Elektronische Bauelemente

MMBT619

2A, 50V

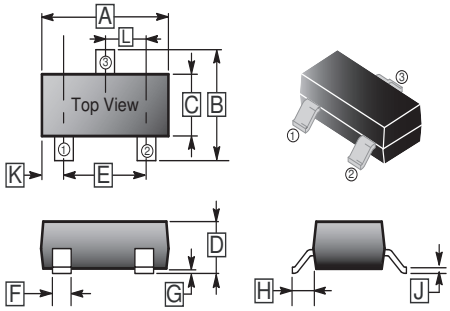
NPN Plastic Encapsulated Transistor

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

FEATURES

- Low Saturation Voltage

SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.65	3.10	G	0	0.18
B	2.10	3.00	H	0.55 REF.	
C	1.10	1.80	J	0.08	0.26
D	0	1.40	K	0.60 REF.	
E	1.70	2.30	L	0.95 TYP.	
F	0.28	0.55			

MARKING

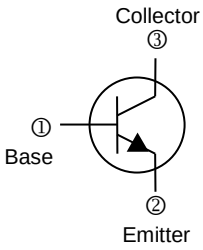
619

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

ORDER INFORMATION

Part Number	Type
MMBT619	Lead (Pb)-free
MMBT619-C	Lead (Pb)-free and Halogen-free



ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current-Continuous	I_C	2	A
Collector Power Dissipation	P_C	350	mW
Maximum Power Dissipation [1]	P_{CM}	625	
Thermal Resistance from Junction-Ambient	$R_{\theta JA}$	357	℃/W
Thermal Resistance from Junction-Ambient [1]		200	
Junction, Storage Temperature Range	T_J, T_{STG}	-55~150	℃

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50	-	-	V	I_C=100μA, I_E=0
Collector-Emitter Breakdown Voltage [2]	$V_{(BR)CEO}$	50	-	-	V	I_C=10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	-	-	V	I_E=100μA, I_C=0
Collector Cut-Off Current	I_{CBO}	-	-	100	nA	V_{CB}=40V, I_E=0
Emitter Cut-Off Current	I_{EBO}	-	-	100	nA	V_{EB}=4V, I_C=0
DC Current Gain [2]	h_{FE}	200	-	-		V_{CE}=2V, I_C=10mA
		300	-	-		V_{CE}=2V, I_C=200mA
		200	-	-		V_{CE}=2V, I_C=1A
		100	-	-		V_{CE}=2V, I_C=2A
		-	40	-		V_{CE}=2V, I_C=6A
Collector-Emitter Saturation Voltage [2]	$V_{CE(sat)}$	-	-	20	mV	I_C=100mA, I_B=10mA
		-	-	200		I_C=1A, I_B=10mA
		-	-	220		I_C=2A, I_B=100mA
Base-Emitter Saturation Voltage [2]	$V_{BE(sat)}$	-	-	1	V	I_C=2A, I_B=50mA
Base-Emitter On Voltage [2]	$V_{BE(on)}$	-	-	1	V	I_C=2A, V_{CE}=2V
Collector Output Capacitance	C_{ob}	-	20	-	pF	V_{CB}=10V, f=1MHz
Turn-On Time	$t_{(on)}$	-	170	-	nS	V_{CC}=10V, I_C=1A, I_{B1}= -I_{B2}=10mA
Turn-Off Time	$t_{(off)}$	-	750	-		
Transition Frequency	f_T	-	100	-	MHz	V_{CE}=10V, I_C=50mA, f=100MHz

Notes:
1. Maximum power dissipation is calculated assuming that the device is mounted on a ceramic substrate measuring 15 x 15 x 0.6mm.
2. Pulse test: pulse width≦300μs, duty cycle≦2%.

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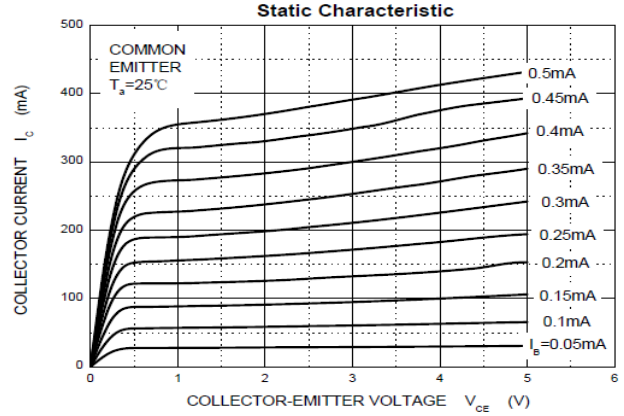
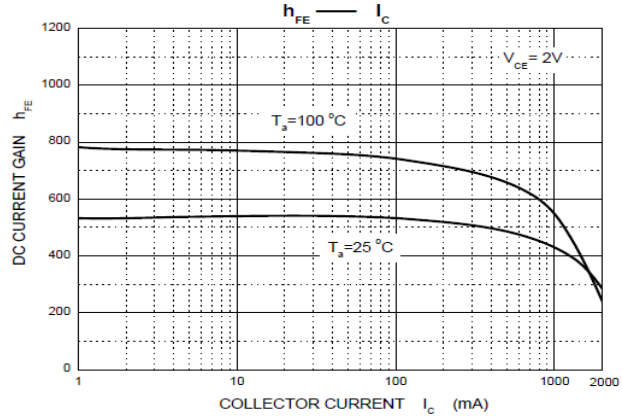
TYPICAL CHARACTERISTICS

