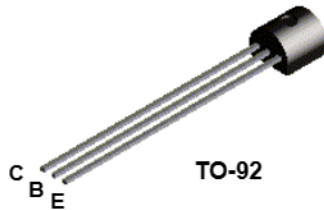
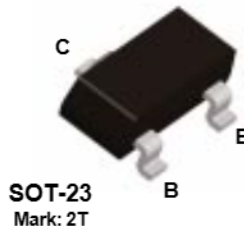


2N4403



MMBT4403



PNP General Purpose Amplifier

This device is designed for use as a general purpose amplifier and switch requiring collector currents to 500 mA.

Absolute Maximum Ratings* TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CEO}	Collector-Emitter Voltage	40	V
V _{CBO}	Collector-Base Voltage	40	V
V _{EBO}	Emitter-Base Voltage	5.0	V
I _C	Collector Current - Continuous	600	mA
T _J , T _{stg}	Operating and Storage Junction Temperature Range	-55 to +150	°C

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics TA = 25°C unless otherwise noted

Symbol	Characteristic	Max		Units
		2N4403	*MMBT4403	
P _D	Total Device Dissipation	625	350	mW
	Derate above 25°C	5.0	2.8	mW/°C
R _{θJC}	Thermal Resistance, Junction to Case	83.3		°C/W
R _{θJA}	Thermal Resistance, Junction to Ambient	200	357	°C/W

*Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06."

Electrical Characteristics

TA = 25°C unless otherwise noted

OFF CHARACTERISTICS

ON CHARACTERISTICS

SMALL SIGNAL CHARACTERISTICS

SWITCHING CHARACTERISTICS

t _d	Delay Time	V _{CC} = 30 V, I _C = 150 mA, I _{B1} = 15 mA	15	ns
t _r	Rise Time		20	ns
t _s	Storage Time	V _{CC} = 30 V, I _C = 150 mA I _{B1} = I _{B2} = 15 mA	225	ns
t _f	Fall Time		30	ns

*Pulse Test: Pulse Width

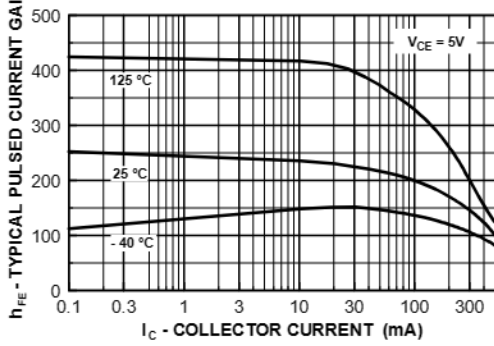
PNP General Purpose Amplifier

(continued)

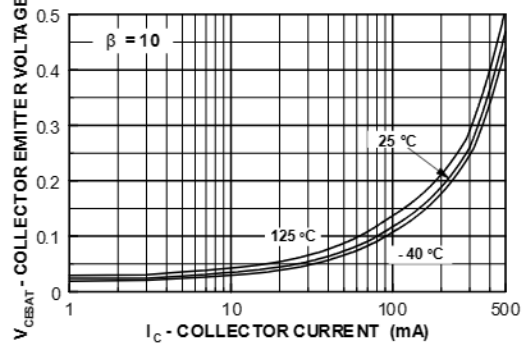
2N4403 / MMBT4403

Typical Characteristics

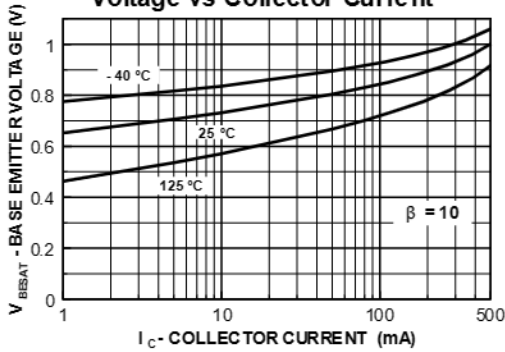
Typical Pulsed Current Gain vs Collector Current



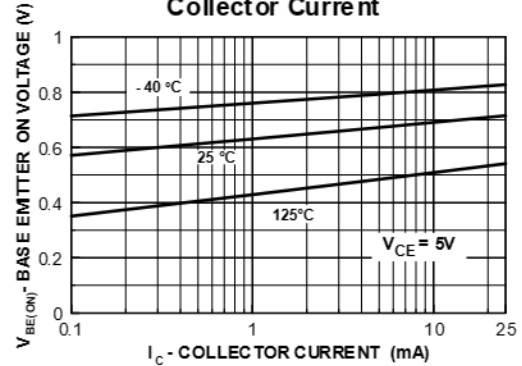
Collector-Emitter Saturation Voltage vs Collector Current



