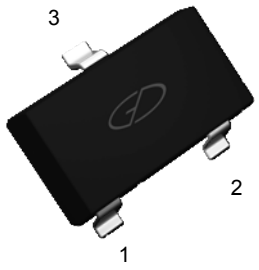
GOOD-ARK
SEMICONDUCTOR

MMBT619
NPN Transistor

Features

■ Low saturation voltage



SOT-23

1. BASE
2. EMITTER
3. COLLECTOR

Absolute Maximum Ratings (T_A = 25 °C unless otherwise noted)

Parameter	Symbol	Value	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	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	°C/W
Maximum Power Dissipation[1]	P_{CM}	0.625	W
Thermal Resistance from Junction to Ambient[1]	$R_{\theta JA}$	200	°C/W
Junction & Storage Temperature	T_J T_{STG}	-55 to +150	°C

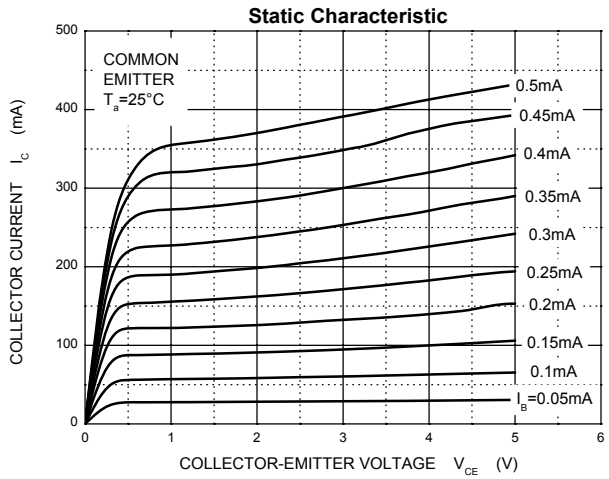
Electrical Characteristics (T_A = 25 °C unless otherwise noted)

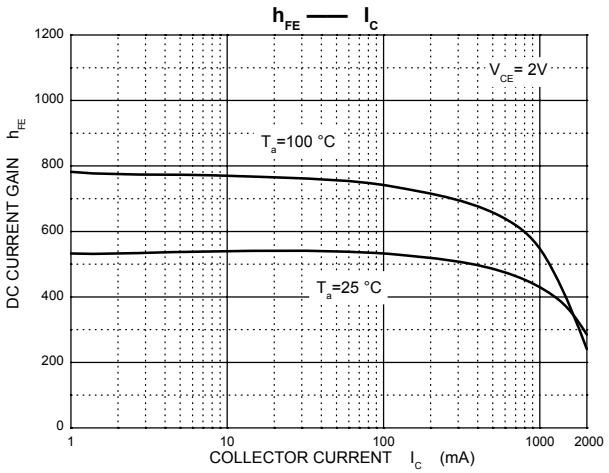
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=100μA,I_E=0	50	-	-	V
Collector-Emitter Breakdown Voltage[2]	$V_{(BR)CEO}$	I_C=10mA,I_B=0	50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=100μA ,I_C=0	5	-	-	V
Collector Cut-Off Current	I_{CBO}	V_{CB}=40V,I_E=0	-	-	100	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=4V,I_C=0	-	-	100	nA
DC Current Gain[2]	$h_{FE(1)}$	V_{CE}=2V, I_C=10mA	200	-	-	-
	$h_{FE(2)}$	V_{CE}=2V, I_C=0.2A	300	-	-	-
	$h_{FE(3)}$	V_{CE}=2V, I_C=1A	200	-	-	-
	$h_{FE(4)}$	V_{CE}=2V, I_C=2A	100	-	-	-
	$h_{FE(5)}$	V_{CE}=2V, I_C=6A	-	40	-	-
Collector-Emitter Saturation Voltage[2]	$V_{CE(sat)1}$	I_C=0.1A, I_B=10mA	-	-	20	mV
	$V_{CE(sat)2}$	I_C=1A, I_B=10mA	-	-	200	mV
	$V_{CE(sat)3}$	I_C=2A, I_B=100mA	-	-	220	mV
Base-Emitter Saturation Voltage[2]	$V_{BE(sat)}$	I_C=2A, I_B=50mA	-	-	1	V
Base-Emitter On Voltage[2]	$V_{BE(on)}$	I_C=2A, V_{CE}=2V	-	-	1	V
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz	-	-	20	pF
Turn-On Time	$t_{(on)}$	V_{CC}=10V, I_C=1A, I_{B1}=-I_{B2}=10mA	-	170	-	nS
Turn-Off Time	$t_{(off)}$		-	750	-	nS
Transition Frequency	f_T	V_{CE}=10V,I_C=50mA, f=100MHz	100	-	-	MHz

