

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead free

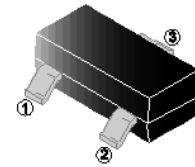
FEATURES

- Complementary PNP Type Available (MMBT4403-C)
- Epoxy Meets UL 94 V-0 Flammability Rating

SOT-23

MARKING

2X

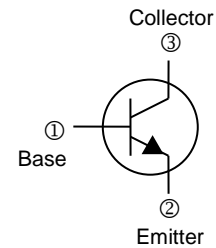


PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

ORDER INFORMATION

Part Number	Type
MMBT4401-C	Lead (Pb)-free and Halogen-free



ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V _{CBO}	60	V
Collector-Emitter Voltage	V _{CEO}	40	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current-Continuous	I _C	600	mA
Collector Power Dissipation ¹	P _C	300	mW
Thermal Resistance, Junction-Ambient	R _{θJA}	417	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{STG}	-55~150	

Note:

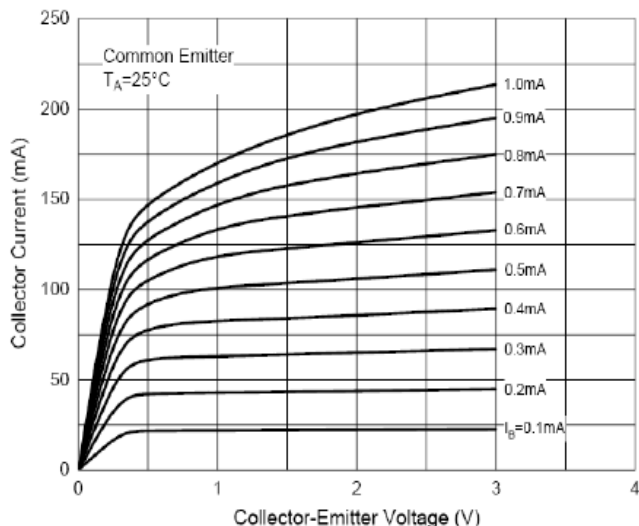
1. Device mounted on an FR-4 PCB, single-sided copper, tin-plated and standard footprint.

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

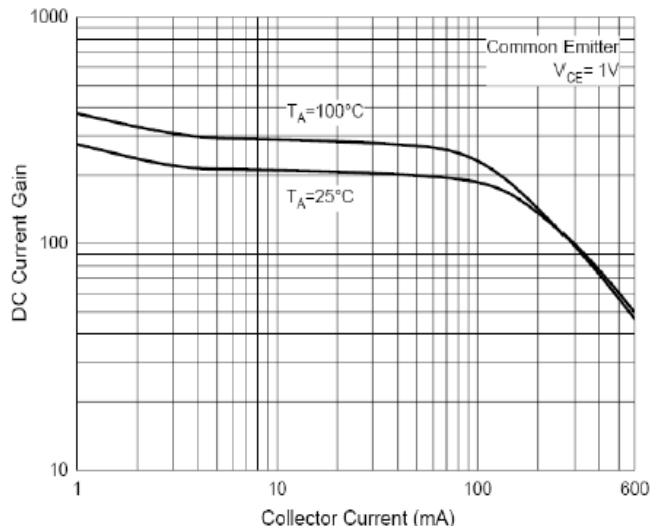
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	60	-	-	V	$I_C=100\mu\text{A}$, $I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40	-	-	V	$I_C=1\text{mA}$, $I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6	-	-	V	$I_E=100\mu\text{A}$, $I_C=0$
Collector-Base Cut-off Current	I_{CBO}	-	-	0.1	μA	$V_{CB}=50\text{V}$, $I_E=0$
Collector Cut-off Current	I_{CEX}	-	-	0.1		$V_{CE}=35\text{V}$, $V_{BE}=0.4\text{V}$
Emitter-Base Cut-off current	I_{EBO}	-	-	0.1		$V_{EB}=5\text{V}$, $I_C=0$
DC Current Gain	h_{FE}	20	-	-		$I_C=0.1\text{mA}$, $V_{CE}=1\text{V}$
		40	-	-		$I_C=1\text{mA}$, $V_{CE}=1\text{V}$
		80	-	-		$I_C=10\text{mA}$, $V_{CE}=1\text{V}$
		100	-	300		$I_C=150\text{mA}$, $V_{CE}=1\text{V}$
		40	-	-		$I_C=500\text{mA}$, $V_{CE}=2\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.4	V	$I_C=150\text{mA}$, $I_B=15\text{mA}$
		-	-	0.75		$I_C=500\text{mA}$, $I_B=50\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-	-	0.95	V	$I_C=150\text{mA}$, $I_B=15\text{mA}$
		-	-	1.2		$I_C=500\text{mA}$, $I_B=50\text{mA}$
Transition Frequency	f_T	-	250	-	MHz	$I_C=20\text{mA}$, $V_{CE}=10\text{V}$, $f=100\text{MHz}$
Collector-Base Capacitance	C_{cb}	-	6.5	-	pF	$V_{CB}=5\text{V}$, $I_E=0$, $f=1\text{MHz}$
Emitter-Base Capacitance	C_{eb}	-	30	-		$V_{EB}=0.5\text{V}$, $I_C=0$, $f=1\text{MHz}$
Delay Time	t_d	-	15	-	nS	$V_{CC}=30\text{V}$, $V_{BE}=0.2\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$
Rise Time	t_r	-	20	-		
Storage Time	t_s	-	225	-		
Fall Time	t_f	-	30	-		

