

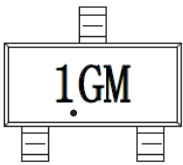
Plastic-Encapsulate Transistors

TRANSISTOR (NPN)

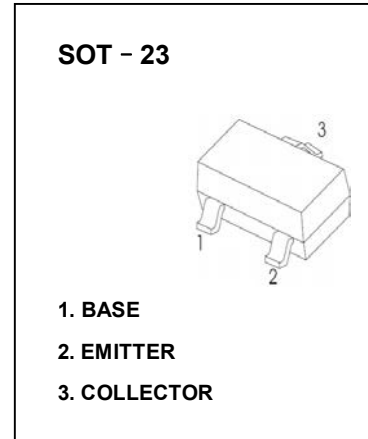
FEATURES

- For Switching and Amplifier Applications
- Complementary Type PNP Transistor MMBTA56

MARKING



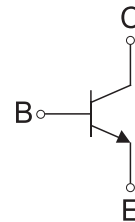
1GM=Device code
Solid dot = Green molding compound device, if none, the normal device.



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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	4	V
I_C	Collector Current	500	mA
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	416	$^{\circ}\text{C}/\text{W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

Equivalent Circuit

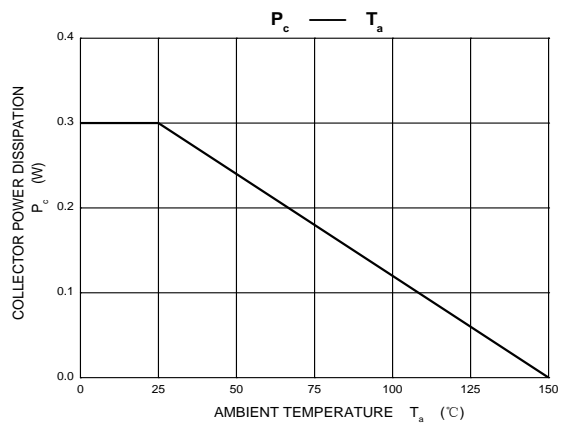
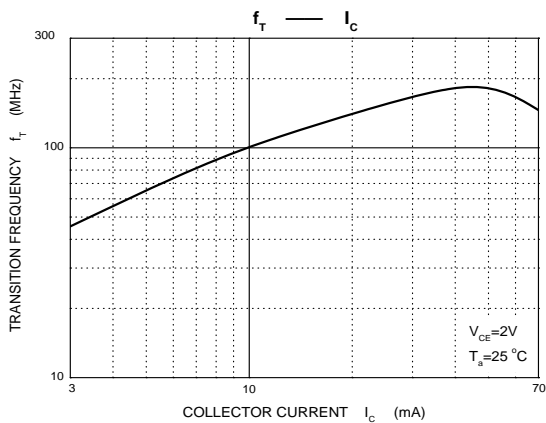
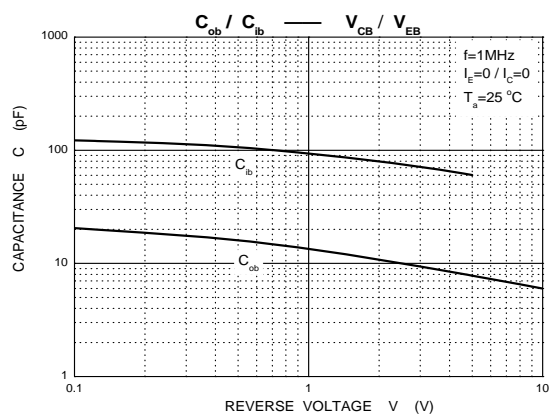
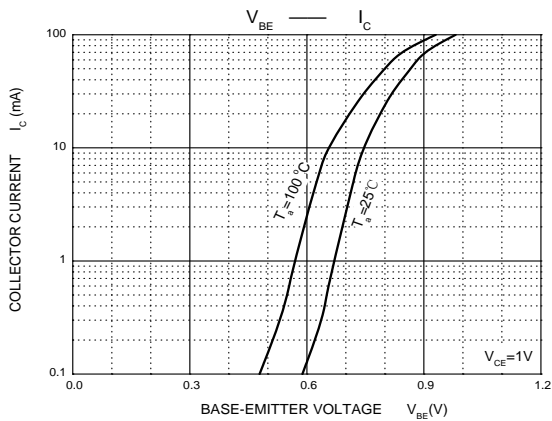
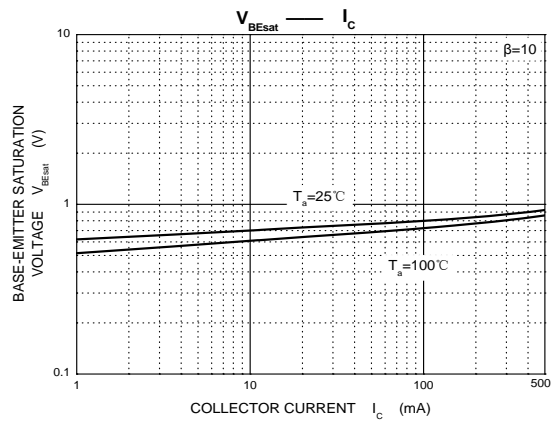
