MMBT4401

TRANSISTOR (NPN)
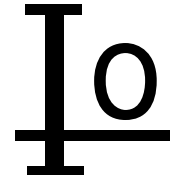
FEATURES

Switching transistor

MARKING: 2X

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR

MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	600	mA
P_C	Collector Power dissipation	0.3	W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55to +150	℃
$R_{\Theta JA}$	Thermal Resistance, junction to Ambient	357	℃/mW

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

| Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 100μA, I_E=0	60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 1mA, I_B=0	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 100μA, I_C=0	6		V
Collector cut-off current	I_{CBO}	V_{CB}=50 V, I_E=0		0.1	μA
Collector cut-off current	I_{CEO}	V_{CE}=30 V, I_B=0		0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0		0.1	μA
DC current gain	h_{FE}	V_{CE}=1V, I_C=150mA	100	300	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=150mA, $_B$=15mA		0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C= 150mA, I_B=15mA		0.95	V
Transition frequency	f_T	V_{CE}= 10V, I_C= 20mA f = 100MHz	250		MHz

Typical Characteristics

MMBT4401
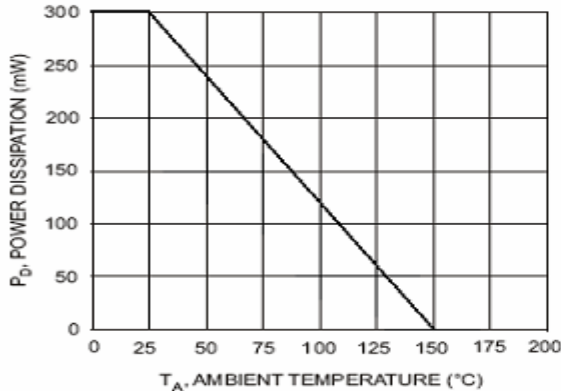
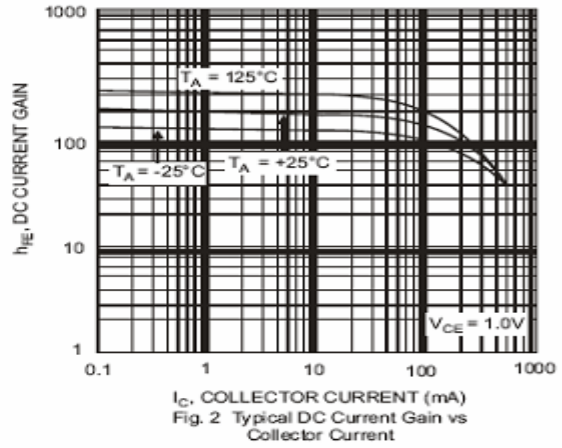Fig. 1 Max Power Dissipation vs
Ambient Temperature

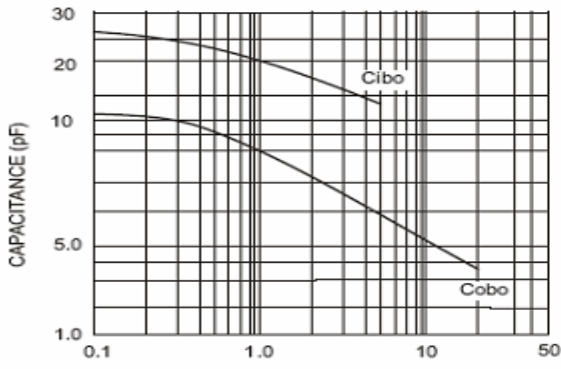Fig. 2 Typical DC Current Gain vs
Collector Current
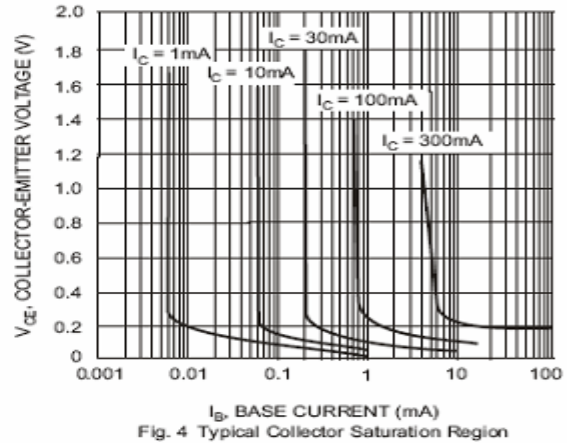

