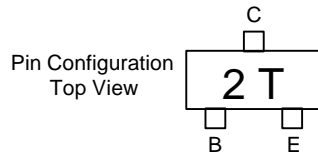


MMBT4403

PNP General Purpose Amplifier

Features

- Surface Mount SOT-23 Package
- Capable of 350mWatts of Power Dissipation



Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ($I_C=1.0\text{mA}$, $I_B=0$)	40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=10\mu\text{A}$, $I_E=0$)	40		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=10\mu\text{A}$, $I_C=0$)	5.0		Vdc
I_{BL}	Base Cutoff Current ($V_{CE}=30\text{Vdc}$, $V_{BE}=3.0\text{Vdc}$)		0.1	μA
I_{CEX}	Collector Cutoff Current ($V_{CE}=30\text{Vdc}$, $V_{BE}=3.0\text{Vdc}$)		0.1	μA

ON CHARACTERISTICS

h_{FE}	DC Current Gain* ($I_C=0.1\text{mA}$, $V_{CE}=1.0\text{Vdc}$) ($I_C=1.0\text{mA}$, $V_{CE}=1.0\text{Vdc}$) ($I_C=10\text{mA}$, $V_{CE}=1.0\text{Vdc}$) ($I_C=150\text{mA}$, $V_{CE}=2.0\text{Vdc}$) ($I_C=500\text{mA}$, $V_{CE}=2.0\text{Vdc}$)	30 60 100 100 20	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=150\text{mA}$, $I_B=15\text{mA}$) ($I_C=500\text{mA}$, $I_B=50\text{mA}$)		0.4 0.75	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=150\text{mA}$, $I_B=15\text{mA}$) ($I_C=500\text{mA}$, $I_B=50\text{mA}$)	0.75	0.95 1.30	Vdc

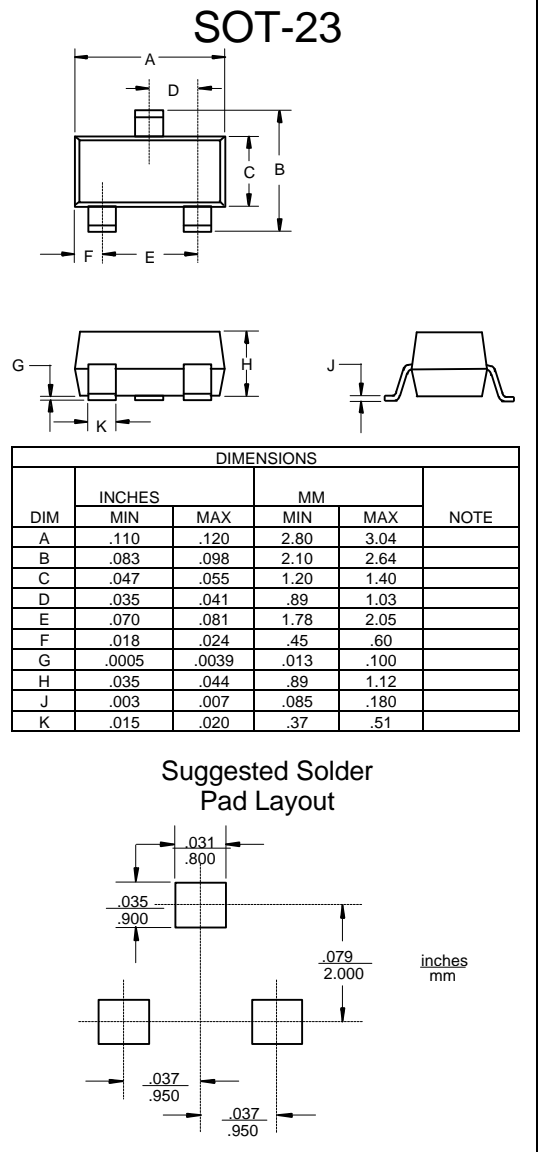
SMALL-SIGNAL CHARACTERISTICS

f_T	Current Gain-Bandwidth Product ($I_C=20\text{mA}$, $V_{CE}=10\text{Vdc}$, $f=100\text{MHz}$)	200		MHz
C_{cb}	Output Capacitance ($V_{CB}=10\text{Vdc}$, $I_E=0$, $f=140\text{kHz}$)		8.5	pF
C_{eb}	Input Capacitance ($V_{EB}=0.5\text{Vdc}$, $I_C=0$, $f=140\text{kHz}$)		30.0	pF

