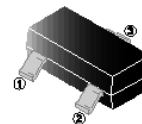


RoHS Compliant Product
A suffix of "-C" specifies halogen and lead free

FEATURES

- Epitaxial Planar Die Construction
- Complementary to MMDT3906W-C
- Ideal for Medium Power Amplification and Switching

SOT-323



MARKING

1A

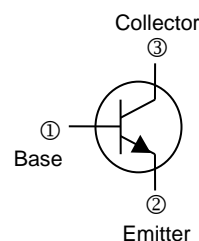
K2N

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-323	3K	7 inch

ORDER INFORMATION

Part Number	Type
MMBT3904W-C	Lead (Pb)-free and Halogen-free



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

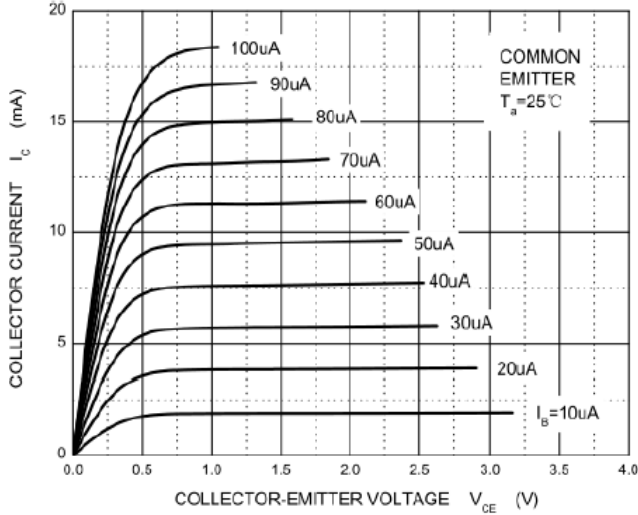
Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V _{CBO}	60	V
Collector-Emitter Voltage	V _{CEO}	40	
Emitter-Base Voltage	V _{EBO}	5	
Collector Current	I _C	200	mA
Collector Power Dissipation	P _C	200	mW
Thermal Resistance from Junction-Ambient	R _{θJA}	625	°C/W
Junction, Storage Temperature Range	T _J , T _{STG}	150, -55~150	°C

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

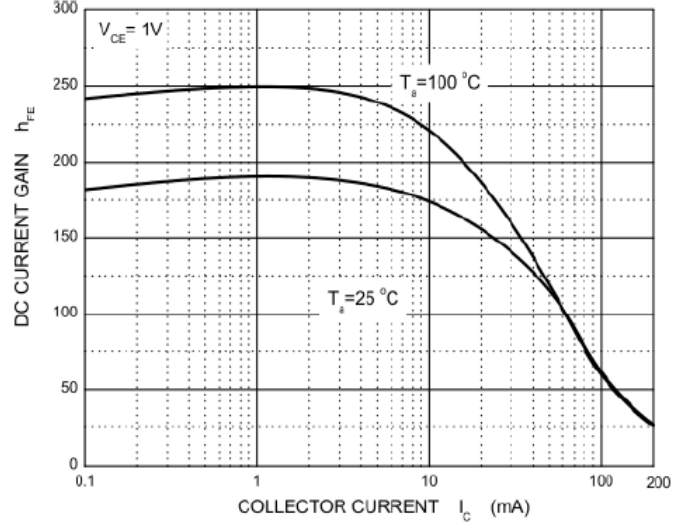
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	60	-	-	V	$I_C=10\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40	-	-		$I_C=1\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	-	-		$I_E=10\mu\text{A}, I_C=0$
Collector Cut-off Current	I_{CBO}	-	-	60	nA	$V_{CB}=60\text{V}, I_E=0$
Collector Cut-off Current	I_{CEX}	-	-	50		$V_{CE}=30\text{V}, I_{BE(off)}=3\text{V}$
DC Current Gain	h_{FE}	40	-	-		$I_C=100\mu\text{A}, V_{CE}=1\text{V}$
		70	-	-		$I_C=1\text{mA}, V_{CE}=1\text{V}$
		100	-	300		$I_C=10\text{mA}, V_{CE}=1\text{V}$
		60	-	-		$I_C=50\text{mA}, V_{CE}=1\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.25	V	$I_C=10\text{mA}, I_B=1\text{mA}$
		-	-	0.3		$I_C=50\text{mA}, I_B=5\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-	-	0.85	V	$I_C=10\text{mA}, I_B=1\text{mA}$
		-	-	0.95		$I_C=50\text{mA}, I_B=5\text{mA}$
Transition Frequency	f_T	-	300	-	MHz	$I_C=10\text{mA}, V_{CE}=20\text{V}, f=100\text{MHz}$
Collector Output Capacitance	C_{ob}	-	4	-	pF	$V_{CB}=5\text{V}, I_E=0, f=1\text{MHz}$
Collector Input Capacitance	C_{ib}	-	8	-		$V_{EB}=0.5\text{V}, I_E=0, f=1\text{MHz}$
Delay Time	t_d	-	35	-		$V_{CC}=3\text{V}, V_{BE(off)}=0.5\text{V}, I_C=10\text{mA}, I_{B1}=1\text{mA}$
Rise Time	t_r	-	35	-		
Storage Time	t_s	-	225	-		
Fall Time	t_f	-	75	-		

