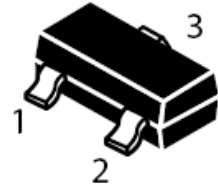
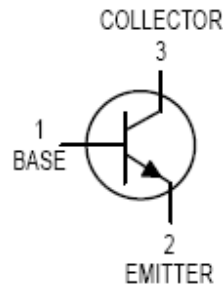


NPN General Purpose Transistor
FEATURES

- For switching and amplifier applications.
- Complementary PNP Type Available (MMBT5401)

MECHANICAL DATA

- Case: SOT-23 Plastic
- Case material: "Green" molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Lead Free in RoHS 2002/95/EC Compliant

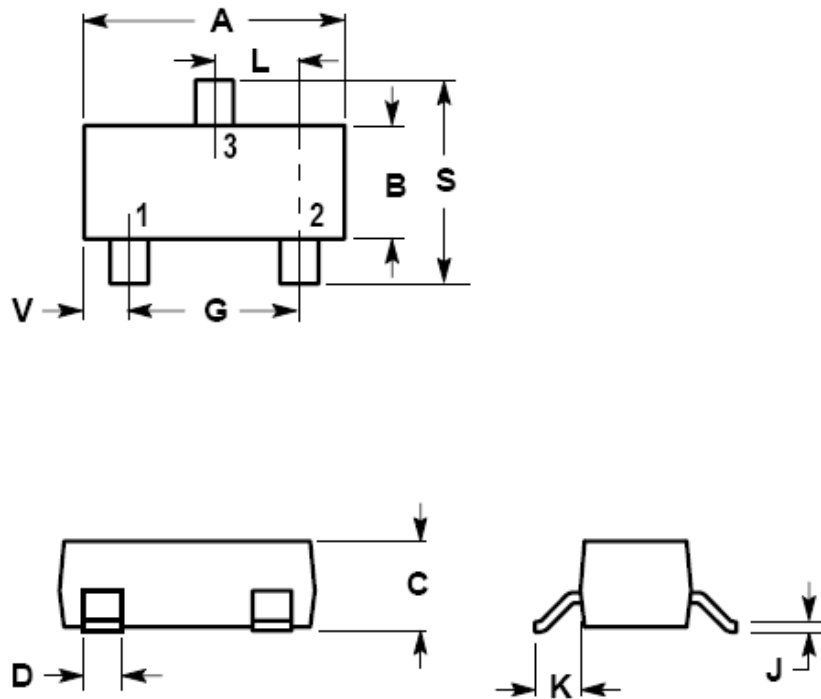

Maximum Ratings @ $T_A = 25^\circ\text{C}$

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current -Continuous	I_C	600	mA
Collector Power Dissipation	P_C	300	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55~+150	$^\circ\text{C}$

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	$I_C=100\mu\text{A}, I_E=0$	V_{CBO}	180			V
Collector-emitter breakdown voltage	$I_C=1\text{mA}, I_B=0$	V_{CEO}	160			V
Emitter-base breakdown voltage	$I_E=10\mu\text{A}, I_C=0$	V_{EBO}	6			V
Collector-base cut-off current	$V_{CB}=120\text{V}, I_E=0$	I_{CBO}			50	nA
Emitter-base cut-off current	$V_{EB}=4\text{V}, I_C=0$	I_{EBO}			50	nA
DC current gain	$V_{CE}=5\text{V}, I_C=1\text{mA}$	h_{FE1}	80			V
	$V_{CE}=5\text{V}, I_C=10\text{mA}$	h_{FE2}	100		300	V
	$V_{CE}=5\text{V}, I_C=150\text{mA}$	h_{FE3}	50			V
Collector-emitter saturation voltage	$I_C=10\text{mA}, I_B=1\text{mA}$	$V_{CE(sat)1}$			0.15	V
	$I_C=50\text{mA}, I_B=5\text{mA}$	$V_{CE(sat)2}$			0.2	V
Base-emitter saturation voltage	$I_C=10\text{mA}, I_B=1\text{mA}$	$V_{BE(sat)1}$			1	V
	$I_C=50\text{mA}, I_B=5\text{mA}$	$V_{BE(sat)2}$			1	V
Transition frequency	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	f_T	100		300	MHz
Collector output capacitance	$V_{CB}=-10\text{V}, I_E=0, f=1\text{MHz}$	C_{ob}			6	pF
Input capacitance	$V_{EB}=0.5\text{V}, I_E=0, f=1\text{MHz}$	C_{iob}			20	pF
Noise figure	$V_{CE}=5\text{V}, I_C=0.25\text{mA}, f=10\text{Hz to } 5.7\text{KHz}, R_s=1\text{k}\Omega$	NF			8	dB