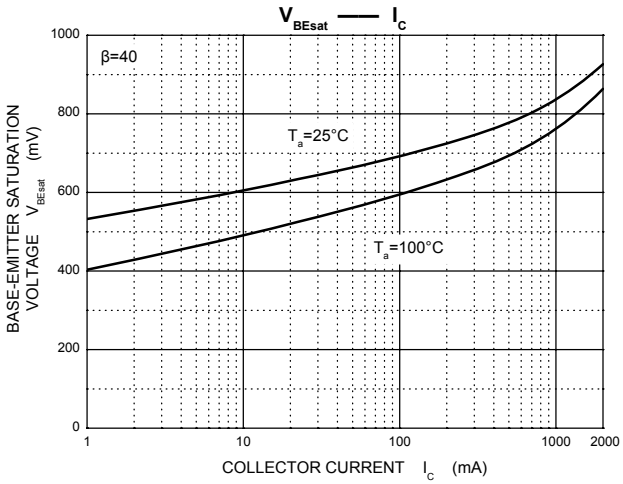
Notes:

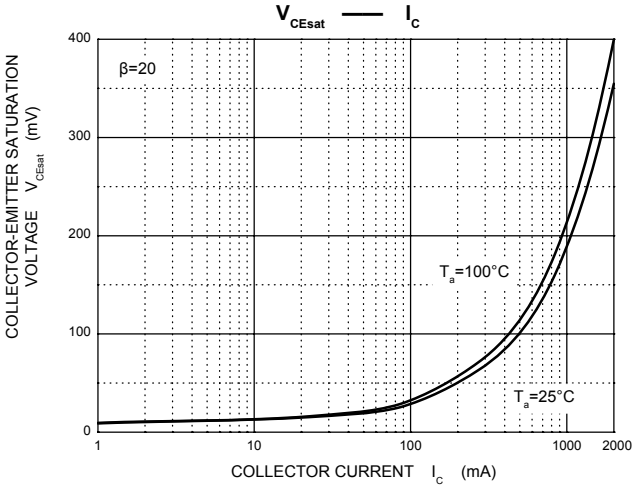
1. Maximum power dissipation is calculated assuming that the device is mounted on a ceramic substrate measuring 15x15x0.6mm.
2. Pulse test: Pulse width≤300μS, duty cycle≤2.0%.

