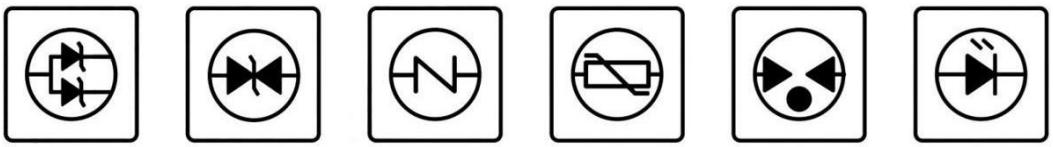
MSKSEMI 美森科
SEMICONDUCTOR



MMBT5401

Product specification

TRANSISTOR (PNP)

FEATURES

- Complementary to MMBT5551
- Ideal for Medium Power Amplification and Switching

Reference News

PACKAGE OUTLINE	MARKING
 1. BASE 2. EMITTER 3.COLLECTOR	2L
SOT-23	

MAXIMUM RATINGS (Ta=25℃ 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	℃/W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55～+150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-100μA, 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=-10μA, 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

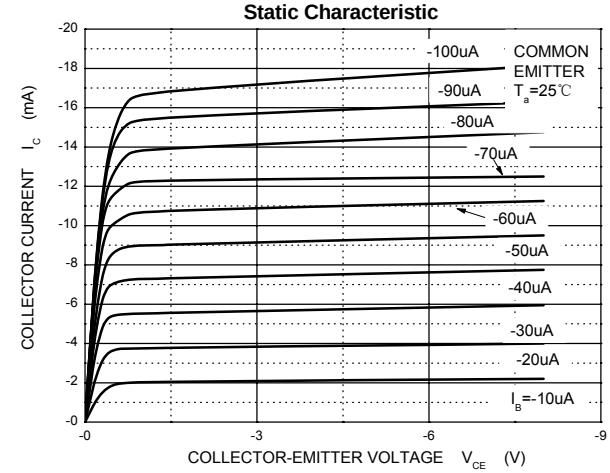
*Pulse test: pulse width ≤300μs, duty cycle≤ 2.0%.

CLASSIFICATION OF hFE (2)

