

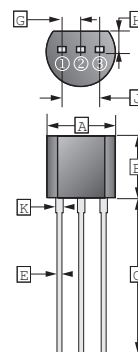
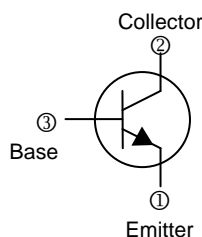
RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

## FEATURES

Switching and Amplifier Applications

TO-92



REF.	Millimeter	
	Min.	Max.
A	4.40	4.70
B	4.30	4.70
C	12.70	-
D	3.30	3.81
E	0.36	0.56
F	0.36	0.51
G	1.27 TYP.	
H	1.10	-
J	2.42	2.66
K	0.36	0.76

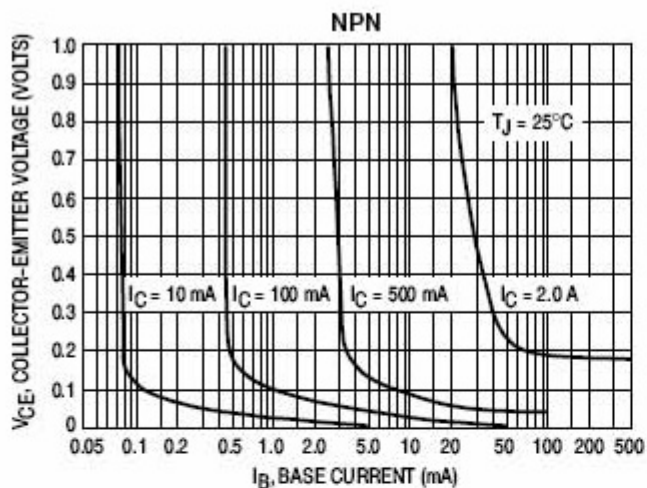
## ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector - Base Voltage	V <sub>CBO</sub>	80	V
Collector - Emitter Voltage	V <sub>CEO</sub>	60	V
Emitter - Base Voltage	V <sub>EBO</sub>	5	V
Collector Current - Continuous	I <sub>C</sub>	2	A
Collector Dissipation	P <sub>C</sub>	0.625	W
Junction, Storage Temperature	T <sub>J</sub> , T <sub>STG</sub>	150, -55~150	°C

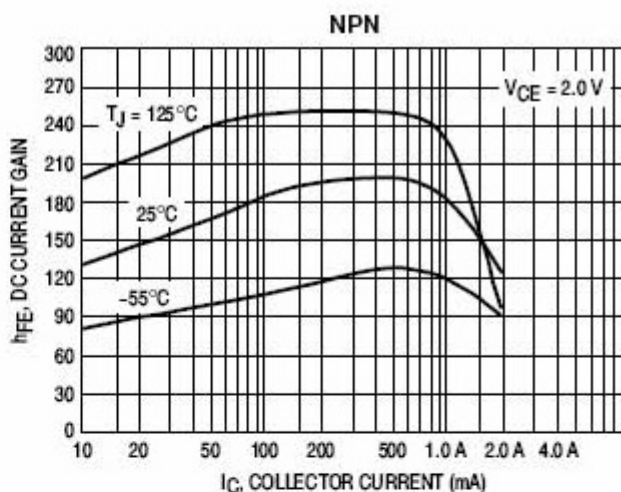
## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	80	-	-	V	I <sub>C</sub> =100μA, I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub> *	60	-	-	V	I <sub>C</sub> =10 mA, I <sub>B</sub> =0
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	5	-	-	V	I <sub>E</sub> =10μA, I <sub>C</sub> =0
Collector Cut-Off Current	I <sub>CBO</sub>	-	-	0.1	μA	V <sub>CB</sub> =80 V, I <sub>E</sub> =0
Emitter Cut-Off Current	I <sub>EBO</sub>	-	-	0.1	μA	V <sub>EB</sub> =4 V, I <sub>C</sub> =0
DC Current Gain	H <sub>FE(1)</sub> *	75	-	-		V <sub>CE</sub> =2V, I <sub>C</sub> =50mA
	H <sub>FE(2)</sub> *	75	-	-		V <sub>CE</sub> =2V, I <sub>C</sub> =500mA
	H <sub>FE(3)</sub> *	75	-	-		V <sub>CE</sub> =2V, I <sub>C</sub> =1A
	H <sub>FE(4)</sub> *	40	-	-		V <sub>CE</sub> =2V, I <sub>C</sub> =2A
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub> *	-	-	0.5	V	I <sub>C</sub> =2A, I <sub>B</sub> =200mA
		-	-	0.3	V	I <sub>C</sub> =1A, I <sub>B</sub> =100mA
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub> *	-	-	1.2	V	I <sub>C</sub> =1A, I <sub>B</sub> =100mA
Base-Emitter On Voltage	V <sub>BE(on)</sub> *	-	-	1	V	V <sub>CE</sub> =2V, I <sub>C</sub> =1A
Transition Frequency	f <sub>T</sub>	75	-	-	MHz	V <sub>CE</sub> =5V, I <sub>C</sub> =50 mA, f=100 MHz

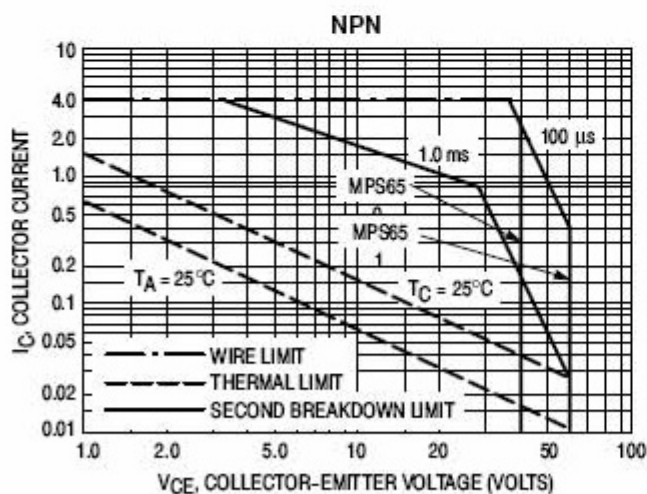
**CHARACTERISTIC CURVES**



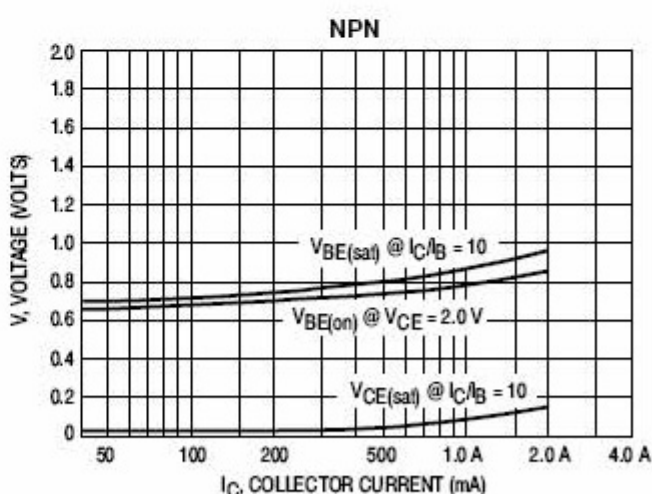
MPS650, MPS651  
Collector Saturation Region



MPS650, MPS651  
Typical DC Current Gain



MPS650, MPS651 SOA,  
Safe Operating Area



MPS650, MPS651  
On Voltages