CHARACTERISTIC CURVES

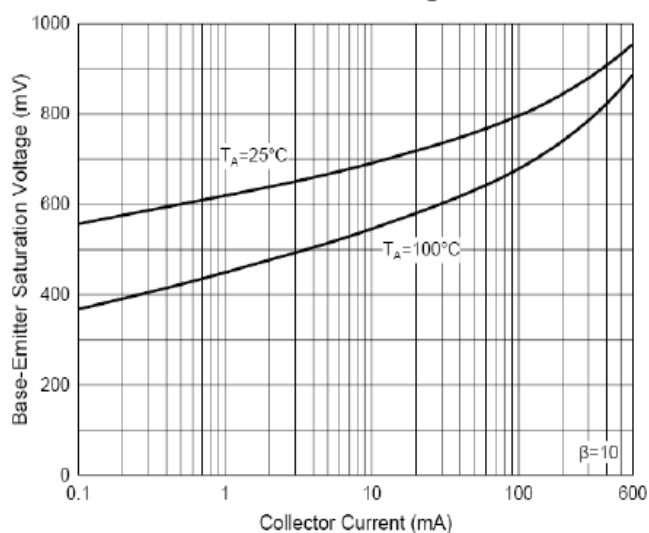
Static Characteristics



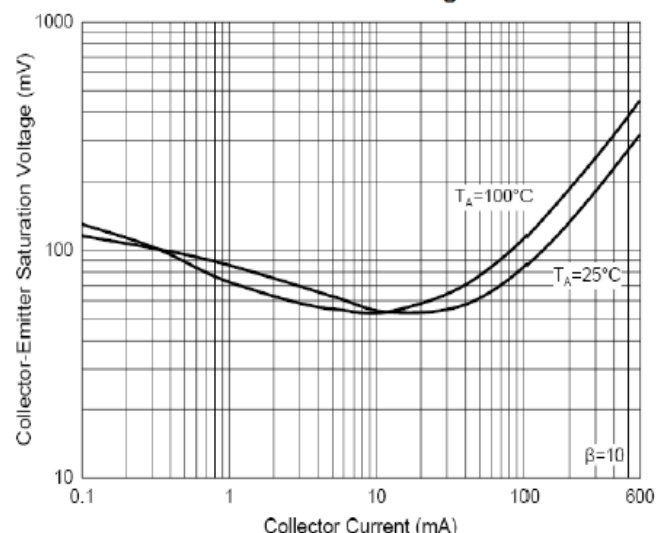
DC Current Gain Characteristics



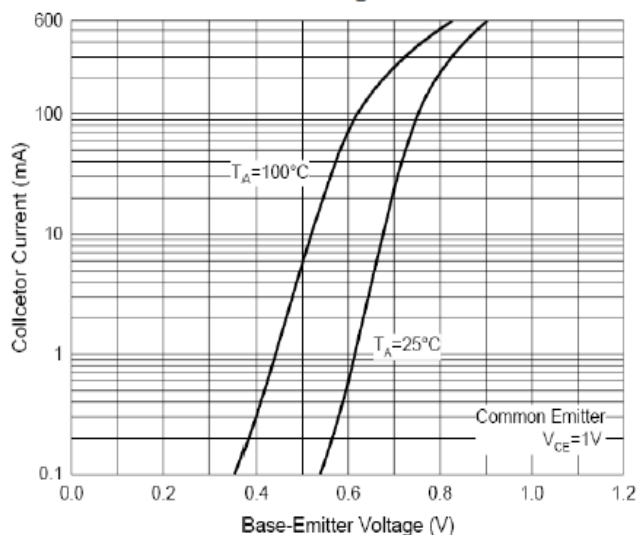
Base-Emitter Saturation Voltage Characteristics



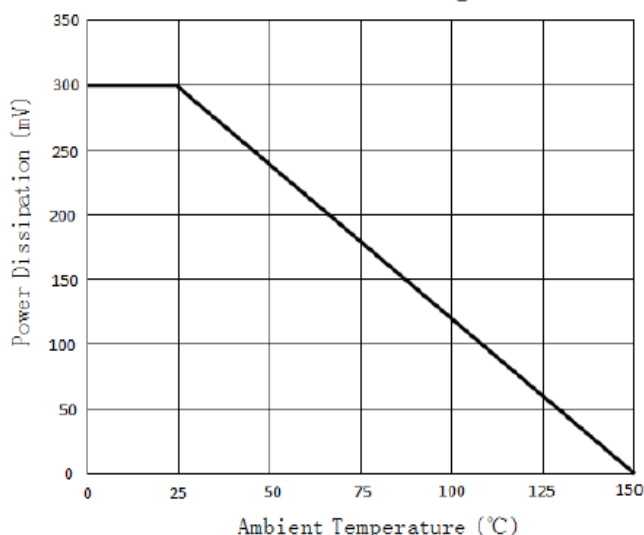
Collector-Emitter Saturation Voltage Characteristics



Base-Emitter Voltage Characteristics