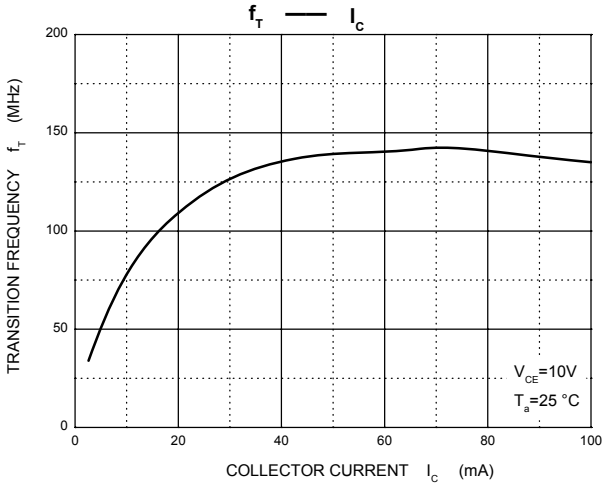
Typical Characteristic Curves

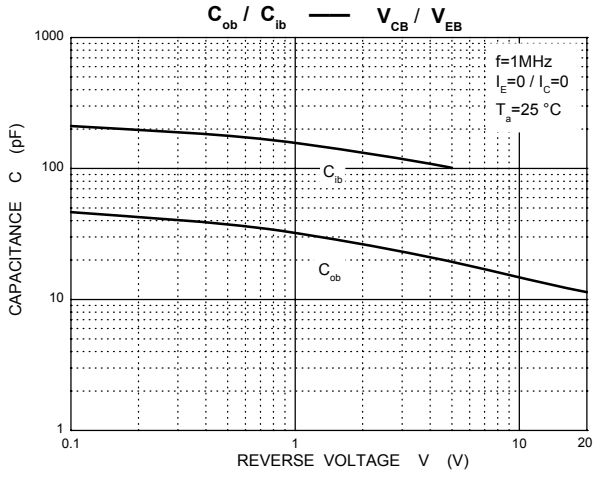




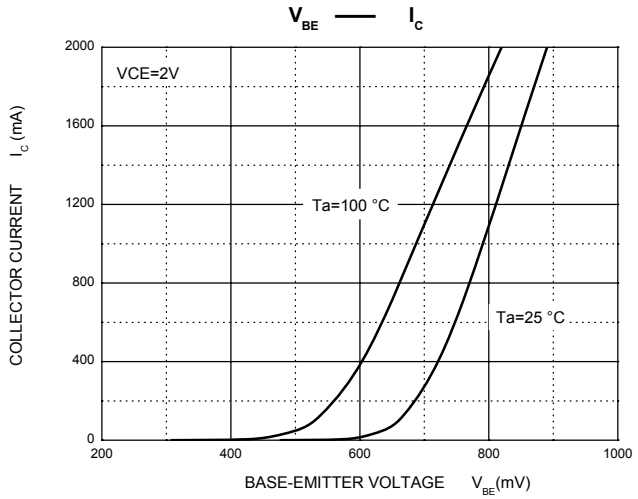


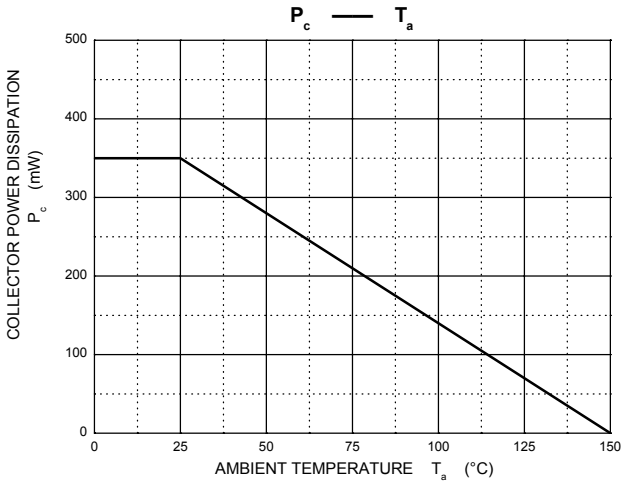




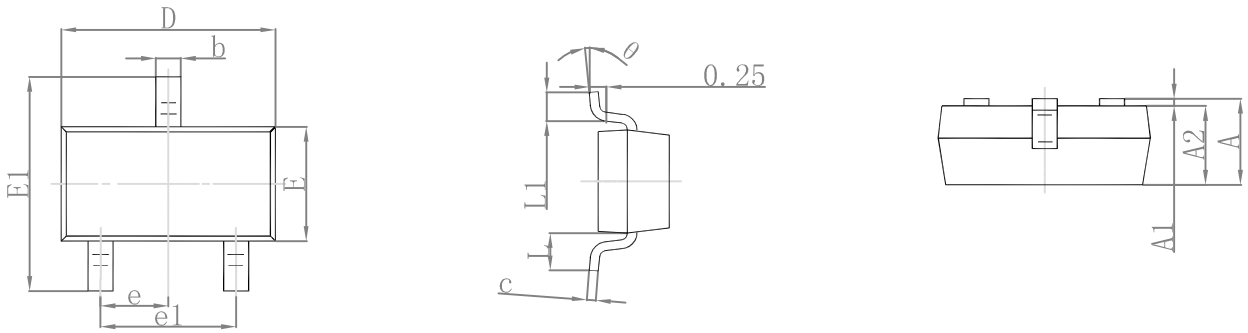


Typical Characteristic Curves



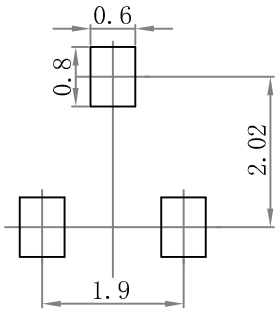


Package Outline Dimensions SOT-23



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

Marking and Ordering Information

Device	Package	Marking	Quantity	HSF Status
MMT619	SOT-23	619	3000pcs / Reel	RoHS Compliant