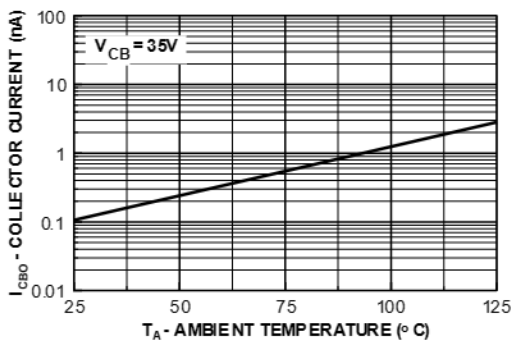
Base-Emitter Saturation Voltage vs Collector Current



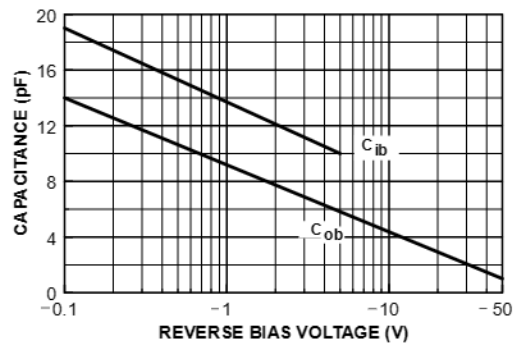
Base Emitter ON Voltage vs Collector Current



Collector-Cutoff Current vs Ambient Temperature

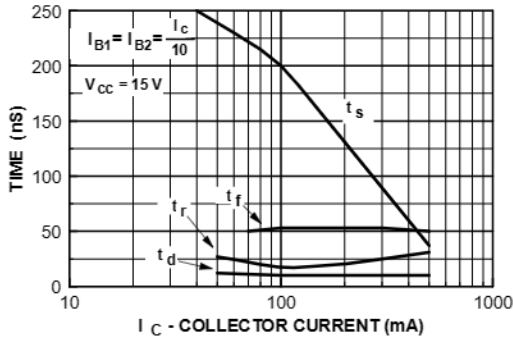


Input and Output Capacitance vs Reverse Bias Voltage

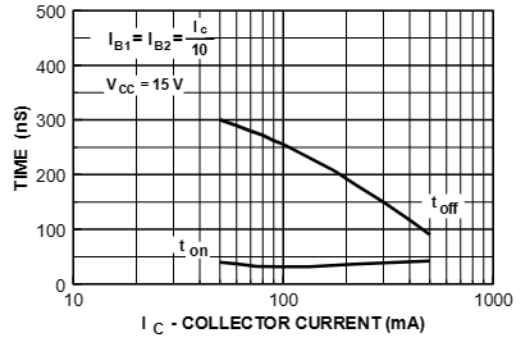


Typical Characteristics (continued)

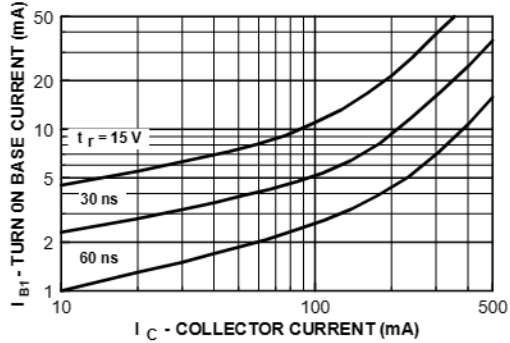
Switching Times vs Collector Current



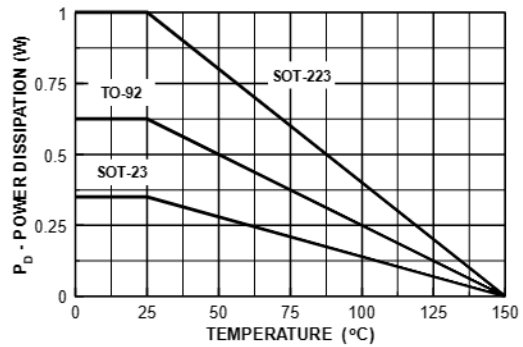
Turn On and Turn Off Times vs Collector Current



