

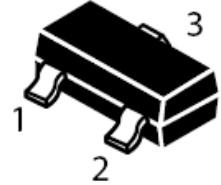
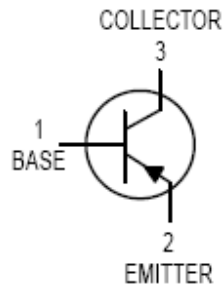
PNP General Purpose Transistor

FEATURES

- Ideal for Medium Power Amplification and Switching
- Complementary PNP Type available(MMBT2222A)

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



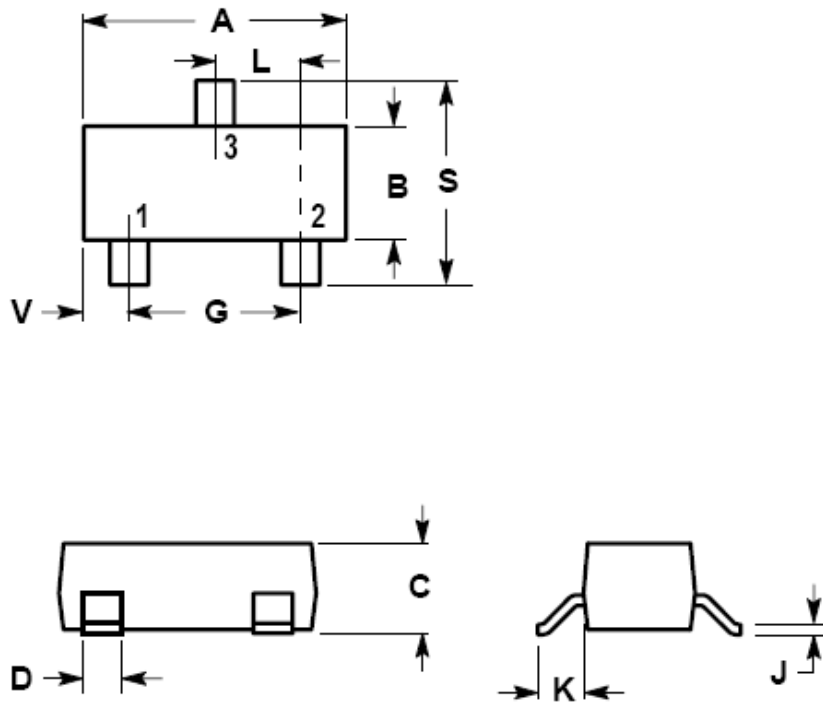
Maximum Ratings @ $T_A = 25^\circ\text{C}$

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current -Continuous	I_C	-600	mA
Collector Power Dissipation	P_C	250	mW
Thermal Resistance, junction to Ambient	$R_{\theta JA}$	500	$^\circ\text{C}/\text{W}$
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

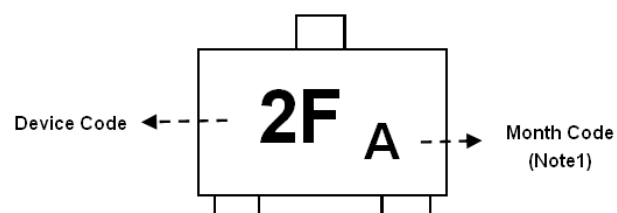
Characteristic	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	$I_C = -10\mu\text{A}, I_E = 0$	V_{CBO}	-60			V
Collector-emitter breakdown voltage	$I_C = -10\text{mA}, I_B = 0$	V_{CEO}	-60			V
Emitter-base breakdown voltage	$I_E = -10\mu\text{A}, I_C = 0$	V_{EBO}	-5			V
Collector-base cut-off current	$V_{CB} = -50\text{V}, I_E = 0$	I_{CBO}			-20	nA
Emitter-base cut-off current	$V_{EB} = -3\text{V}, I_C = 0$	I_{EBO}			-10	nA
Collector-emitter cut-off current	$V_{CE} = -30\text{V}, V_{BE(off)} = -0.5\text{V}$	I_{CEX}			-50	nA
DC current gain	$V_{CE} = -10\text{V}, I_C = -150\text{mA}$	h_{FE1}	100		300	
	$V_{CE} = -10\text{V}, I_C = -0.1\text{mA}$	h_{FE2}	75			
	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$	h_{FE3}	100			
	$V_{CE} = -10\text{V}, I_C = -10\text{mA}$	h_{FE4}	100			
	$V_{CE} = -10\text{V}, I_C = -500\text{mA}$	h_{FE5}	50			
Collector-emitter saturation voltage	$I_C = -150\text{mA}, I_B = -15\text{mA}$	$V_{CE(sat)1}$			-0.4	V
	$I_C = -500\text{mA}, I_B = -50\text{mA}$	$V_{CE(sat)2}$			-1.6	V
Base-emitter saturation voltage	$I_C = -150\text{mA}, I_B = -15\text{mA}$	$V_{BE(sat)1}$			-1.3	V
	$I_C = -500\text{mA}, I_B = -50\text{mA}$	$V_{BE(sat)2}$			-2.6	V
Transition frequency	$V_{CE} = -20\text{V}, I_C = -50\text{mA}, f = 100\text{MHz}$	f_T	200			MHz
Delay time	$V_{CC} = -30\text{V}, I_C = -150\text{mA}, I_{B1} = -15\text{mA}$	T_d			10	nS
Rise time		T_r			25	nS
Storage time	$V_{CC} = -6\text{V}, I_C = -150\text{mA}$	T_s			225	nS
Fall time	$I_{B1} = -I_{B2} = -15\text{mA}$	T_f			60	nS

