

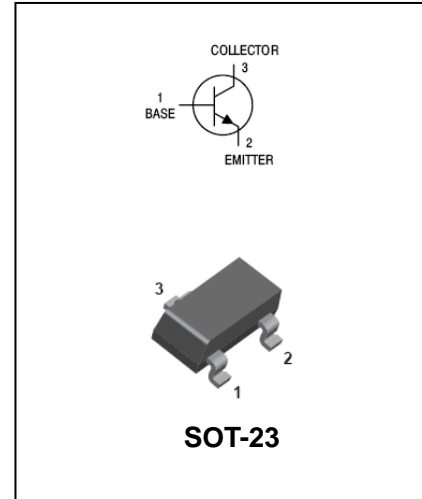
## NPN General Purpose Transistor

### FEATURES

- Epitaxial planar die construction.
- Complementary PNP type available (MMBT5401).
- Also available in lead free version.

### APPLICATIONS

- Ideal for medium power amplification and switching



### MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	UNIT
V <sub>CBO</sub>	collector-base voltage	180	V
V <sub>CEO</sub>	collector-emitter voltage	160	V
V <sub>EBO</sub>	emitter-base voltage	6	V
I <sub>C</sub>	collector current (DC)	0.6	A
P <sub>C</sub>	Collector dissipation	0.3	W
T <sub>j</sub> , T <sub>stg</sub>	junction and storage temperature	-55-150	°C

### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Symbol	Parameter	Test conditions	MIN.	MAX.	UNIT
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =100μA, I <sub>E</sub> =0	180		
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =0.1mA, I <sub>B</sub> =0	160		
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =100μA, I <sub>C</sub> =0	6		
I <sub>CBO</sub>	collector cut-off current	I <sub>E</sub> = 0; V <sub>CB</sub> = 180V	-	0.1	μA
I <sub>EBO</sub>	emitter cut-off current	I <sub>C</sub> = 0; V <sub>EB</sub> = 4V	-	0.1	μA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = 5V; I <sub>C</sub> = 1mA V <sub>CE</sub> = 5V; I <sub>C</sub> = 10mA V <sub>CE</sub> = 5V; I <sub>C</sub> = 50 mA	80 80 30	- 250 -	
V <sub>CE(sat)</sub>	collector-emitter saturation voltage	I <sub>C</sub> = 50 mA; I <sub>B</sub> = 5 mA	-	0.5	V
V <sub>BE(sat)</sub>	base-emitter saturation voltage	I <sub>C</sub> = 50 mA; I <sub>B</sub> = 5 mA	-	1	V
f <sub>T</sub>	transition frequency	I <sub>C</sub> = 10mA; V <sub>CE</sub> = 10V; f = 100MHz	80	-	MHz

## TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

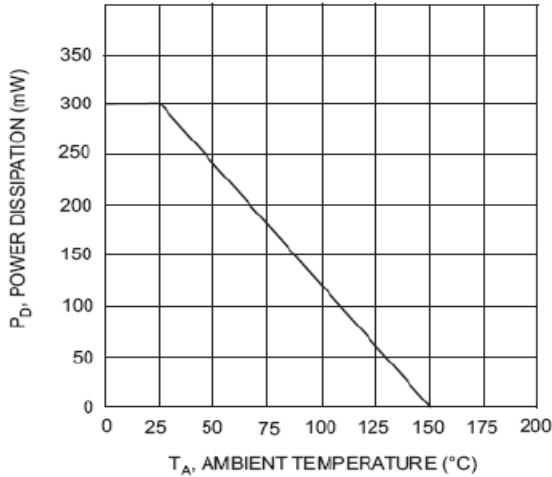


Fig. 1, Max Power Dissipation vs Ambient Temperature

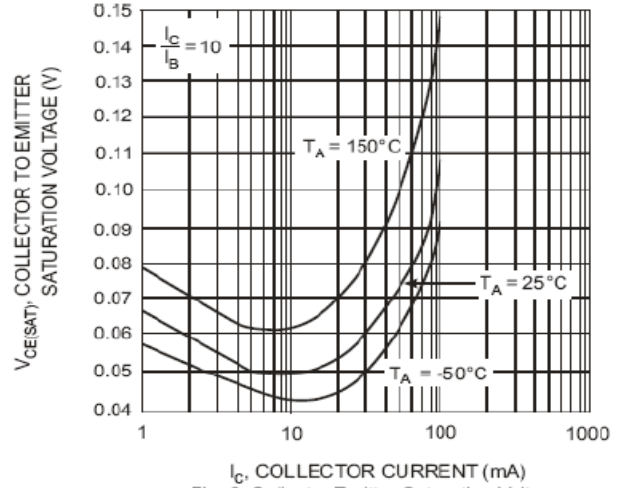


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

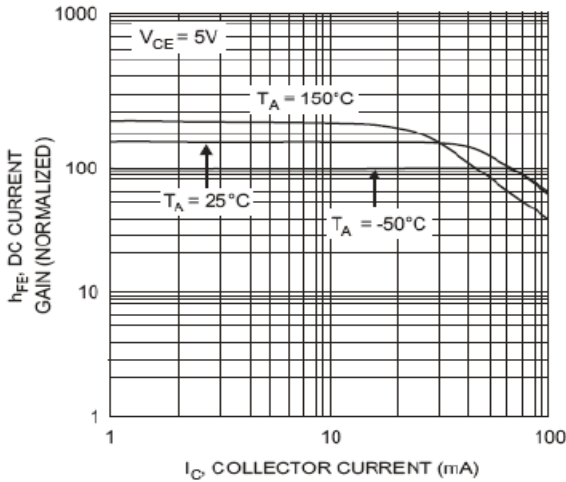


Fig. 3, DC Current Gain vs Collector Current

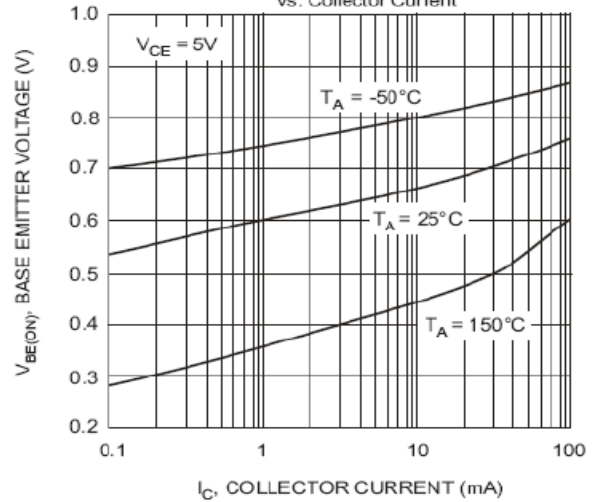


Fig. 4, Base Emitter Voltage vs. Collector Current

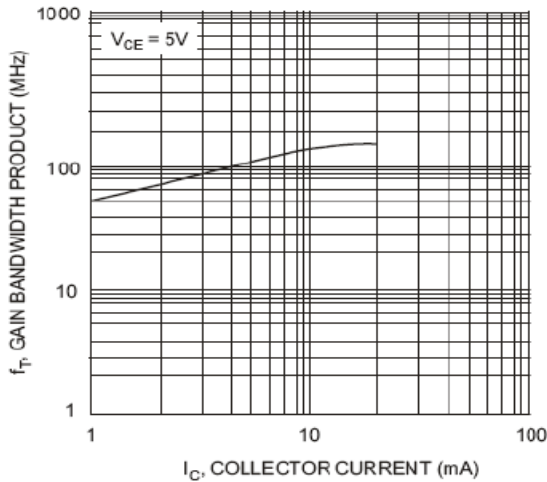


Fig. 5, Gain Bandwidth Product vs. Collector Current



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