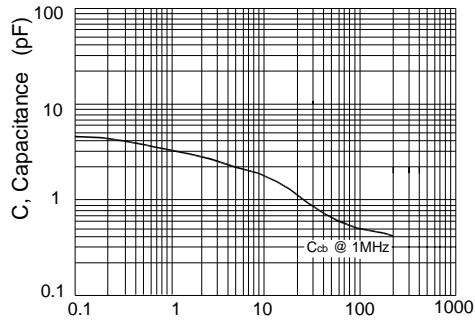


Figure 2. Capacitance

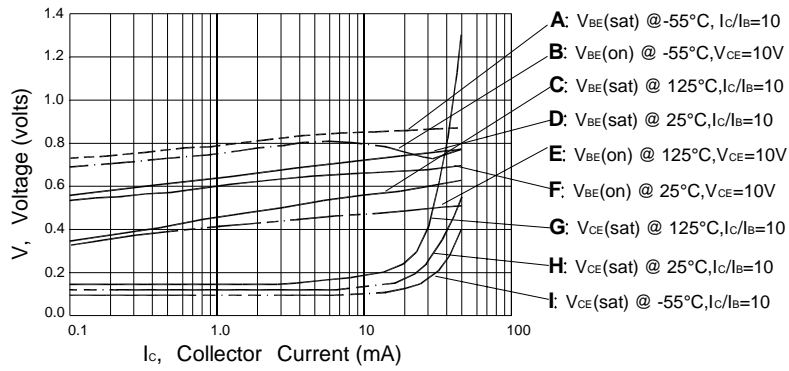


Figure 3. "on" Voltages

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SOT-89 PACKAGE OUTLINE

