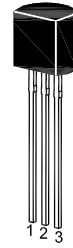


MPS650 / 651

NPN Silicon Epitaxial Planar Transistor

for switching and amplifier applications.



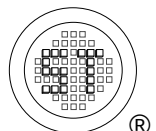
1. Emitter 2. Base 3. Collector
TO-92 Plastic Package

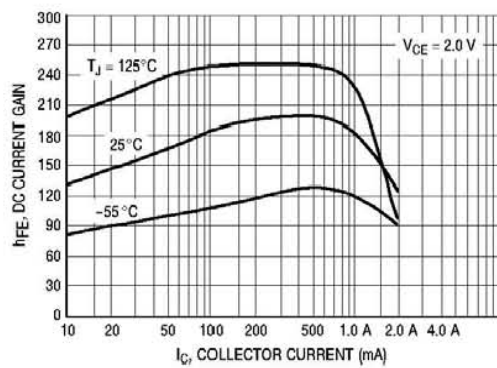
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter		Symbol	Value	Unit
Collector Base Voltage	MPS650 MPS651	V_{CBO}	60 80	V
Collector Emitter Voltage	MPS650 MPS651	V_{CEO}	40 60	V
Emitter Base Voltage		V_{EBO}	5	V
Collector Current		I_C	2	A
Power Dissipation		P_{tot}	625	mW
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	- 55 to + 150	$^\circ\text{C}$

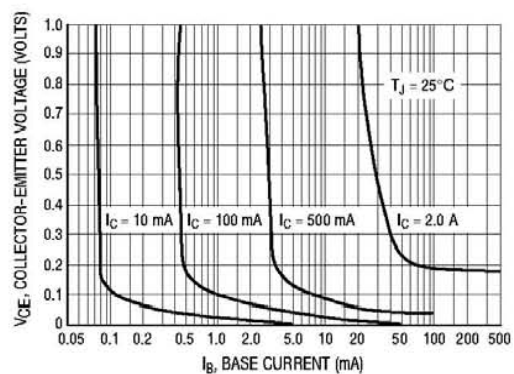
Characteristics at $T_a = 25^\circ\text{C}$

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain					
at $V_{CE} = 2\text{ V}$, $I_C = 50\text{ mA}$		h_{FE}	75	-	-
at $V_{CE} = 2\text{ V}$, $I_C = 500\text{ mA}$		h_{FE}	75	-	-
at $V_{CE} = 2\text{ V}$, $I_C = 1\text{ A}$		h_{FE}	75	-	-
at $V_{CE} = 2\text{ V}$, $I_C = 2\text{ A}$		h_{FE}	40	-	-
Collector Base Cutoff Current	MPS650 MPS651	I_{CBO}	-	100 100	nA
at $V_{CB} = 60\text{ V}$					
at $V_{CB} = 80\text{ V}$					
Emitter Base Cutoff Current		I_{EBO}	-	100	nA
at $V_{EB} = 4\text{ V}$					
Collector Base Breakdown Voltage	MPS650 MPS651	$V_{(BR)CBO}$	60 80	- -	V
at $I_C = 100\text{ }\mu\text{A}$					
Collector Emitter Breakdown Voltage	MPS650 MPS651	$V_{(BR)CEO}$	40 60	- -	V
at $I_C = 10\text{ mA}$					
Emitter Base Breakdown Voltage		$V_{(BR)EBO}$	5	-	V
at $I_E = 10\text{ }\mu\text{A}$					
Collector Emitter Saturation Voltage		$V_{CE(sat)}$	- -	0.3 0.5	V
at $I_C = 1\text{ A}$, $I_B = 100\text{ mA}$					
at $I_C = 2\text{ A}$, $I_B = 200\text{ mA}$					
Base Emitter Saturation Voltage		$V_{BE(sat)}$	-	1.2	V
at $I_C = 1\text{ A}$, $I_B = 100\text{ mA}$					
Base Emitter On Voltage		$V_{BE(on)}$	-	1	V
at $I_C = 1\text{ A}$, $V_{CE} = 2\text{ V}$					
Gain Bandwidth Product		f_T	75	-	MHz
at $V_{CE} = 5\text{ V}$, $I_C = 50\text{ mA}$, $f = 100\text{ MHz}$					

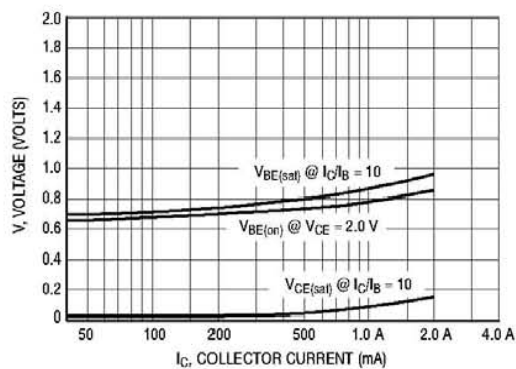




**Figure 1. MPS650, MPS651
Typical DC Current Gain**



**Figure 2. MPS650, MPS651
Collector Saturation Region**



**Figure 3. MPS650, MPS651
On Voltages**

