Elektronische Bauelemente

MMBT2222A-C

0.6A, 75V

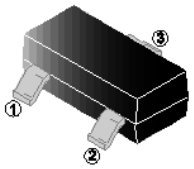
NPN Silicon General Purpose Transistor

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

FEATURES

- Capable of 300mW of Power Dissipation
- Operating & Storage Junction Temperature: -55~150°C
- Surface Mount SOT-23 Package

SOT-23



MARKING

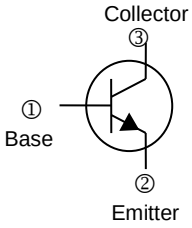
1P

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

ORDER INFORMATION

Part Number	Type
MMBT2222A-C	Lead (Pb)-free and Halogen-free



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

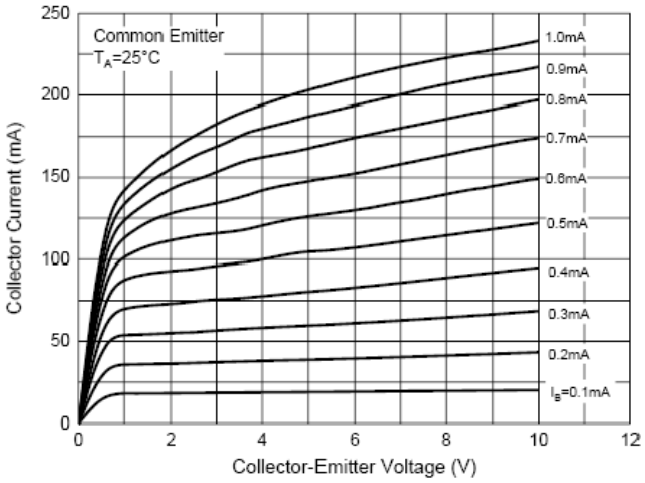
Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	
Emitter-Base Voltage	V_{EBO}	6	
Collector Current-Continuous	I_C	600	mA
Collector Power Dissipation	P_D	300	mW
Thermal Resistance, Junction-Ambient	$R_{\theta JA}$	417	°C/W
Junction, Storage Temperature	T_J, T_{STG}	150, -55~150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

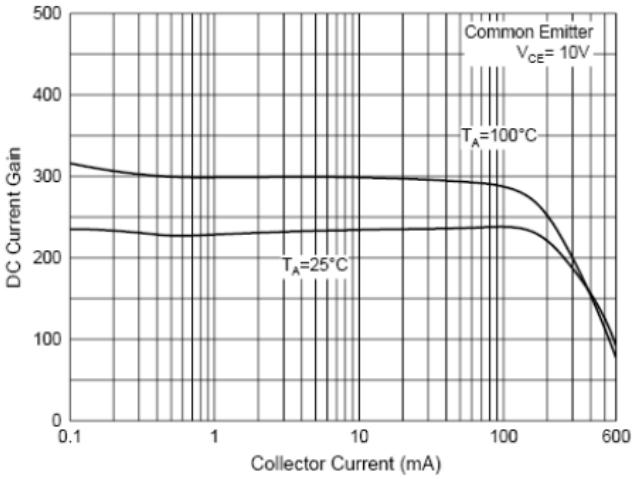
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	75	-	-	V	I_C=10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40	-	-		I_C=10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6	-	-		I_E=10μA, I_C=0
Collector Cut-off Current	I_{CBO}	-	-	10	nA	V_{CB}=60V, I_E=0
Collector Cut-off Current	I_{CEX}	-	-	10		V_{CE}=60V, $V_{BE(off)}$=3V
DC Current Gain	h_{FE}	35	-	-		V_{CE}=10V, I_C=0.1mA
		50	-	-		V_{CE}=10V, I_C=1.0mA
		75	-	-		V_{CE}=10V, I_C=10mA
		100	-	300		V_{CE}=10V, I_C=150mA
		50	-	-		V_{CE}=1V, I_C=150mA
		40	-	-		V_{CE}=10V, I_C=500mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.3	V	I_C=150mA, I_B=15mA
		-	-	1		I_C=500mA, I_B=50mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	0.6	-	1.2	V	I_C=150mA, I_B=15mA
		-	-	2		I_C=500mA, I_B=50mA
Transition Frequency	f_T	-	300	-	MHz	V_{CE}=20V, I_C=20mA, f=100MHz
Output Capacitance	C_{ob}	-	8	-	pF	V_{CB}=10V, I_E=0, f=1MHz
Input Capacitance	C_{ibo}	-	25	-		V_{EB}=0.5V, I_C=0, f=1MHz
Delay Time	t_d	-	10	-	nS	V_{CC}=30V, V_{BE}=0.5V, I_C=150mA, I_{B1}=15mA
Rise Time	t_r	-	25	-		
Storage Time	t_s	-	225	-	nS	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA
Fall Time	t_f	-	60	-		