SOT-23 Outline Dimension



Symbol	Dimension In Millimeters	
	Min	Max.
A	2.80	3.04
B	1.20	1.40
C	0.89	1.11
D	0.37	0.50
G	1.78	2.04
J	0.085	0.177
K	0.35	0.69
L	0.89	1.02
S	2.10	2.64
V	0.45	0.60

Device Marking :

Device P/N	Marking code
MMBT5551	G1

Electrical characteristic curves

Fig.1 DC Current Gain

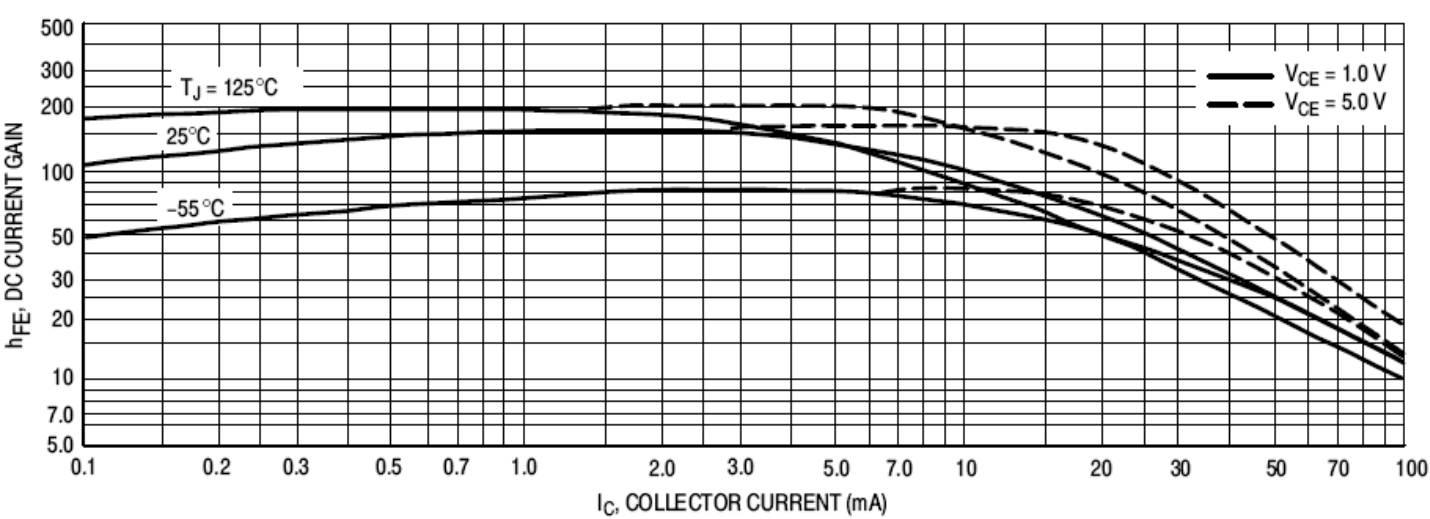


Fig.2 Collector Saturation Region

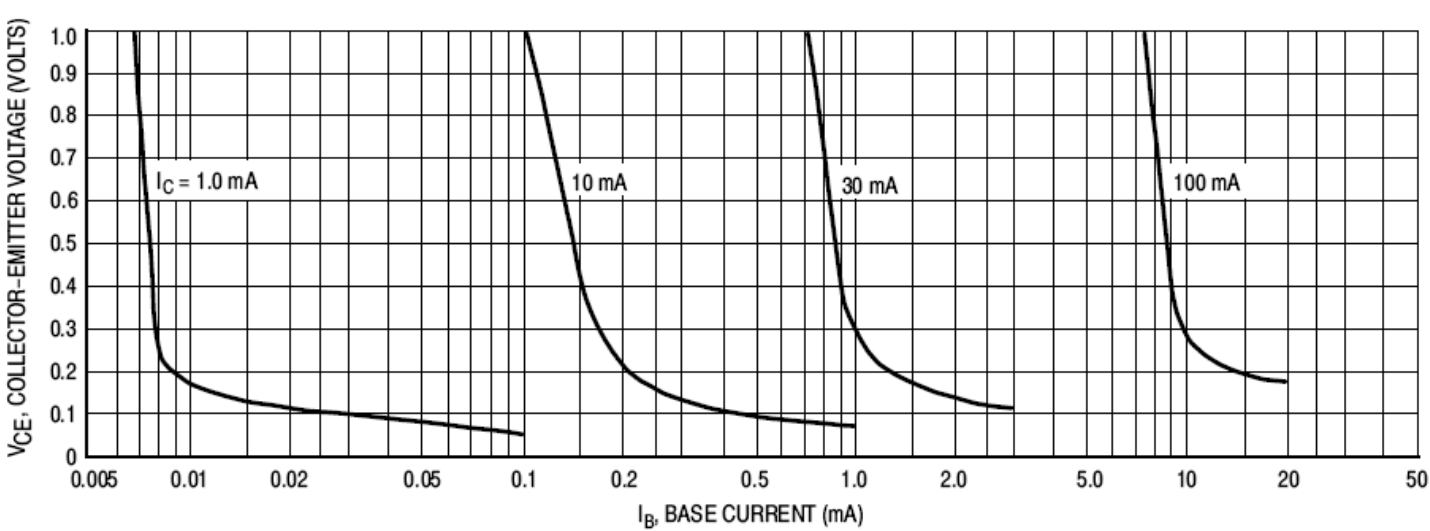


