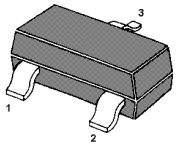
MMBT619

NPN Silicon Epitaxial Planar Transistor



1.BASE 2.EMITTER 3.COLLECTOR

TO-236 Plastic Package

Absolute Maximum Ratings (T_a = 25℃)

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	I_C	2	A
Peak Pulse Current	I_{CM}	6	A
Power Dissipation	P_{tot} [1)]	625	mW
Junction Temperature	T_j	- 55 to + 150	℃
Storage Temperature Range	T_{stg}	- 55 to + 150	℃

[1)] Maximum power dissipation is calculated assuming that the device is mounted on a ceramic, substrate measuring 15 x 15 x 0.6 mm.

Characteristics at T_a = 25℃

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at V_{CE} = 2 V, I_C = 10 mA	h_{FE}	200	-	-	-
at V_{CE} = 2 V, I_C = 200 mA	h_{FE}	300	-	-	-
at V_{CE} = 2 V, I_C = 1 A	h_{FE}	200	-	-	-
at V_{CE} = 2 V, I_C = 2 A	h_{FE}	100	-	-	-
at V_{CE} = 2 V, I_C = 6 A	h_{FE}	-	40	-	-
Collector Base Cutoff Current at V_{CB} = 40 V	I_{CBO}	-	-	100	nA
Collector Emitter Cutoff Current at V_{CE} = 40 V	I_{CES}	-	-	100	nA
Emitter Base Cutoff Current at V_{EB} = 4 V	I_{EBO}	-	-	100	nA
Collector Base Breakdown Voltage at I_C = 100 µA	$V_{(BR)CBO}$	50	-	-	V
Collector Emitter Breakdown Voltage at I_C = 10 mA	$V_{(BR)CEO}$	50	-	-	V
Emitter Base Breakdown Voltage at I_E = 100 µA	$V_{(BR)EBO}$	5	-	-	V
Collector Emitter Saturation Voltage					
at I_C = 100 mA, I_B = 10 mA	V_{CEsat}	-	-	20	mV
at I_C = 1 A, I_B = 10 mA		-	-	200	
at I_C = 2 A, I_B = 50 mA		-	-	220	
Base Emitter Saturation Voltage at I_C = 2 A, I_B = 50 mA	V_{BEsat}	-	-	1	V
Base Emitter Voltage at V_{CE} = 2 V, I_C = 2 A	$V_{BE(on)}$	-	-	1	V
Transition Frequency at V_{CE} = 10 V, I_C = 50 mA, f = 100 MHz	f_T	100	-	-	MHz
Collector Output Capacitance at V_{CB} = 10 V, f = 1 MHz	C_{ob}	-	-	20	pF
Turn-On Time at V_{CC} = 10 V, I_C = 1 A, I_{B1} = - I_{B2} =10 mA	$t_{d(on)}$	-	170	-	ns
Turn-Off Time at V_{CC} = 10 V, I_C = 1 A, I_{B1} = - I_{B2} =10 mA	$t_{d(off)}$	-	150	-	ns

Fig.1 IC - VBE(on)
at VCE= 2V,Ta= 25C

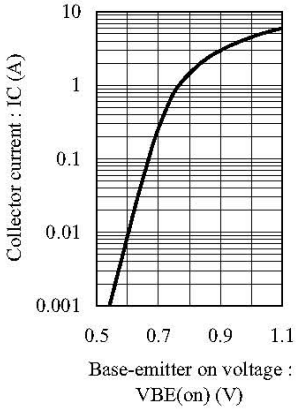


Fig.2 hFE - IC
at VCE= 2V, Ta= 25C

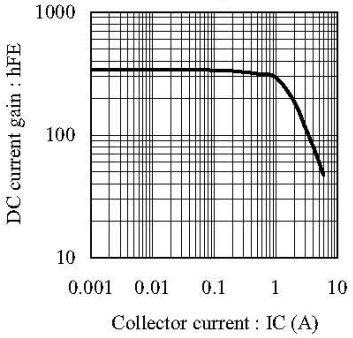


Fig.3 VCE(sat) - IC
at IC/IB= 10, Ta= 25C

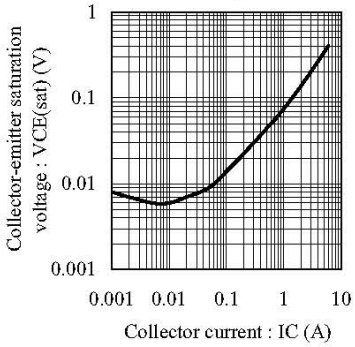


Fig.4 VCE(sat) - IC
at IC/IB= 40, Ta= 25C

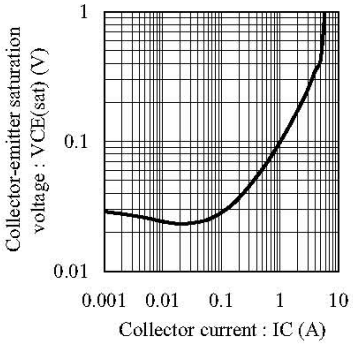


Fig.5 VCE(sat) - IC
at IC/IB= 100, Ta= 25C

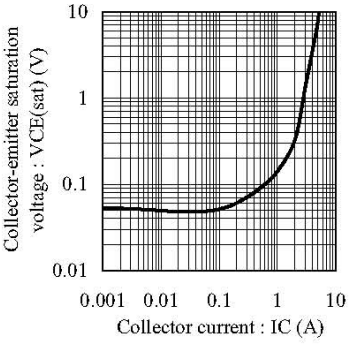


Fig.6 VBE(sat) - IC
at IC/IB= 40, Ta= 25C

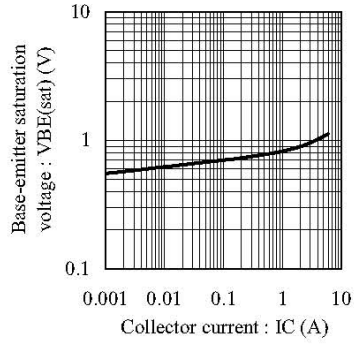


Fig.7 fT - IE
at VCE= 10V, Ta= 25C

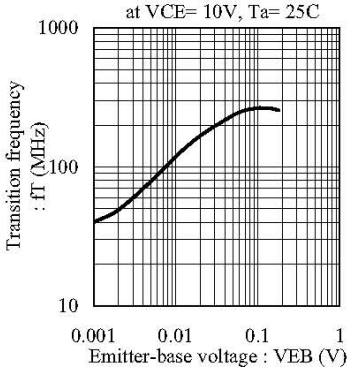


Fig.8 Cob - VCB
at f= 1MHz, Ta= 25C

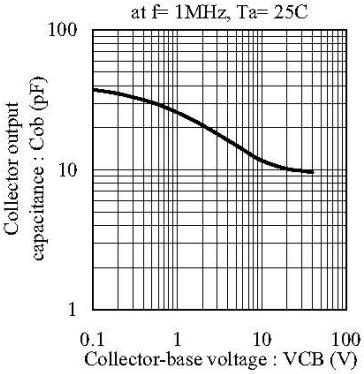


Fig.9 Cib - VEB
at f=1MHz, Ta= 25C