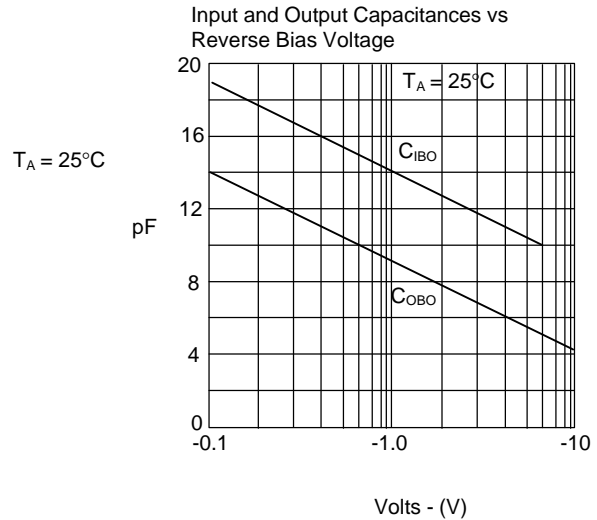
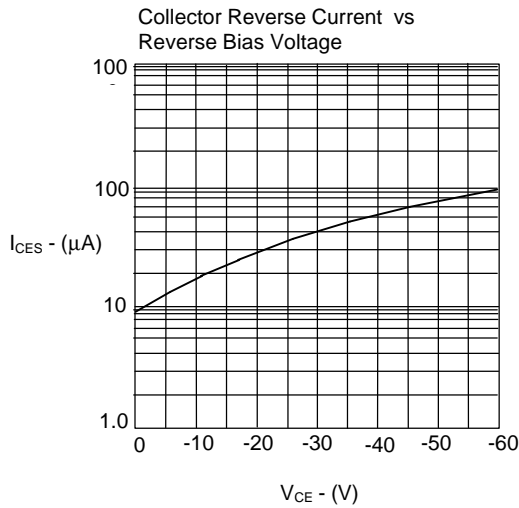
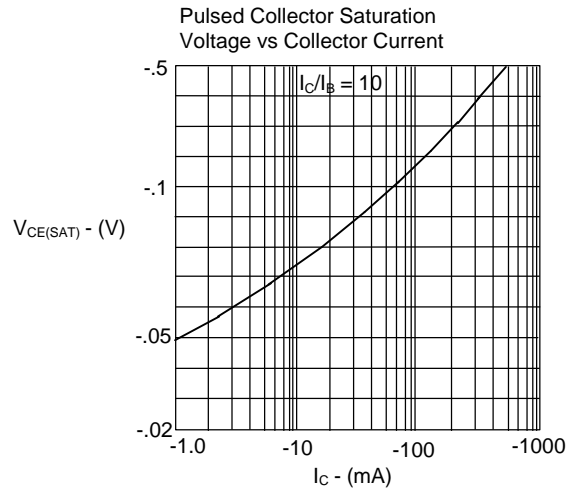
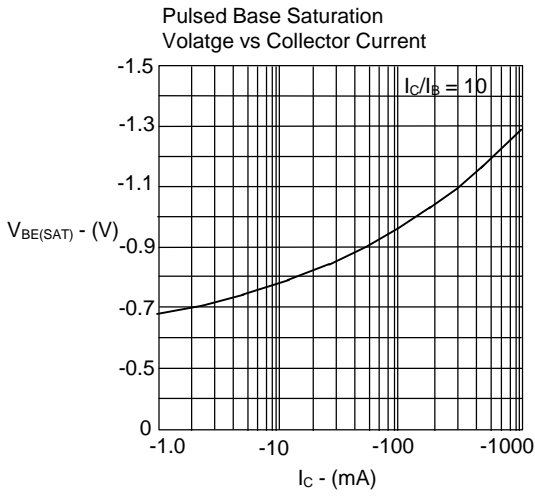
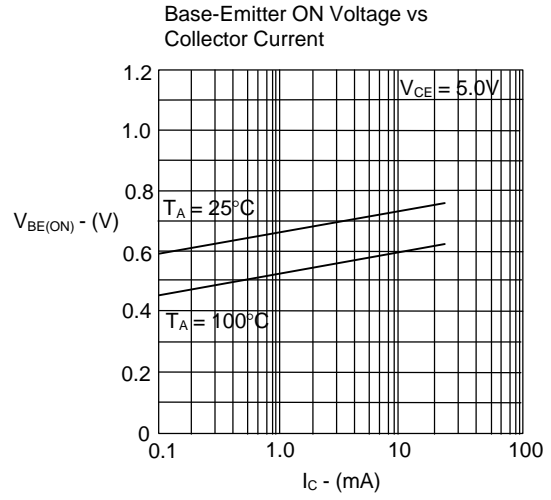
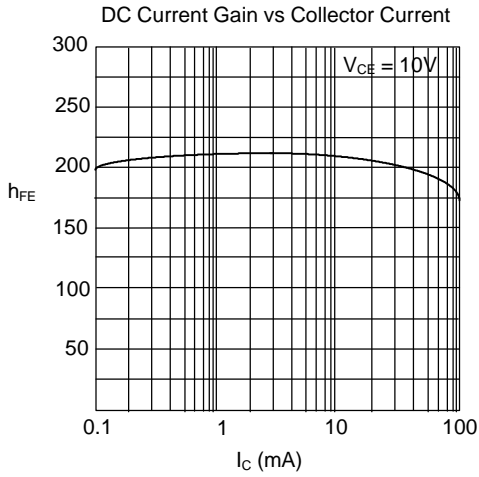
SWITCHING CHARACTERISTICS

t_d	Delay Time	($V_{CC}=3.0\text{Vdc}$, $V_{BE}=2.0\text{Vdc}$)	15	ns
t_r	Rise Time	$I_C=150\text{mA}$, $I_{B1}=15\text{mA}$	20	ns
t_s	Storage Time	($V_{CC}=3.0\text{Vdc}$, $I_C=150\text{mA}$)	225	ns
t_f	Fall Time	$I_{B1}=I_{B2}=15\text{mA}$	30	ns

*Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$



MMBT4403



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