Rise Time vs Collector and Turn On Base Currents



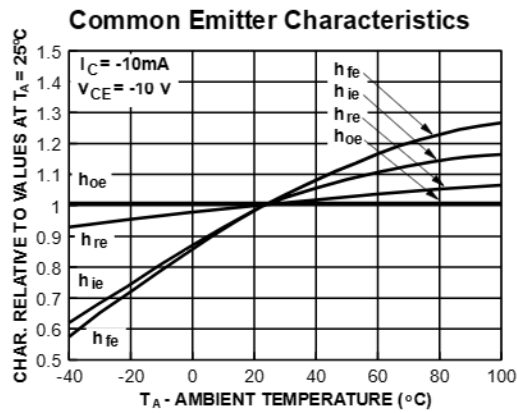
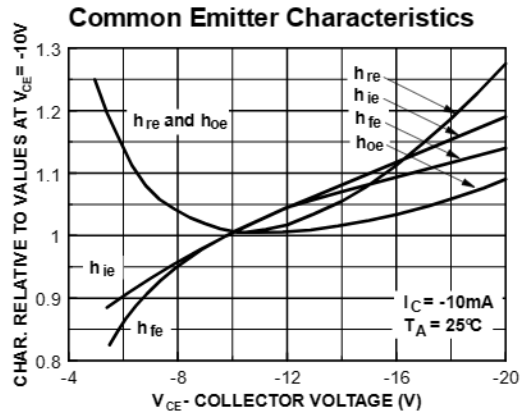
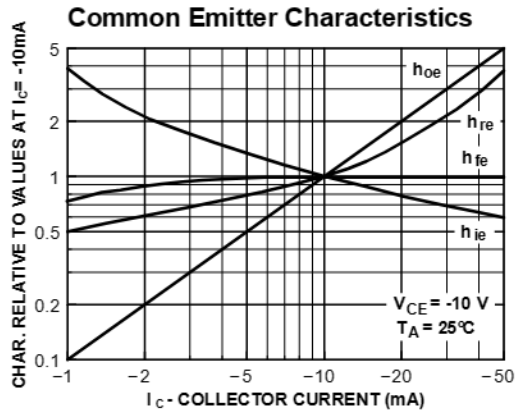
Power Dissipation vs Ambient Temperature



PNP General Purpose Amplifier
(continued)

2N4403 / MMBT4403

Typical Common Emitter Characteristics (f = 1.0kHz)



Test Circuits

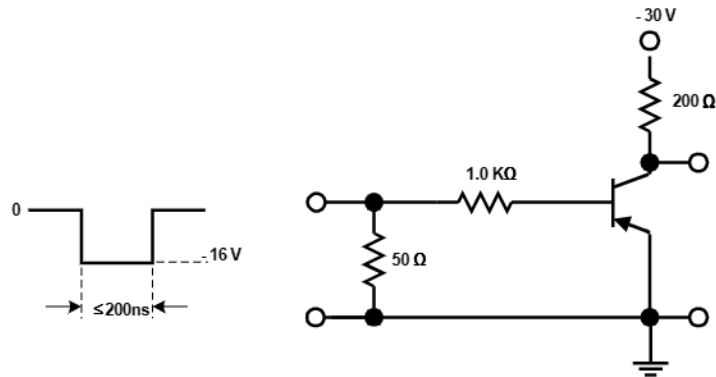


FIGURE 1: Saturated Turn-On Switching Time Test Circuit

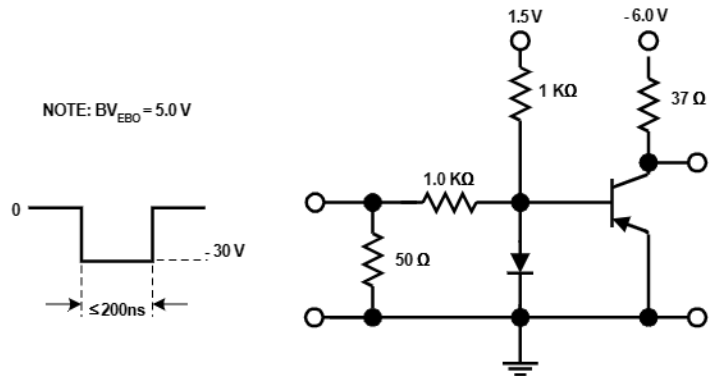


FIGURE 2: Saturated Turn-Off Switching Time Test Circuit

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