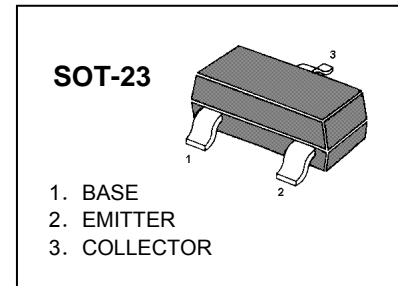


## MMBTH10 TRANSISTOR(NPN)

### FEATURES

- VHF/UHF Transistor



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

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	30	V
$V_{CEO}$	Collector-Emitter Voltage	25	V
$V_{EBO}$	Emitter-Base Voltage	3	V
$I_C$	Collector Current	50	mA
$P_C$	Collector Power Dissipation	225	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	556	$^{\circ}\text{C/W}$
$T_j$	Junction Temperature	150	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature	-55 ~ +150	$^{\circ}\text{C}$

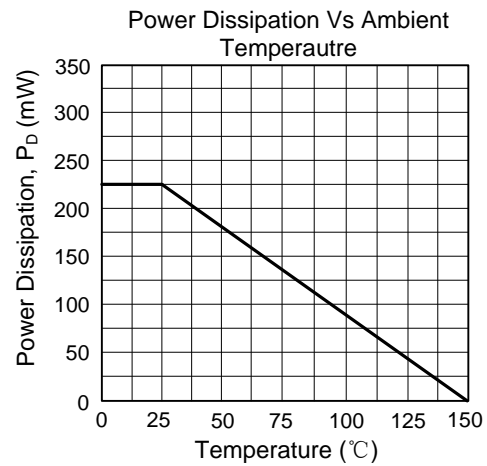
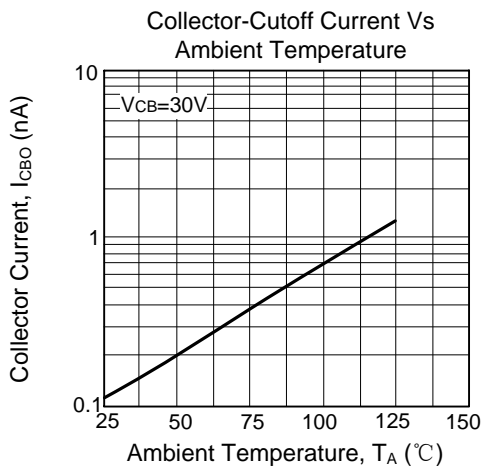
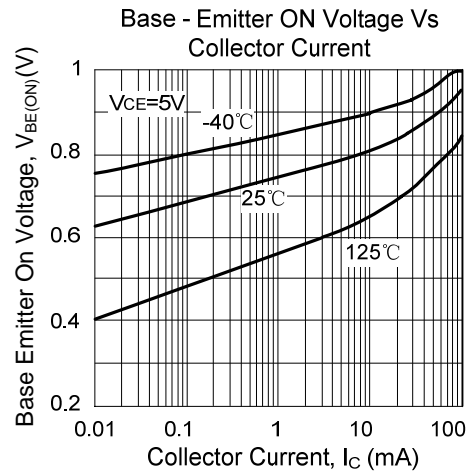
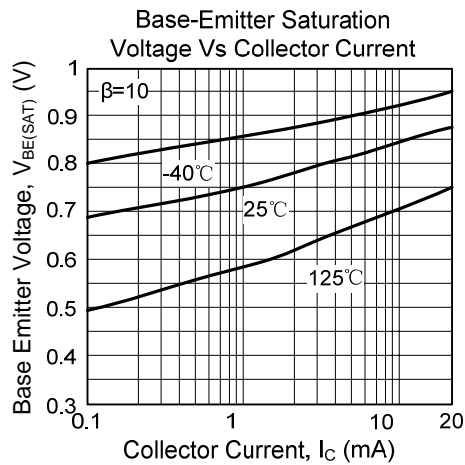
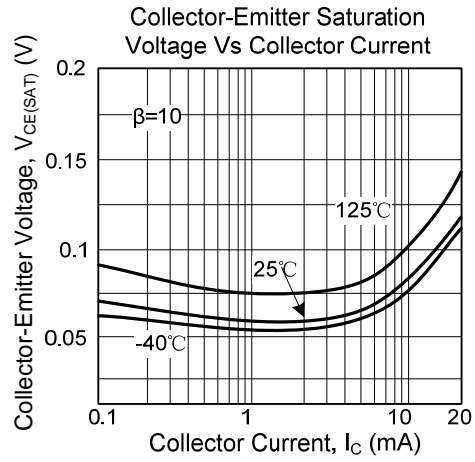
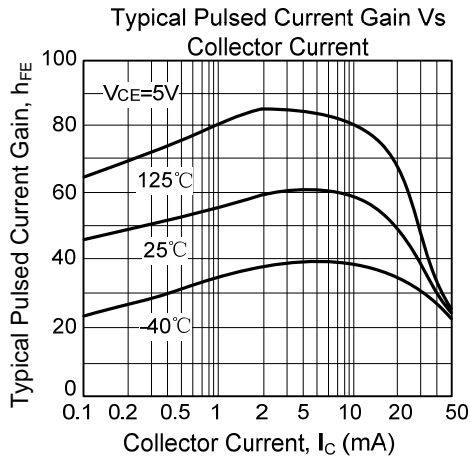
### ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