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:



Note1:

Odd Year	J	O	L	C	K	B	P	D	M	E	G	F
Even Year	W	N	Y	T	R	H	A	I	U	X	Z	S

Electrical characteristic curves

Fig.1 DC Current Gain vs. Collector Current

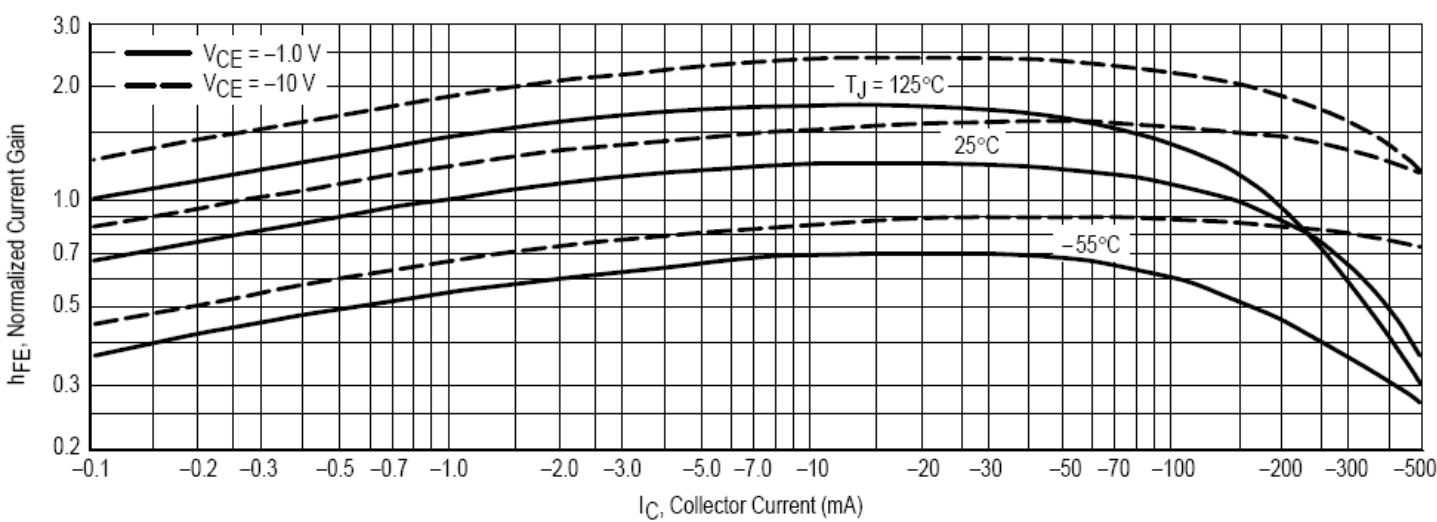


Fig.2 “On” Voltages

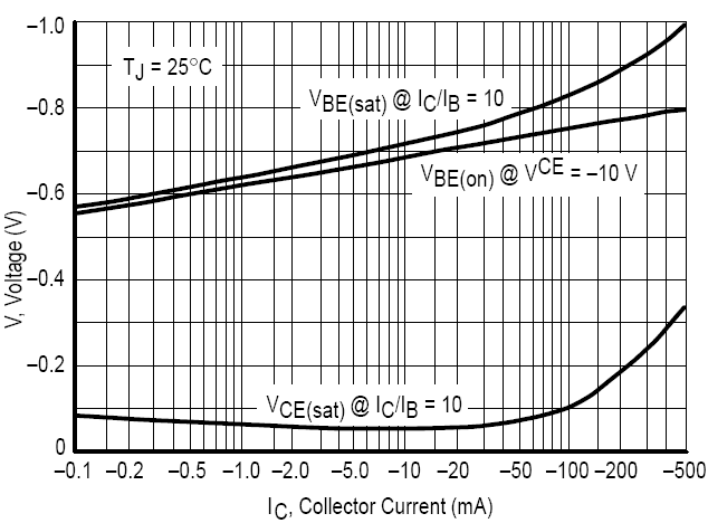
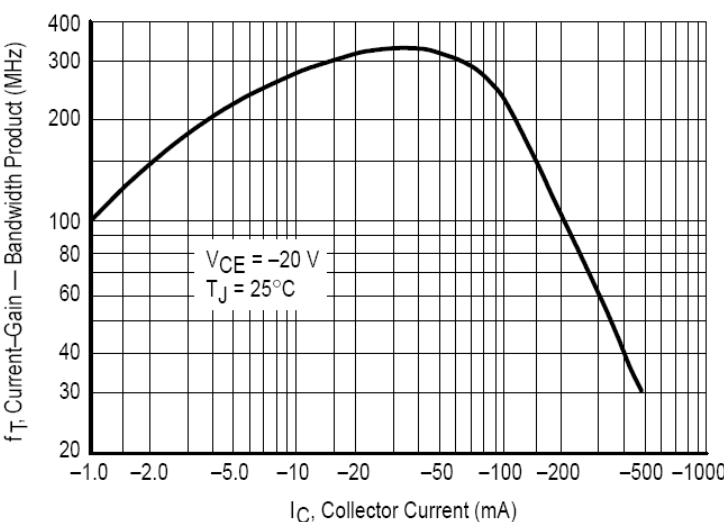


Fig.3 Gain-Bandwidth Product vs. Collector Current



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