

PNP General Purpose Transistor

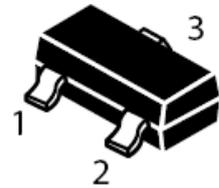
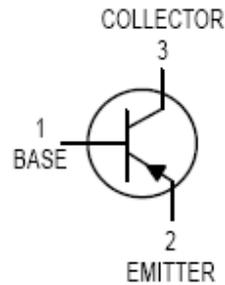
MMBT5401

FEATURES

- Ideal for Medium Power Amplification and Switching
- Complementary PNP Type available(MMBT5551)

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



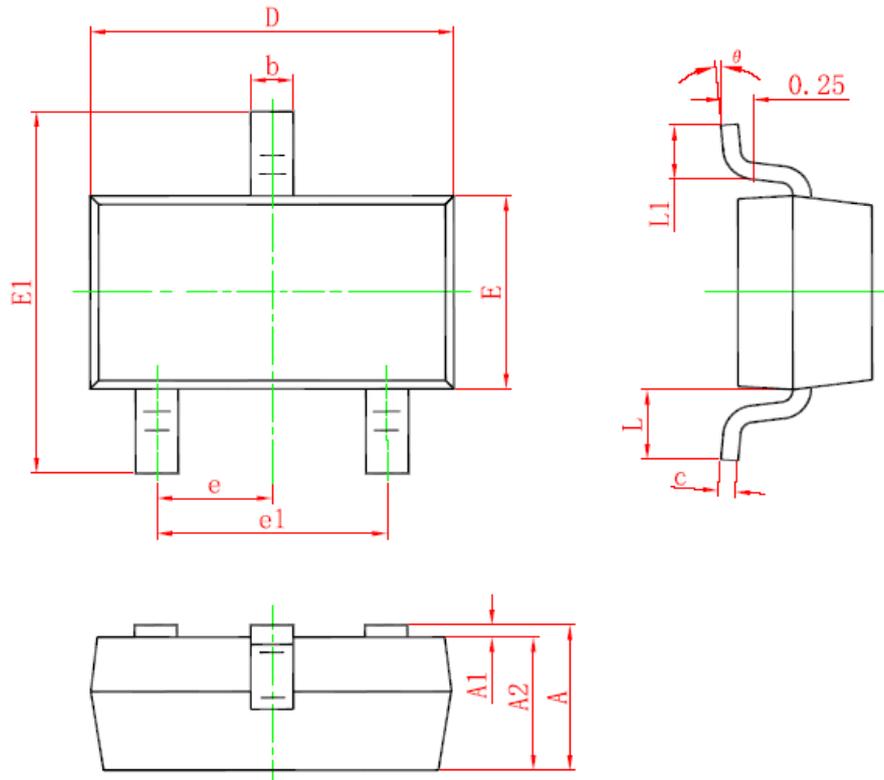
Maximum Ratings @ $T_A = 25^\circ\text{C}$

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-160	V
Collector-Emitter Voltage	V_{CEO}	-150	V
Emitter-Base Voltage	V_{EBO}	-5	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}	-160			V
Collector-emitter breakdown voltage	$I_C = -1\text{mA}, I_B = 0$	V_{CEO}	-150			V
Emitter-base breakdown voltage	$I_E = -10\mu\text{A}, I_C = 0$	V_{EBO}	-5			V
Collector-base cut-off current	$V_{CB} = -120\text{V}, I_E = 0$	I_{CBO}			-0.1	μA
Emitter-base cut-off current	$V_{EB} = -4\text{V}, I_C = 0$	I_{EBO}			-0.1	μA
DC current gain	$V_{CE} = -5\text{V}, I_C = -1\text{mA}$	h_{FE1}	80			
	$V_{CE} = -5\text{V}, I_C = -10\text{mA}$	h_{FE2}	100		300	
	$V_{CE} = -5\text{V}, I_C = -50\text{mA}$	h_{FE3}	50			
Collector-emitter saturation voltage	$I_C = -50\text{mA}, I_B = -5\text{mA}$	$V_{CE(sat)}$			-0.5	V
Base-emitter saturation voltage	$I_C = -50\text{mA}, I_B = -5\text{mA}$	$V_{BE(sat)}$			-1	V
Transition frequency	$V_{CE} = -5\text{V}, I_C = -10\text{mA}, f = 30\text{MHz}$	f_T	100			MHz

SOT-23 Outline Dimension



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°	6°

Device Marking :

