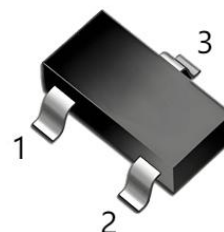


TRANSISTOR (NPN)

Parameter	Value	Unit
V_{CEO}	160	V
I_C	0.6	A

1. BASE
2. EMITTER
3. COLLECTOR



SOT-23

Features

- Complementary to MMBT5401
- Ideal for Medium Power Amplification and Switching

Absolute maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base voltage	180	V
V_{CEO}	Collector-emitter voltage	160	V
V_{EBO}	Emitter-base voltage	6	V
I_C	Collector current	0.6	A
P_C	Collector Power Dissipation	300	mW
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-55~150	$^{\circ}\text{C}$
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	416	$^{\circ}\text{C/W}$

Note:

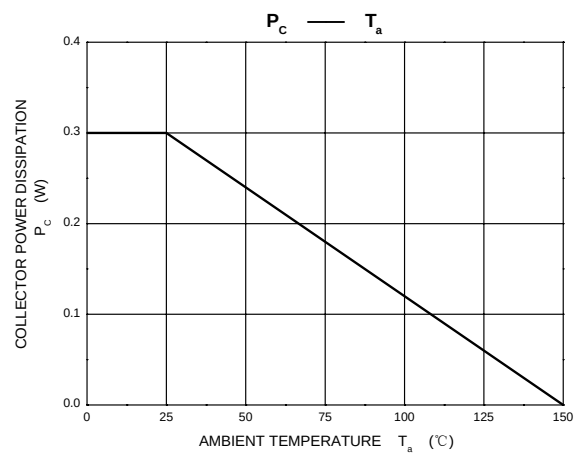
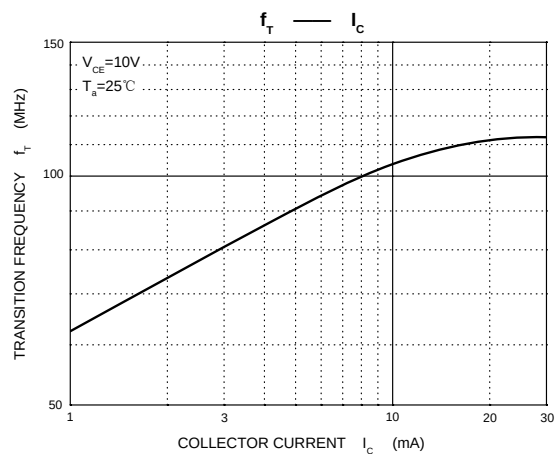
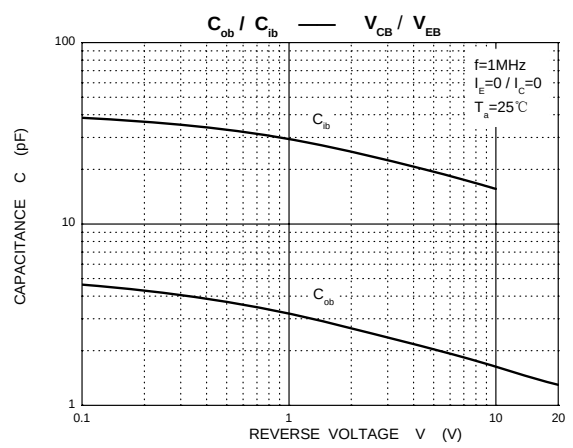
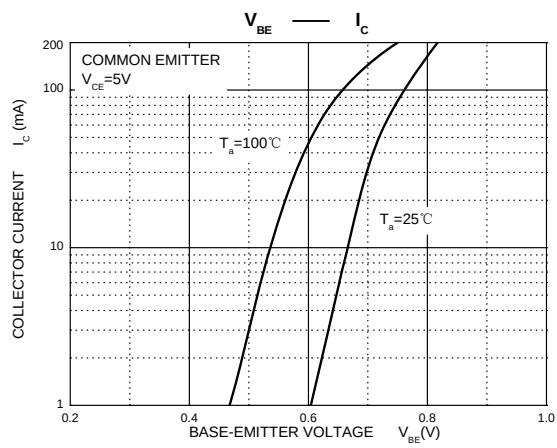
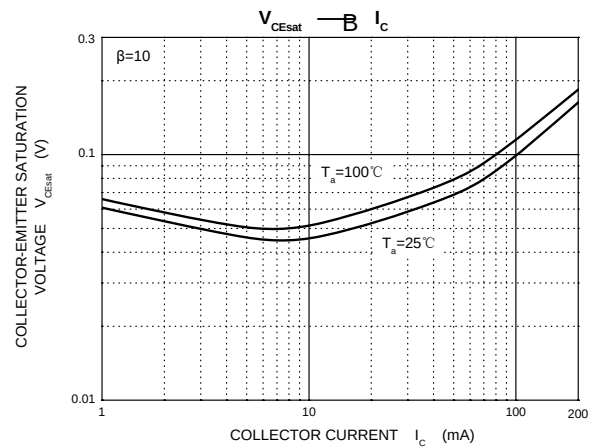
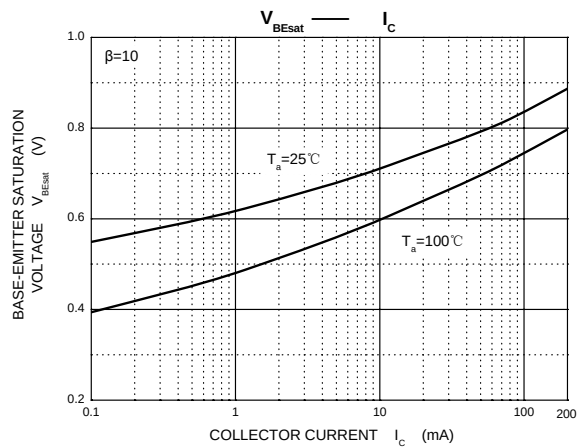
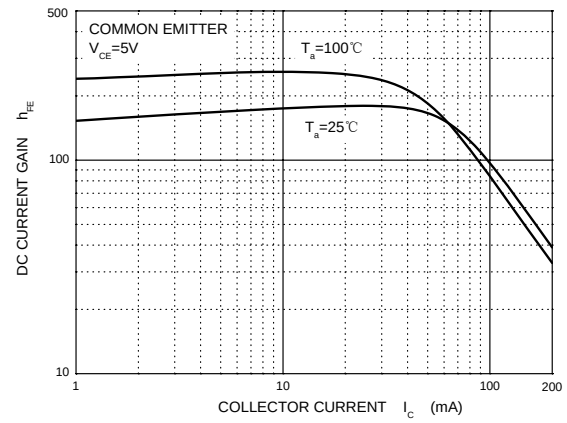
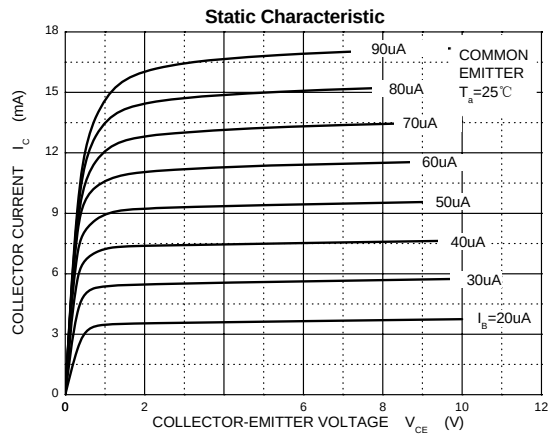
Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

