

# MPS3638A

## PNP Silicon Epitaxial Planar Transistor

for switching and amplifier applications.



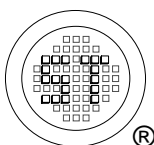
1. Emitter 2. Base 3. Collector  
TO-92 Plastic Package

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	25	V
Collector Emitter Voltage	$-V_{CEO}$	25	V
Emitter Base Voltage	$-V_{EBO}$	4	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 $-V_{CE} = 10\text{ V}$ , $-I_C = 1\text{ mA}$	$h_{FE}$	80	-	-
at $-V_{CE} = 10\text{ V}$ , $-I_C = 10\text{ mA}$	$h_{FE}$	100	-	-
at $-V_{CE} = 1\text{ V}$ , $-I_C = 50\text{ mA}$	$h_{FE}$	100	-	-
at $-V_{CE} = 2\text{ V}$ , $-I_C = 300\text{ mA}$	$h_{FE}$	20	-	-
Collector Emitter Cutoff Current at $-V_{CE} = 15\text{ V}$	$-I_{CES}$	-	35	nA
Emitter Base Cutoff Current at $-V_{EB} = 3\text{ V}$	$-I_{EBO}$	-	35	nA
Collector Base Breakdown Voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	25	-	V
Collector Emitter Breakdown Voltage at $-I_C = 10\text{ mA}$	$-V_{(BR)CEO}$	25	-	V
Emitter Base Breakdown Voltage at $-I_E = 100\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	4	-	V
Collector Emitter Saturation Voltage at $-I_C = 50\text{ mA}$ , $-I_B = 2.5\text{ mA}$	$-V_{CEsat}$	-	0.25	V
at $-I_C = 300\text{ mA}$ , $-I_B = 30\text{ mA}$	$-V_{CEsat}$	-	1	V
Base Emitter Saturation Voltage at $-I_C = 50\text{ mA}$ , $-I_B = 2.5\text{ mA}$	$-V_{BEsat}$	-	1.1	V
at $-I_C = 300\text{ mA}$ , $-I_B = 30\text{ mA}$	$-V_{BEsat}$	0.8	2	V
Gain Bandwidth Product at $-V_{CE} = 3\text{ V}$ , $-I_C = 50\text{ mA}$ , $f = 100\text{ MHz}$	$f_T$	150	-	MHz
Output Capacitance at $-V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{cbo}$	-	10	pF

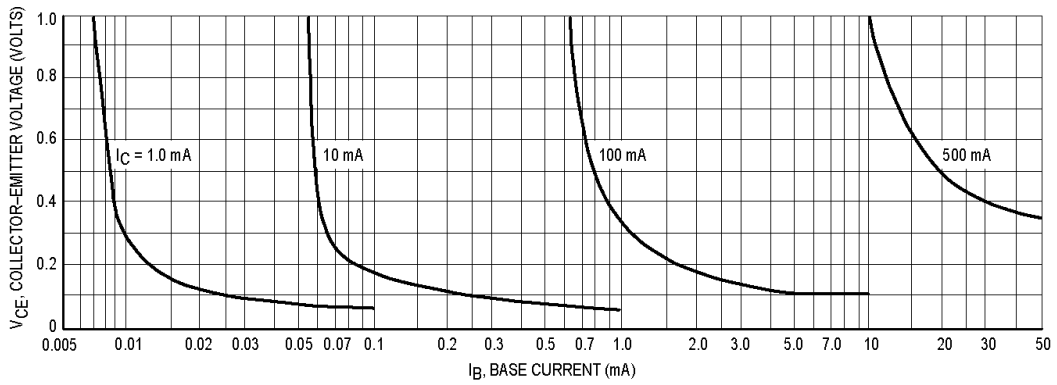
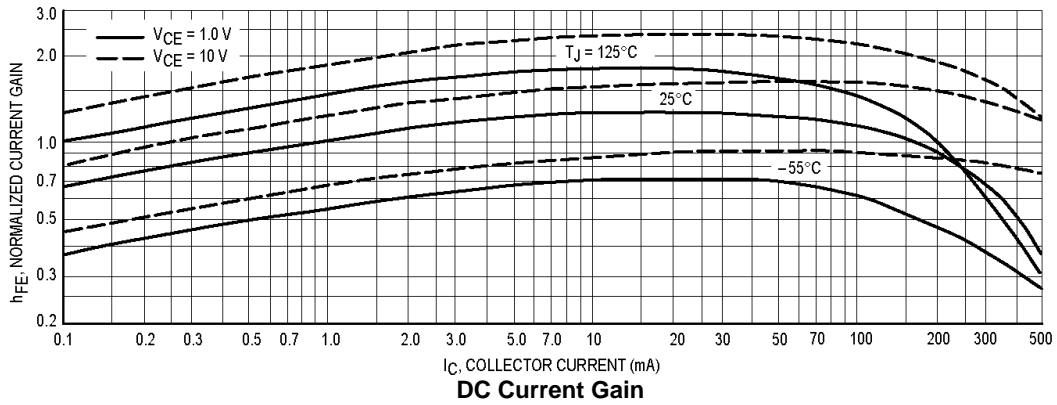


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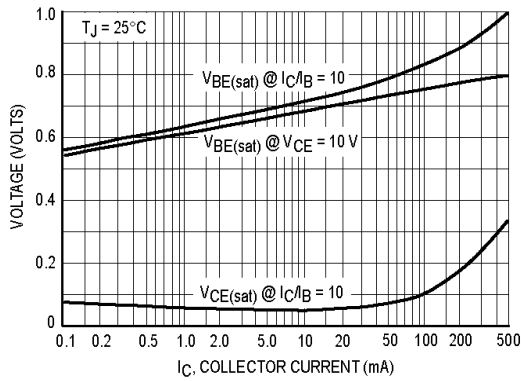


Dated : 14/03/2007

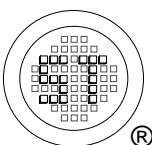
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Collector Saturation Region



"On" Voltages



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