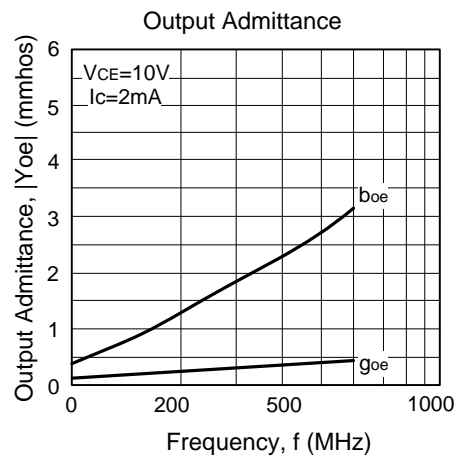
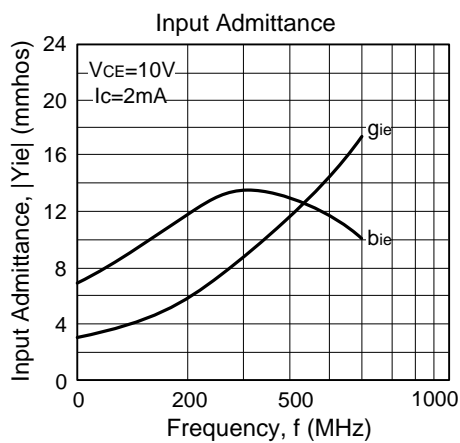
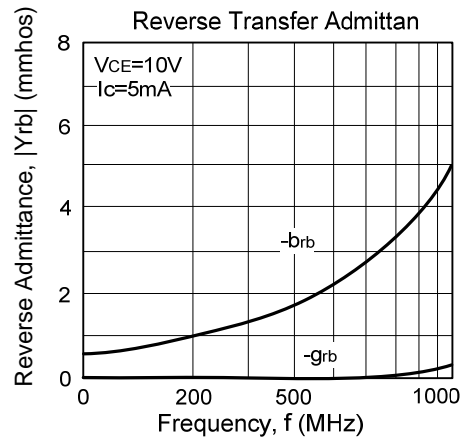
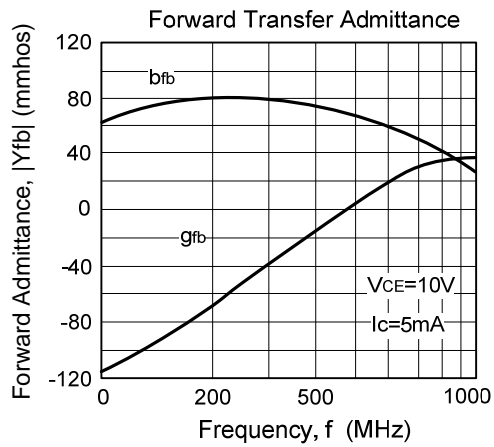
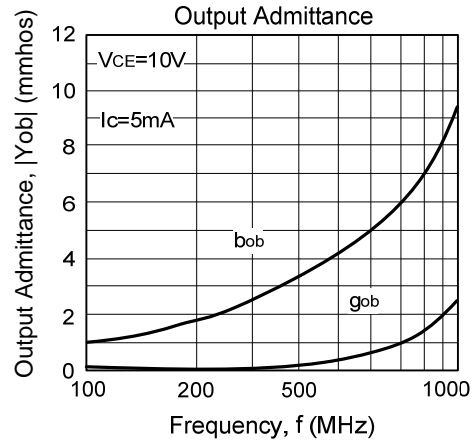
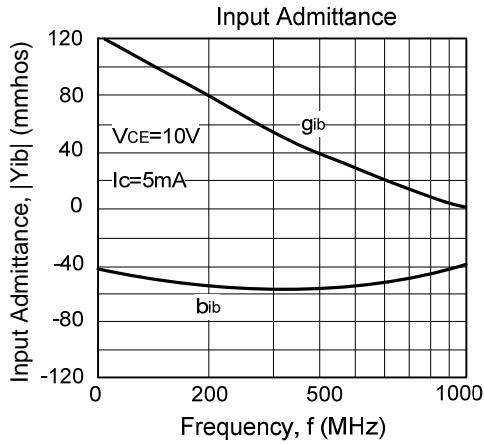
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$ , $I_E=0$	30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$ , $I_B=0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}$ , $I_C=0$	3			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=25\text{V}$ , $I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=2\text{V}$ , $I_C=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE}=10\text{V}$ , $I_C=4\text{mA}$	60			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=4\text{mA}$ , $I_B=0.4\text{mA}$			0.5	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=10\text{V}$ , $I_C=4\text{mA}$			0.95	V
Transition frequency	$f_T$	$V_{CE}=10\text{V}$ , $I_C=4\text{mA}$ $f=100\text{MHz}$	650			MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$			0.7	pF