Electrical characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

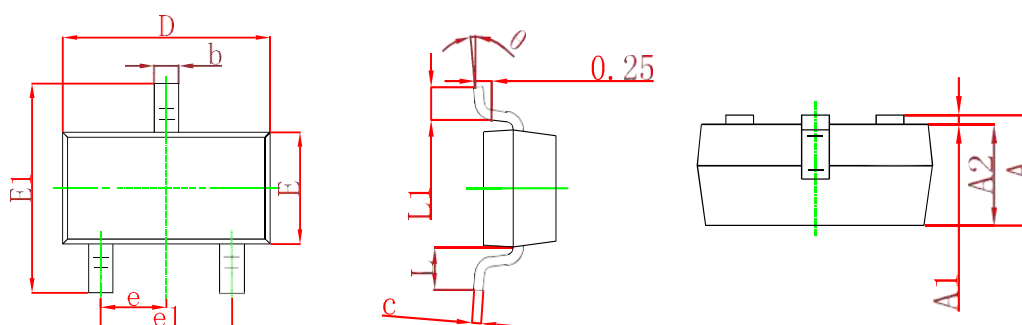
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	180		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=1\text{mA}, I_B=0$	160		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6		V
Collector cutoff current	I_{CBO}	$V_{CB}=120\text{V}, I_E=0$		50	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$		50	nA
DC Current Gain (CLASSIFICATION OF h_{FE2})	h_{FE1}^*	$V_{CE}=5\text{V}, I_C=1\text{mA}$	80		
	h_{FE2}^*	$V_{CE}=5\text{V}, I_C=10\text{mA}$	100	200	
			200	300	
	h_{FE3}^*	$V_{CE}=5\text{V}, I_C=50\text{mA}$	50		
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=10\text{mA}, I_B=1\text{mA}$		0.15	V
	$V_{CE(sat)}^*$	$I_C=50\text{mA}, I_B=5\text{mA}$		0.2	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}^*$	$I_C=10\text{mA}, I_B=1\text{mA}$		1	V
	$V_{BE(sat)}^*$	$I_C=50\text{mA}, I_B=5\text{mA}$		1	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	100	300	MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		6	pF

Typical Characteristics



Package outline Dimensions

SOT-23



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°

*Important Usage Information and Disclaimer

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