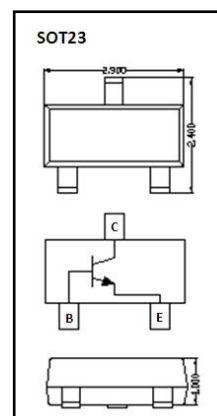


DATA SHEET

MMBT2222A

- ◇ Capable of 300mWatts of Power Dissipation
- ◇ Operating and Storage Junction Temperatures: -55°C to 150°C
- ◇ Surface Mount SOT-23 Package
- ◇ RoHS compliant / Green EMC

Device Marking Code	
MMBT2222A	1P



MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	75	V
V_{CE0}	Collector-Emitter Voltage	40	V
V_{EB0}	Emitter-Base Voltage	6	V
I_C	Collector Current	600	mA
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	417	$^{\circ}\text{C}/\text{W}$
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	$-55 \sim +150$	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS @ 25° C Unless Otherwise Specified

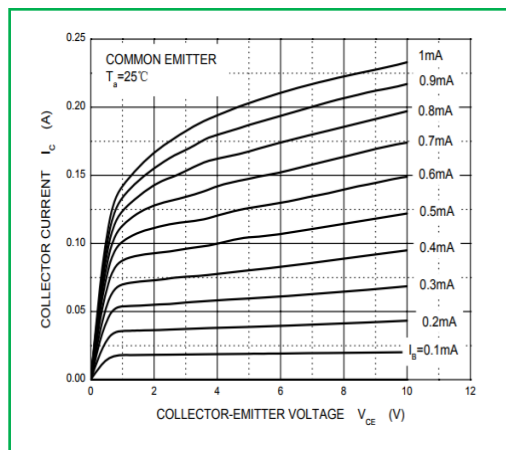
Symbol	Parameter	Test Conditions	Min	Max	Units
V_{CE0}	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}$, $I_B=0$	40		V
V_{CB0}	Collector-Base Breakdown Voltage	$I_C=10\mu\text{A}$, $I_E=0$	75		V
V_{EB0}	Emitter-Base Breakdown Voltage	$I_E=10\mu\text{A}$, $I_C=0$	6.0		V
I_{CEX}	Collector Cutoff Current	$V_{CE}=60\text{V}$, $V_{BE}=3.0\text{V}$		10	nA

h_{FE}	DC Current Gain	$I_C=0.1mA, V_{CE}=10V$ $I_C=1.0mA, V_{CE}=10V$ $I_C=10mA, V_{CE}=10V$ $I_C=150mA, V_{CE}=10V$ $I_C=150mA, V_{CE}=10V$ $I_C=500mA, V_{CE}=10V$	35 50 75 100 50 40	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$		0.3 1.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$	0.6	1.2 2.0	V
f_T	Current Gain-Bandwidth Product	$I_C=20mA,$ $V_{CE}=20V, f=100MHz$	300		MHZ
C_{cb}	Collector-Base Capacitance	$V_{CB}=10V, I_E=0, f=1.0MHz$		8.0	PF
C_{eb}	Emitter-Base Capacitance	$V_{BE}=0.5V, I_C=0, f=1.0MHz$		25	PF

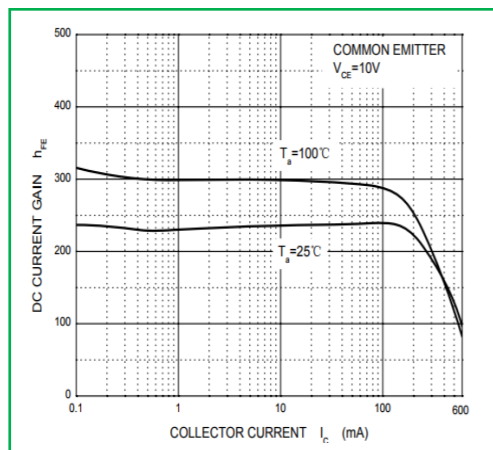
SWITCHING CHARACTERISTICS

Symbol	Parameter	Test Conditions	Min	Max	Units
t_d	Delay Time	$V_{CC}=30V, V_{BE}=0.5V$ $I_C=150mA, I_{B1}=15mA$		10	ns
t_r	Rise Time			25	ns
t_s	Storage Time	$V_{CC}=30V, I_C=150mA$ $B1=I_{B2}=15mA$		225	ns
t_f	Fall Time			60	ns