TYPICAL CHARACTERISTICS

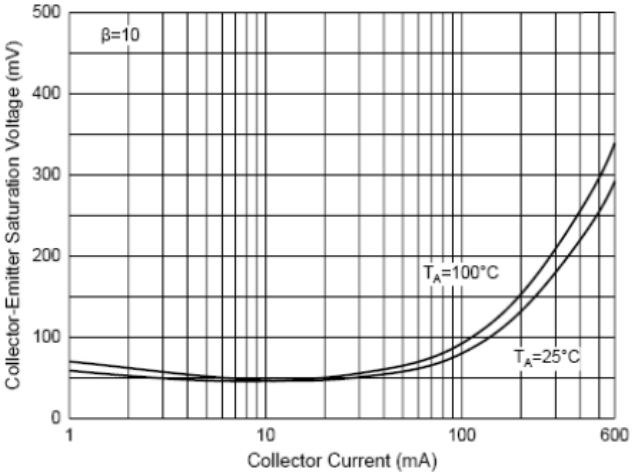
Static Characteristics



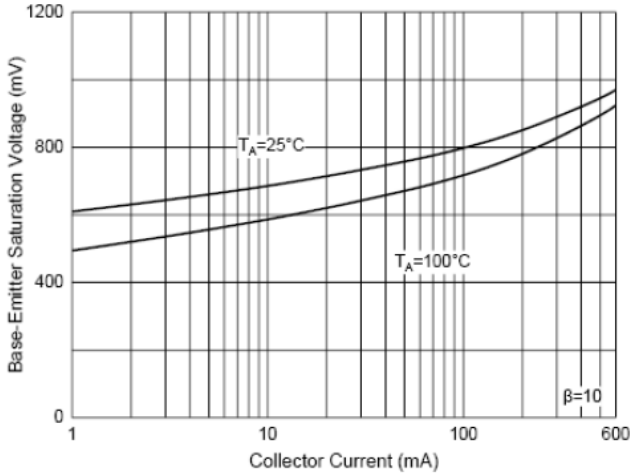
DC Current Gain Characteristics



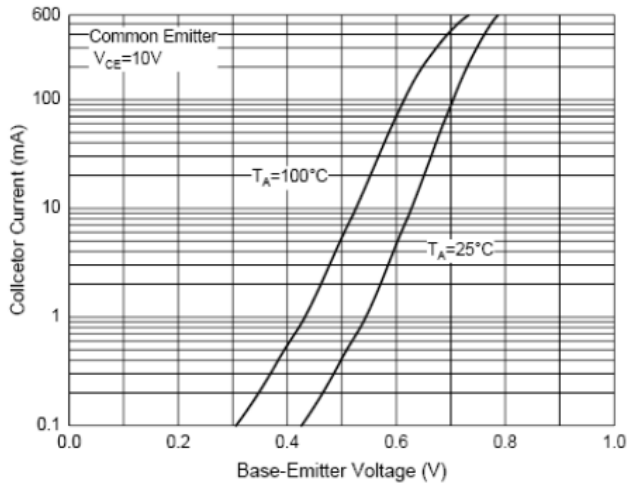
Collector-Emitter Saturation Voltage



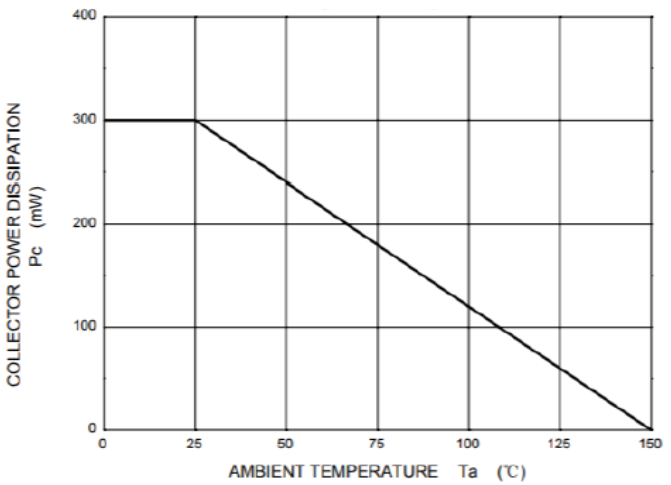
Base-Emitter Saturation Voltage



Base-Emitter Voltage Characteristics

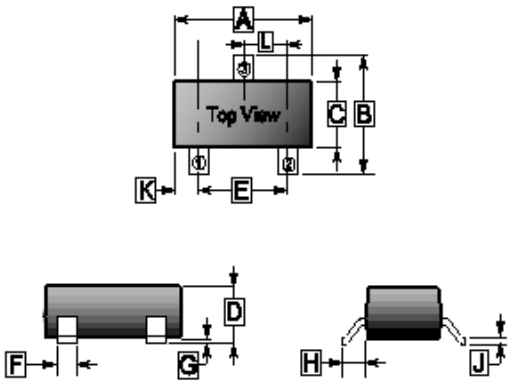


Collector Power Derating



PACKAGE OUTLINE DIMENSIONS

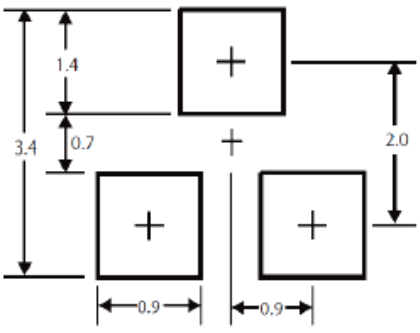
SOT-23



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