Fig. 3 Typical Capacitance
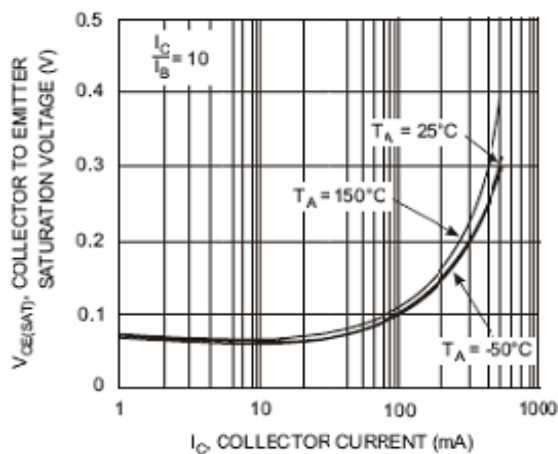

Fig. 4 Typical Collector Saturation Region

Fig. 5 Collector Emitter Saturation Voltage
vs. Collector Current
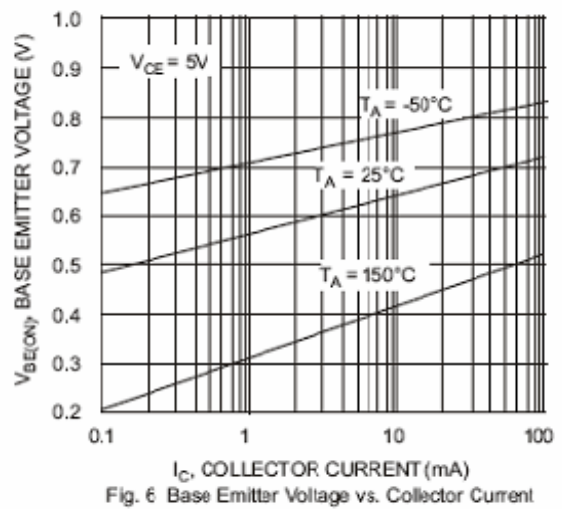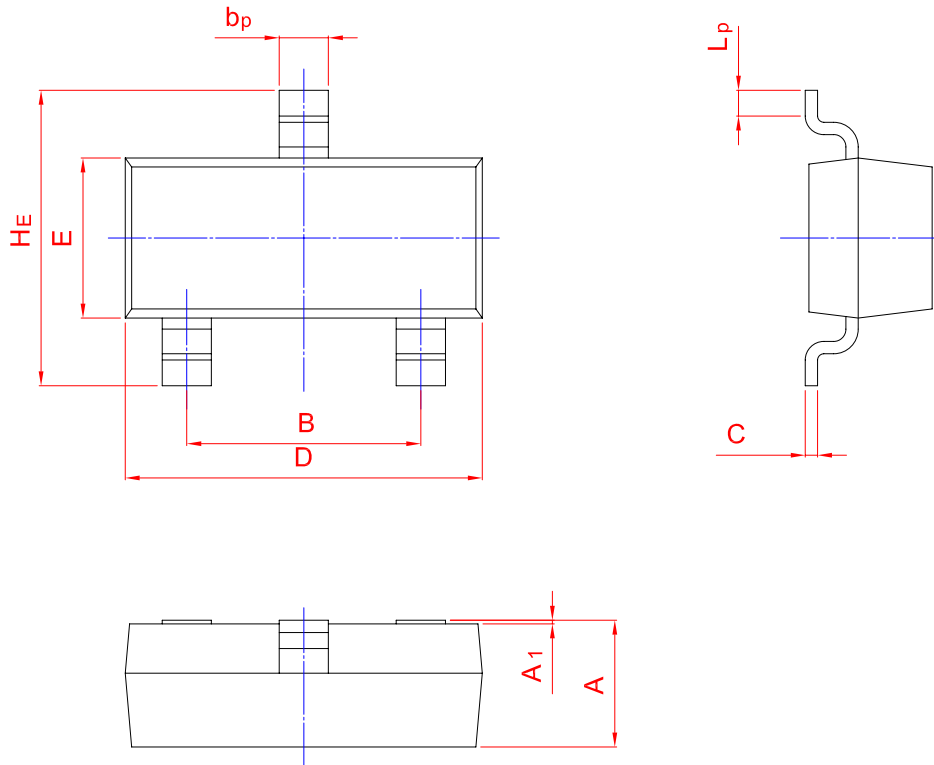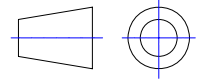

Fig. 6 Base Emitter Voltage vs. Collector Current

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads　　　　　　　　　　　　　　　　**SOT-23**

UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20