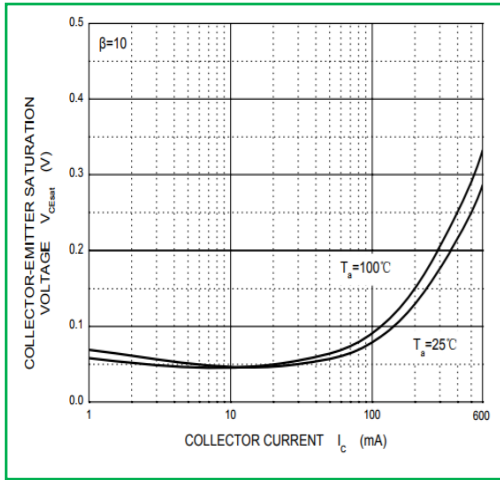
Typical Characteristics



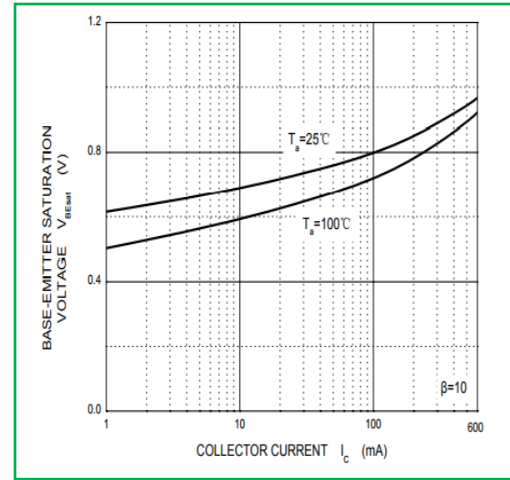
Static Characteristic



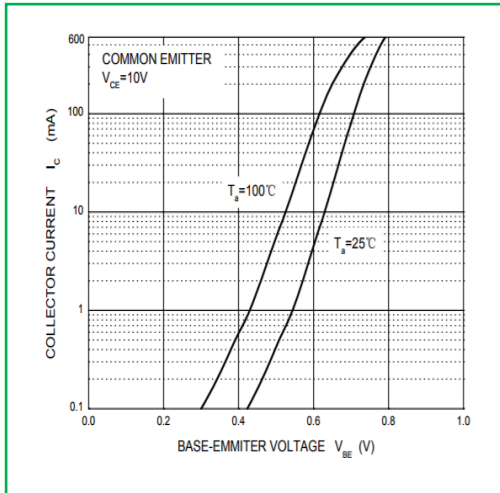
$h_{FE}-I_C$



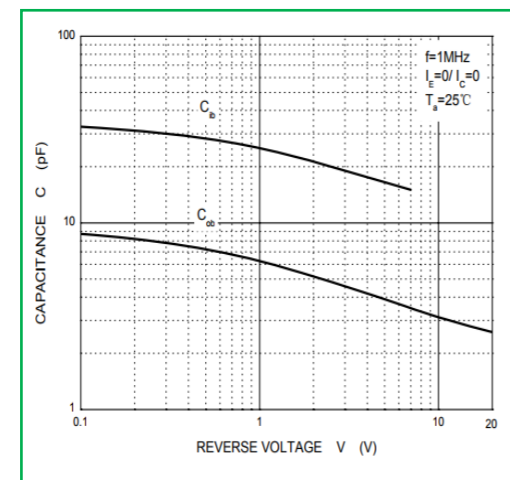
$V_{CEsat}-I_C$



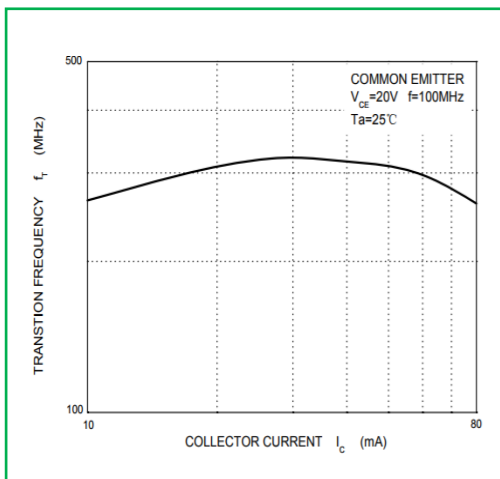
$V_{BEsat}-I_C$



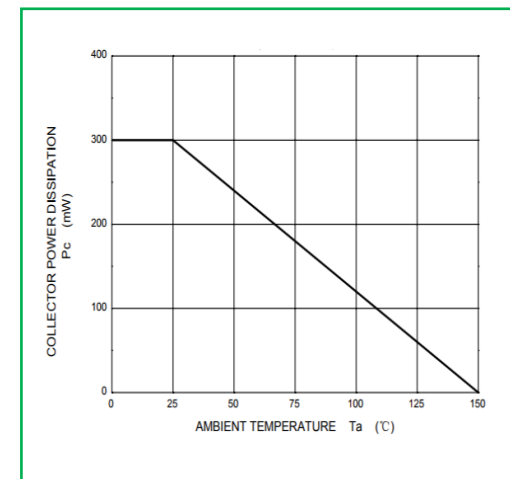
I_C-V_{BE}



$C_{ob}/C_{ib}-V_{CB}-V_{EB}$



f_T-I_C



P_C-T_a

ORDERING INFORMATION

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
MMBT2222A	SOT23	Tape & Reel 3000pcs /7" Reel	8mm	4mm	Conductive	

PACKAGE DIMENSIONS