Fig.3 “On” Voltages

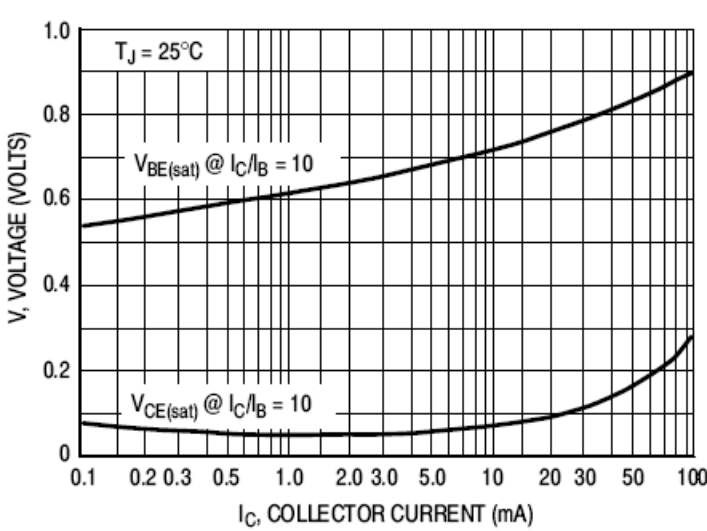
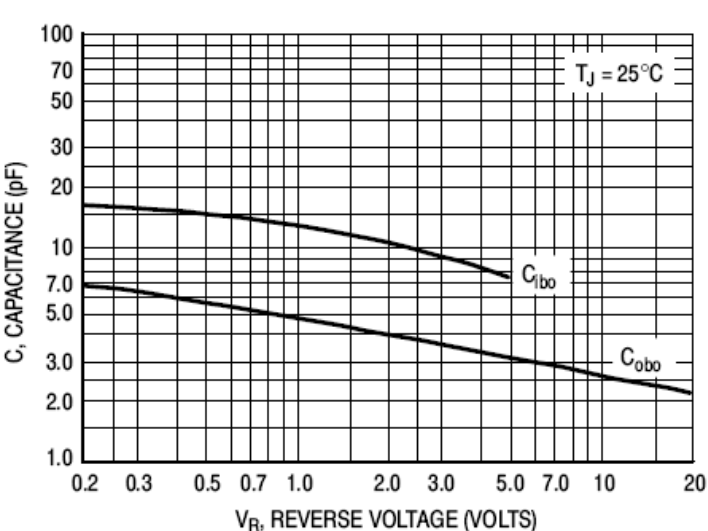


Fig.4 Capacitances



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New Marking Rule Notification

Range: In order to have well management in process control, the new marking rule is applied to small signal device including Switching Diode, Transistor and Schottky Diode.

Package: SOT-23 / SOT-323 / SOT-523

