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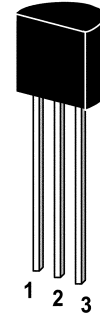
FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,  
KWUN TONG, KOWLOON, HONG KONG.

TEL: 852-2790 0314 FAX: 852-2790 0206

## MPSA56

**PNP Silicon Epitaxial Planar Transistor**  
for amplifier applications

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



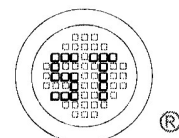
1. Emitter 2. Base 3. Collector

TO-92 Plastic Package  
Weight approx. 0.19g

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

	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	80	V
Collector Emitter Voltage	$-V_{CEO}$	80	V
Emitter Base Voltage	$-V_{EBO}$	4.0	V
Collector Current	$-I_C$	500	mA
Total Device Dissipation at $T_a=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_{tot}$	625 5	mW mW/ $^\circ\text{C}$
Total Device Dissipation at $T_c=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_{tot}$	1.5 12	W mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Ambient(Note1)	$R_{\theta JA}$	200	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_s$	-55 to +150	$^\circ\text{C}$

1.  $R_{\theta JA}$  is measured with the device soldered into a typical printed circuit board.



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Dated : 12/08/2003



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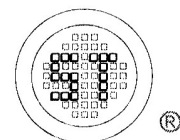
## MPSA56

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

	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at $-I_C=10\text{mA}$ , $-V_{CE}=1\text{V}$	$h_{FE}$	100	-	-	-
at $-I_C=100\text{mA}$ , $-V_{CE}=1\text{V}$	$h_{FE}$	100	-	-	-
Collector Cutoff Current					
at $-V_{CB}=80\text{V}$	$-I_{CBO}$	-	-	0.1	$\mu\text{A}$
Collector Cutoff Current					
at $-V_{CE}=60\text{V}$	$-I_{CES}$	-	-	0.1	$\mu\text{A}$
Collector Emitter Breakdown Voltage <sup>1)</sup>					
at $-I_C=1\text{mA}$	$-V_{(BR)CEO}$	80	-	-	V
Emitter Base Breakdown Voltage					
at $-I_E=100\mu\text{A}$	$-V_{(BR)EBO}$	4	-	-	V
Collector Saturation Voltage					
at $-I_C=100\text{mA}$ , $-I_B=10\text{mA}$	$-V_{CE(sat)}$	-	-	0.25	V
Base On Voltage					
at $-I_C=100\text{mA}$ , $-V_{CE}=1\text{V}$	$-V_{BE(on)}$	-	-	1.2	V
Current Gain – Bandwidth Product <sup>2)</sup>					
at $-I_C=100\text{mA}$ , $-V_{CE}=1\text{V}$ , $f=100\text{MHz}$	$f_T$	50	-	-	MHz

1) Pulse test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

2)  $f_T$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to unity.



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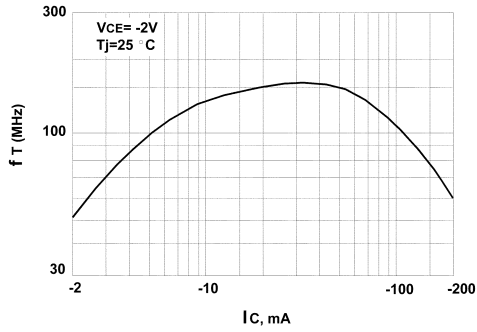
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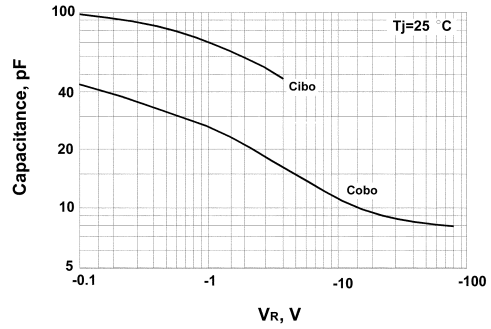
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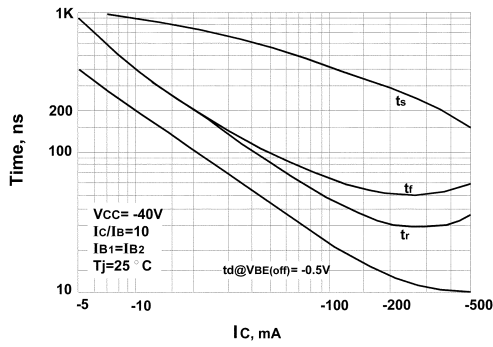
Current gain - bandwidth product