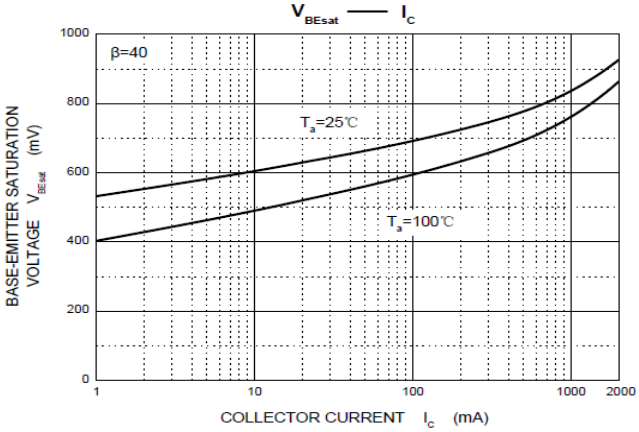
Static Characteristic



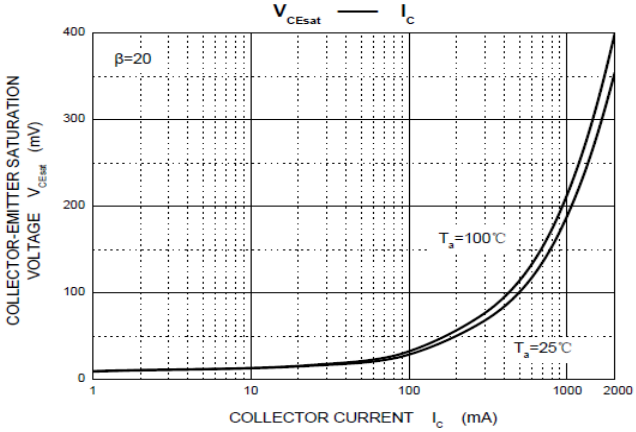
h_{FE} — I_C



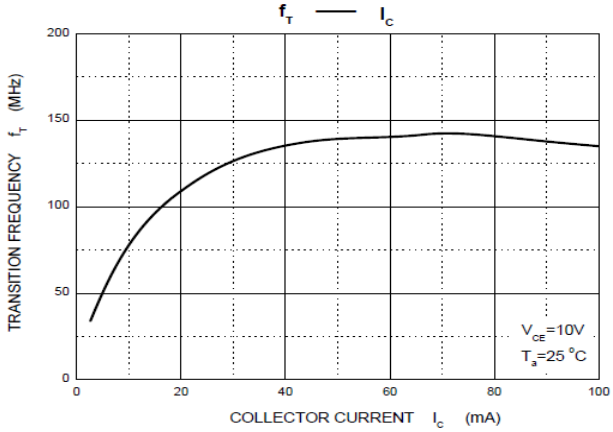
V_{BEsat} — I_C



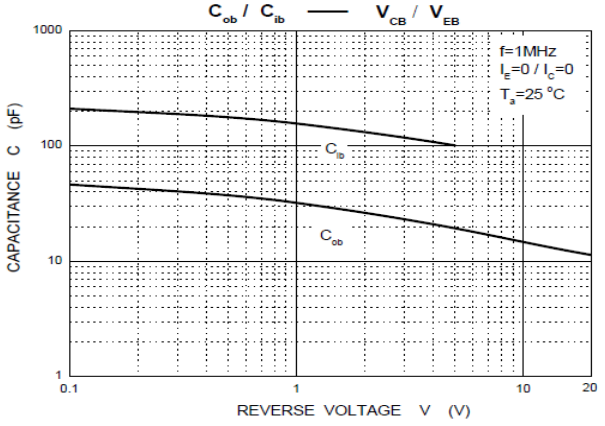
V_{CEsat} — I_C



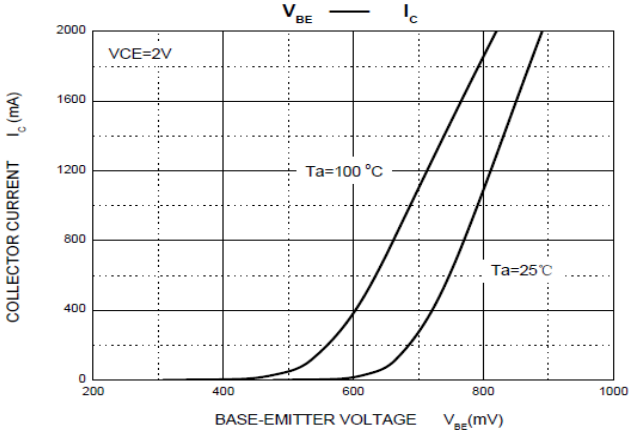
f_T — I_C



C_{ob} / C_{ib} — V_{CB} / V_{EB}



V_{BE} — I_C



P_c — T_a