TYPICAL CHARACTERISTICS

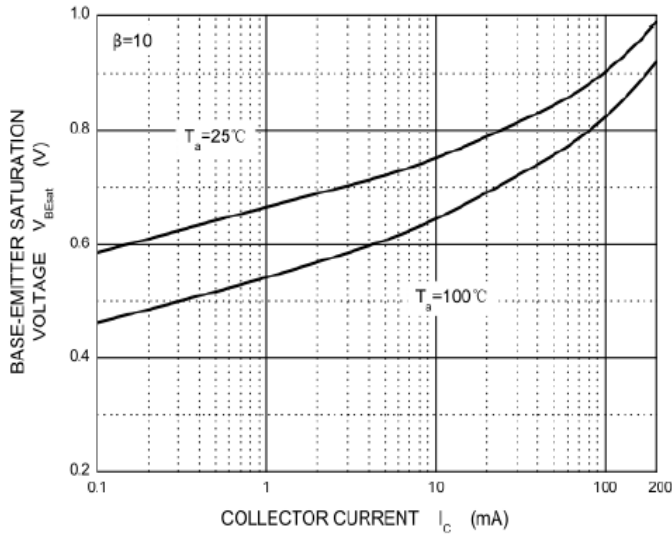
Static Characteristic



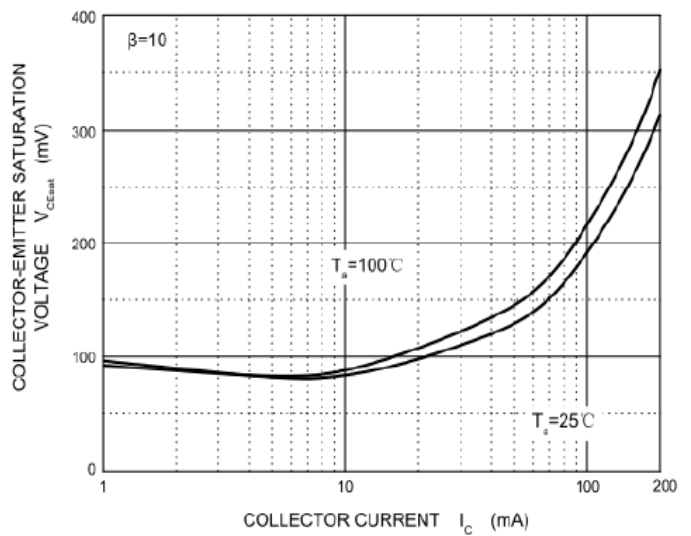
Hfe - Ic



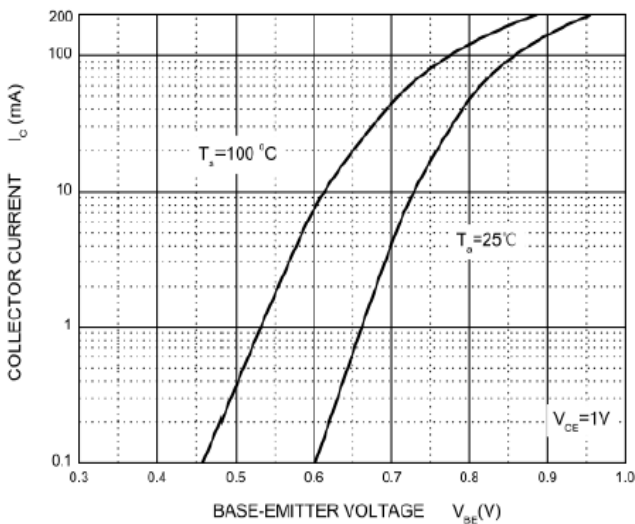
$V_{BEsat} - I_C$



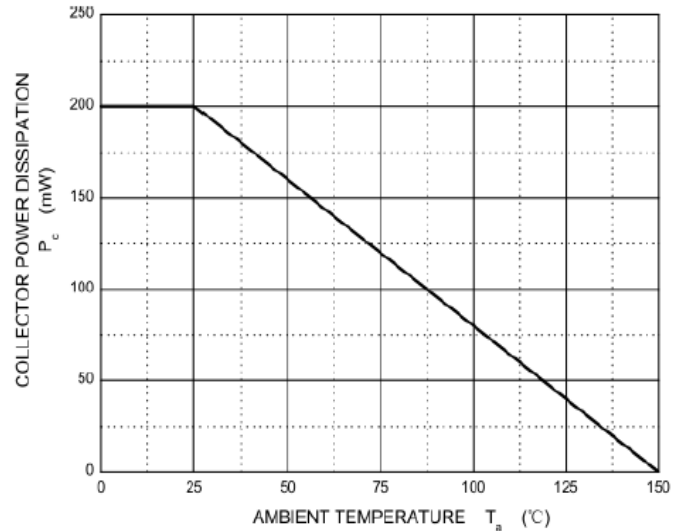
$V_{CEsat} - I_C$



$I_C - V_{BE}$

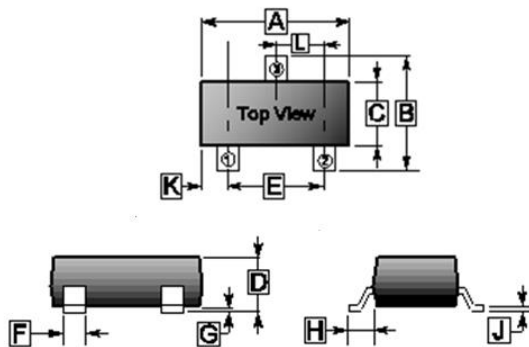


$P_c - T_a$



PACKAGE OUTLINE DIMENSIONS

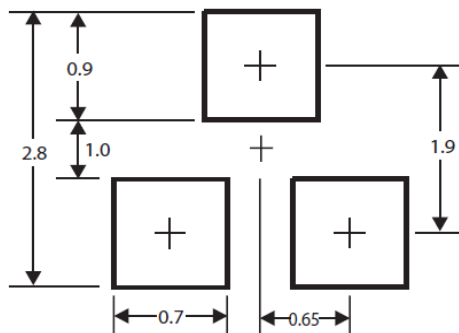
SOT-323



REF.	Millimeter	
	Min.	Max.
A	1.80	2.20
B	1.80	2.55
C	1.10	1.40
D	0.80	1.15
E	1.20	2.00
F	0.15	0.50
G	0.10 REF.	
H	0.525 REF.	
J	0.05	0.25
K	0.35 REF.	
L	0.65 TYP.	

MOUNTING PAD LAYOUT

SOT-323



*Dimensions in millimeters