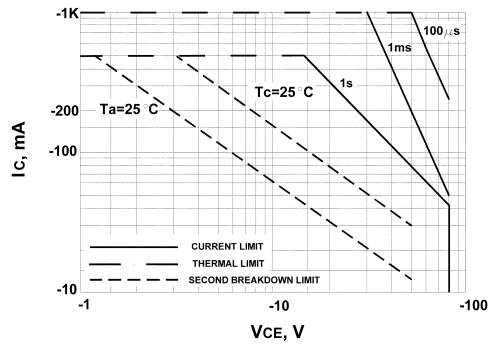
Capacitance



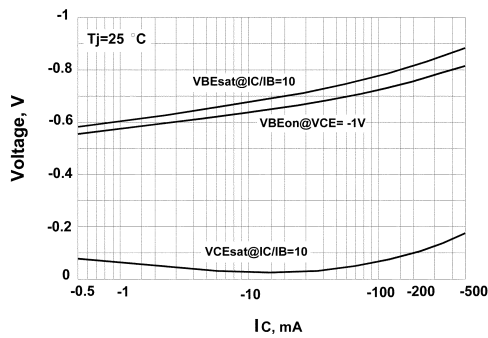
Switching Time



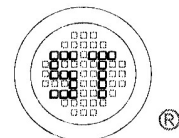
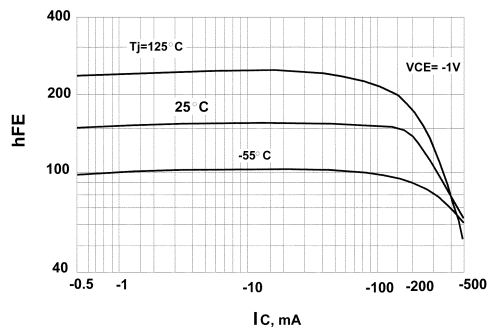
Active- region safe operating area



"ON" voltages



DC current gain



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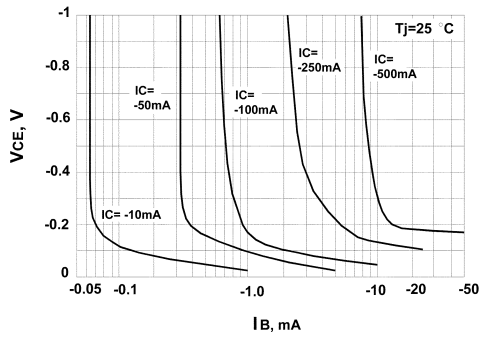
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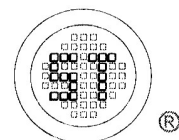
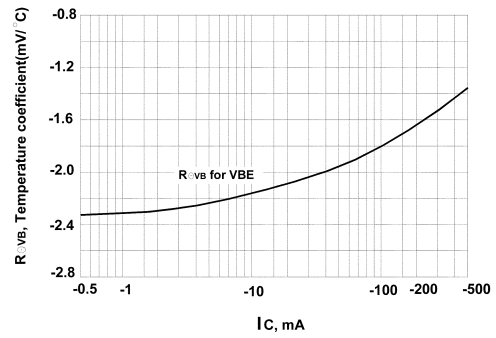
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Collector saturation region



Base emitter temperature coefficient



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