### CLASSIFICATION OF $h_{FE}$

RANK	A	B	C
RANGE	60-100	90-130	120-200

TYPICAL CHARACTERISTICS

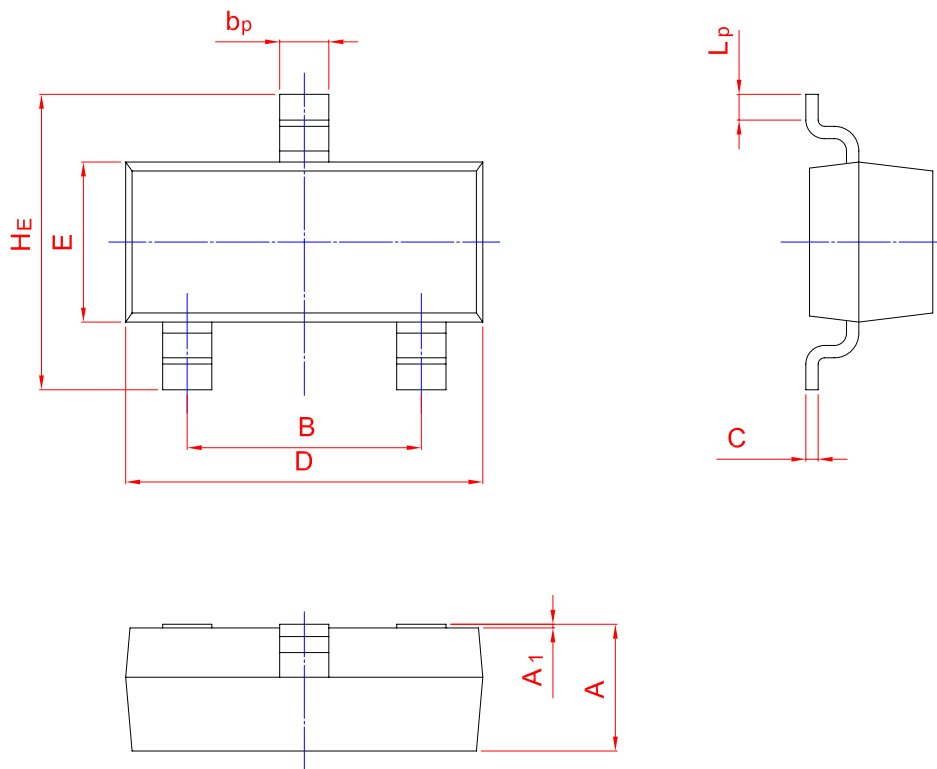
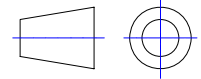




PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	$b_p$	C	D	E	$H_E$	$A_1$	$L_p$
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