Device P/N	Marking code
MMBT5401	2L

Electrical characteristic curves

Fig.1 Power Dissipation vs. Ambient Temperature

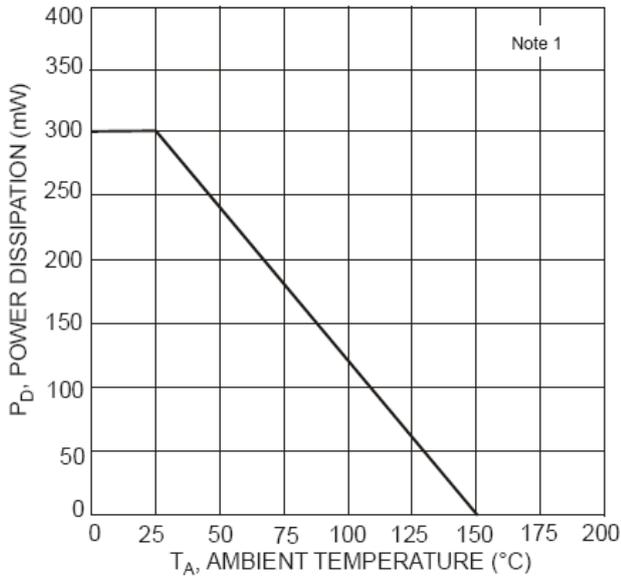


Fig.2 DC Current Gain vs. Collector Current

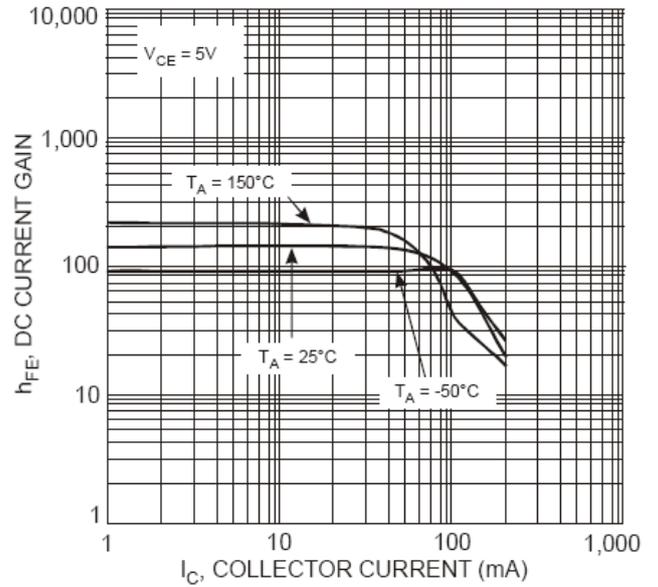


Fig.3 Collector-Emitter Saturation Voltage vs. Collector Current

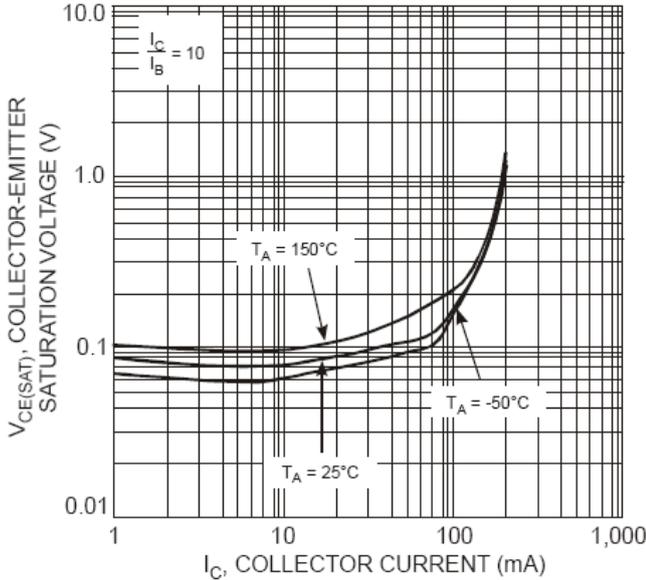


Fig.4 Base-Emitter Turn-On Voltage vs. Collector Current

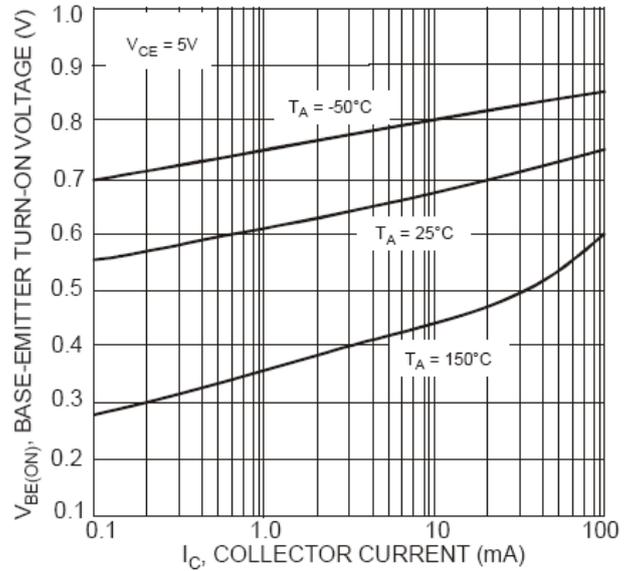


Fig.5 Gain-Bandwidth Product vs. Collector Current