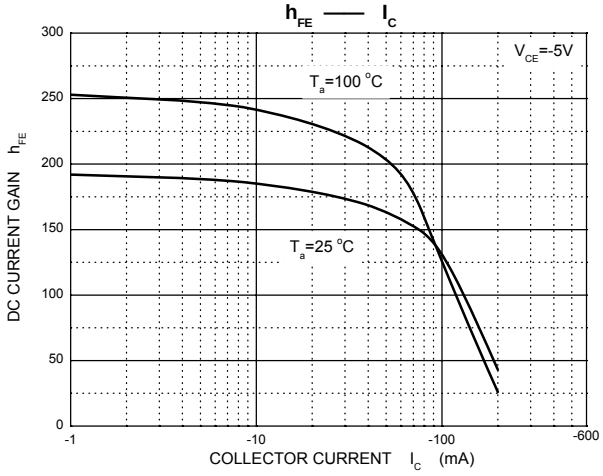
RANK	L	H
RANGE	100-200	200-300

Typical Characteristics

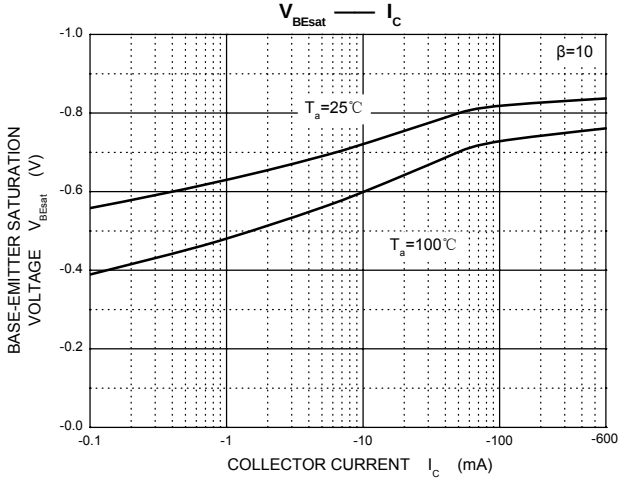
Static Characteristic



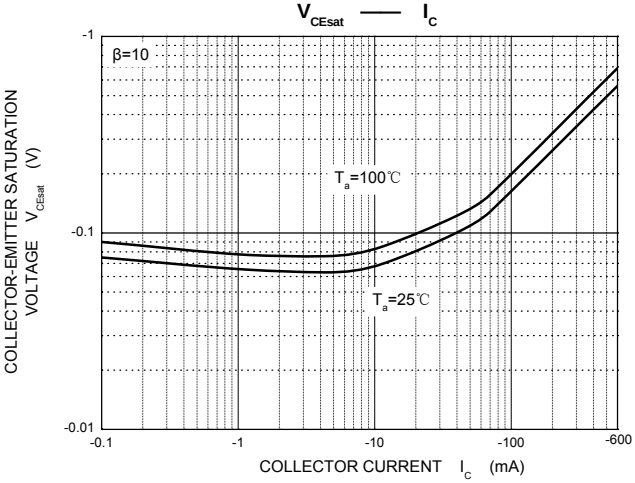
h_{FE} —— I_C



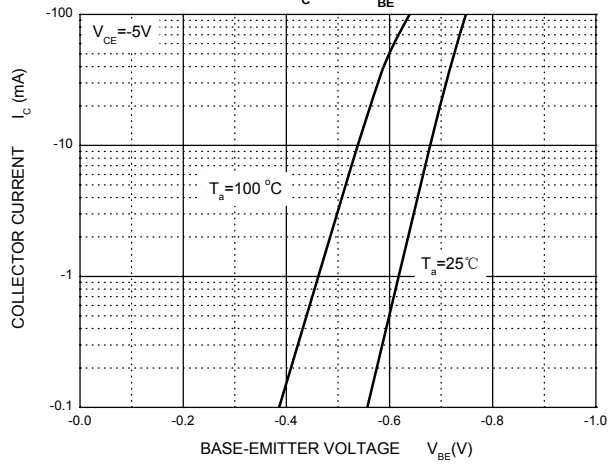
V_{BEsat} —— I_C



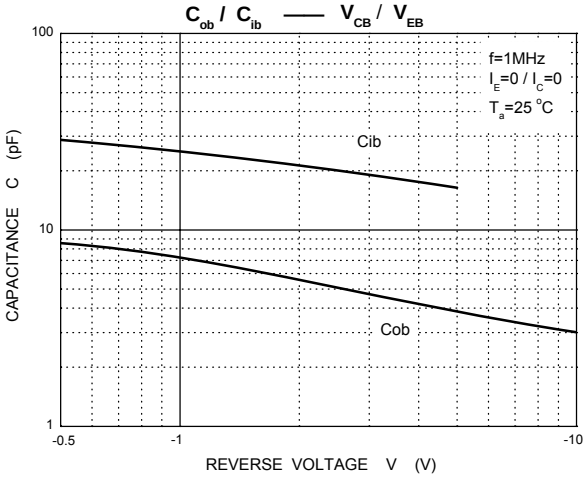
V_{CEsat} —— I_C



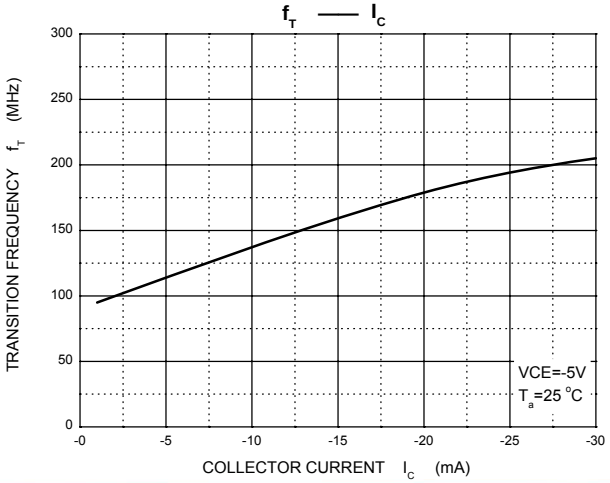
I_C —— V_{BE}



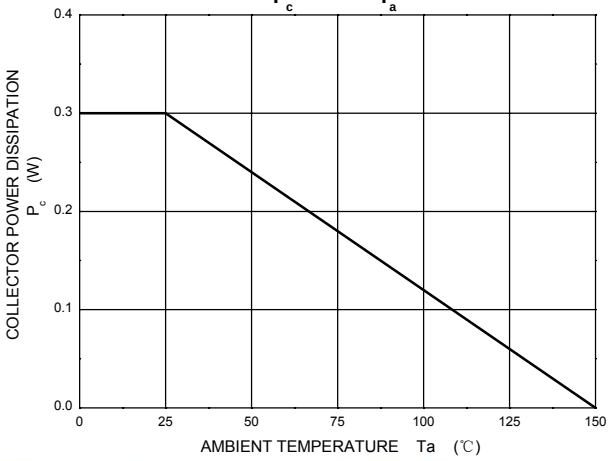
C_{ob} / C_{ib} —— V_{CB} / V_{EB}



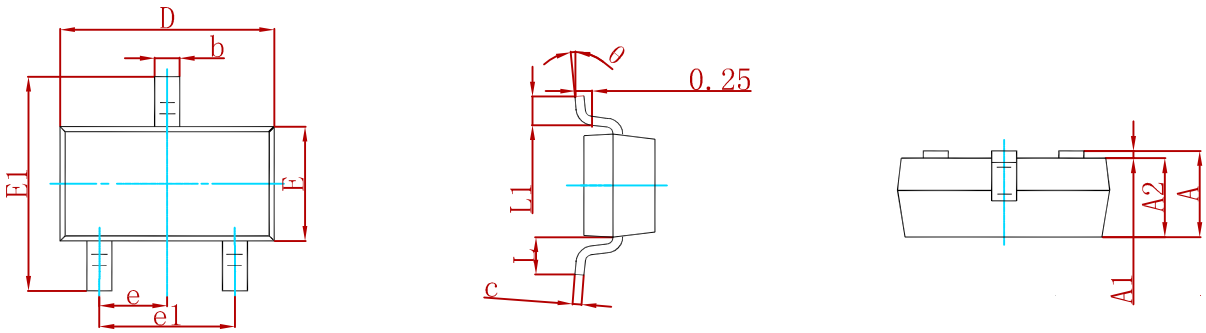
f_T —— I_C



P_c —— T_a

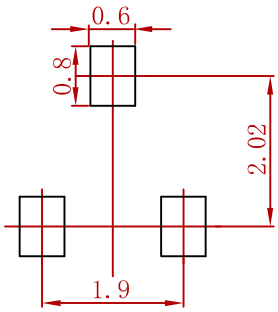


PACKAGE MECHANICAL DATA



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°	8°

Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
MMBT5401	SOT-23	3000

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