



MMBT5401

PNP Plastic-Encapsulate Transistors

Features

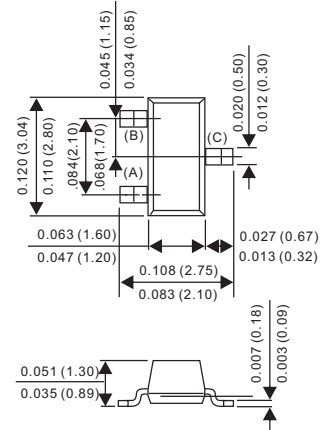
- PNP Silicon, planar design
- Collector-emitter voltage $V_{CE} = -160V$
- Collector current $I_C = 600mA$
- Lead free in compliance with EU RoHS 2.0

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-23
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.008 gram

MAXIMUM RATINGS ($T_a=25^{\circ}C$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-160	V
V_{CEO}	Collector-Emitter Voltage	-150	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-0.6	A
P_C	Collector Power Dissipation	0.3	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	416	$^{\circ}C/W$
T_J	Junction Temperature	150	$^{\circ}C$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}C$



Dimensions in inches and (millimeters)

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}C$ unless otherwise specified)

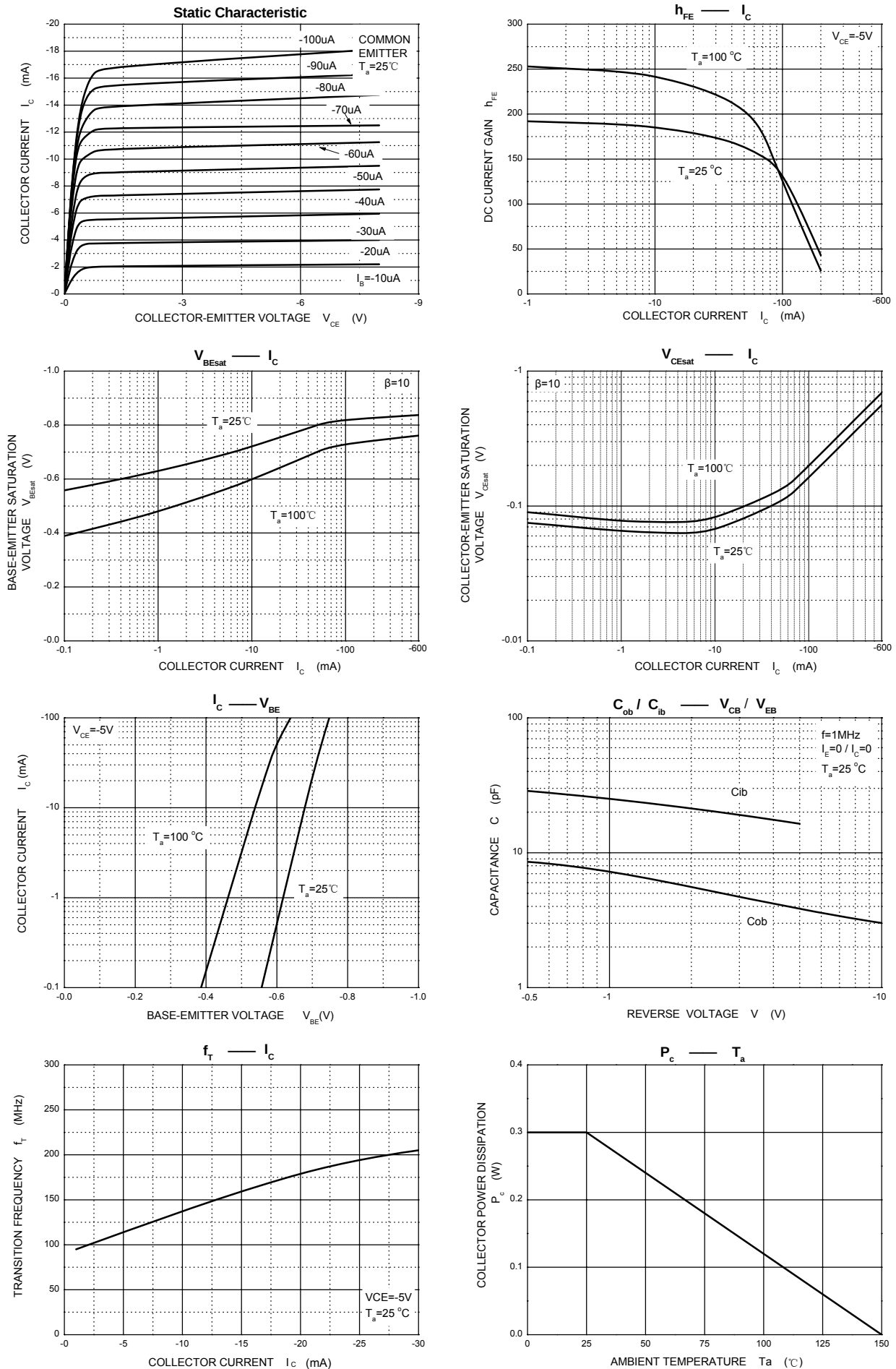
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-100\mu A, I_E=0$	-160			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=-1mA, I_B=0$	-150			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB}=-120V, I_E=0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=-4V, I_C=0$			-0.1	μA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=-5V, I_C=-1mA$	80			
	$h_{FE(2)}^*$	$V_{CE}=-5V, I_C=-10mA$	100		300	
	$h_{FE(3)}^*$	$V_{CE}=-5V, I_C=-50mA$	50			
Collector-emitter saturation voltage	$V_{CE(sat)1}^*$	$I_C=-10mA, I_B=-1mA$			-0.2	V
	$V_{CE(sat)2}^*$	$I_C=-50mA, I_B=-5mA$			-0.5	V
Base-emitter saturation voltage	$V_{BE(sat)1}^*$	$I_C=-10mA, I_B=-1mA$			-1	V
	$V_{BE(sat)2}^*$	$I_C=-50mA, I_B=-5mA$			-1	V
Transition frequency	f_T	$V_{CE}=-5V, I_C=-10mA, f=30MHz$	100			MHz

*Pulse test: pulse width $\leq 300\mu s$, duty cycles $\leq 2.0\%$.

CLASSIFICATION OF $h_{FE(2)}$

RANK	L	H
RANGE	100-200	200-300

Typical Characteristics

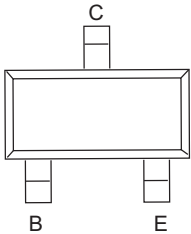
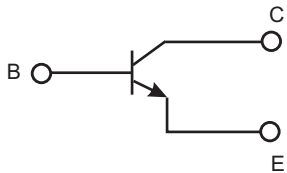




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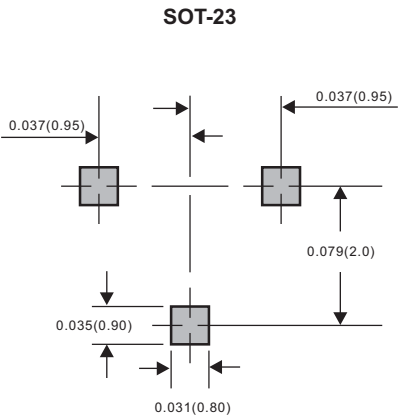
Pinning information

Pin	Simplified outline	Symbol
PinB Base PinC Collector PinE Emitter		

Marking

Type number	Marking code
MMBT5401	2L

Suggested solder pad layout



Dimensions in inches and (millimeters)