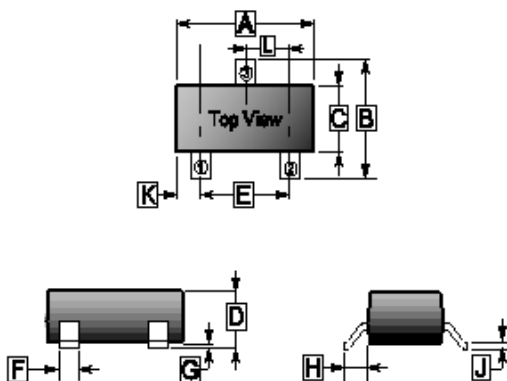


Collector Power Derating Curve



PACKAGE OUTLINE DIMENSIONS

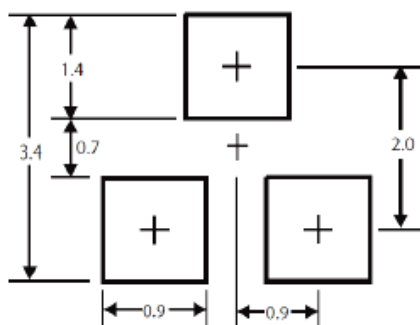
SOT-23



REF.	Millimeter	
	Min.	Max.
A	2.65	3.10
B	2.10	3.00
C	1.10	1.80
D	0.89	1.40
E	1.70	2.30
F	0.28	0.55
G	-	0.18
H	0.55 REF.	
J	0.05	0.26
K	0.60 REF.	
L	0.95 TYP.	

MOUNTING PAD LAYOUT

SOT-23



*Dimensions in millimeters