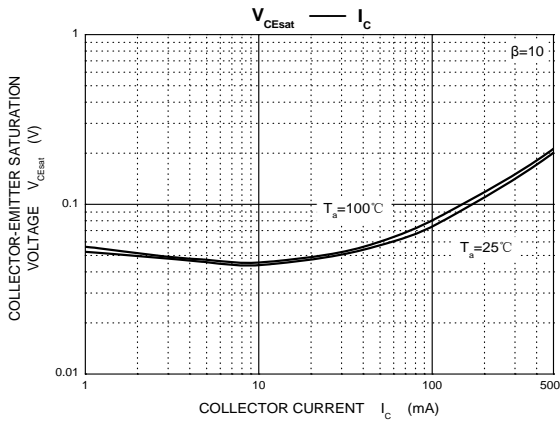
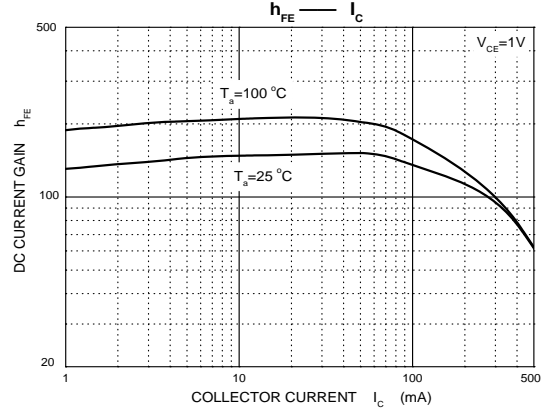
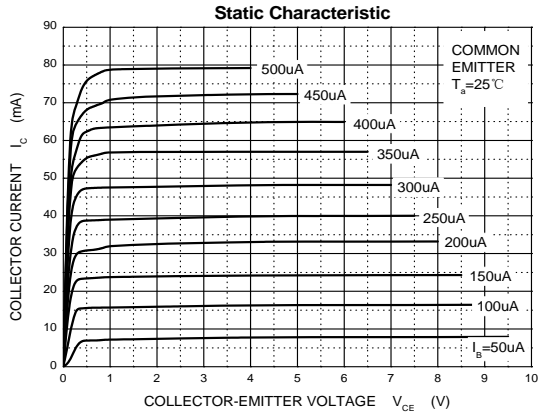


ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=0.1\text{mA}, I_E=0$	80			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1\text{mA}, I_C=0$	4			V
Collector cut-off current	I_{CBO}	$V_{CB}=80\text{V}, I_E=0$			0.1	μA
Collector cut-off current	I_{CEO}	$V_{CE}=60\text{V}, I_B=0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=3\text{V}, I_C=0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1\text{V}, I_C=10\text{mA}$	100		400	
	$h_{FE(2)}$	$V_{CE}=1\text{V}, I_C=100\text{mA}$	100			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$			0.25	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$			1.2	V
Transition frequency	f_T	$V_{CE}=2\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	100			MHz



Typical Characteristics

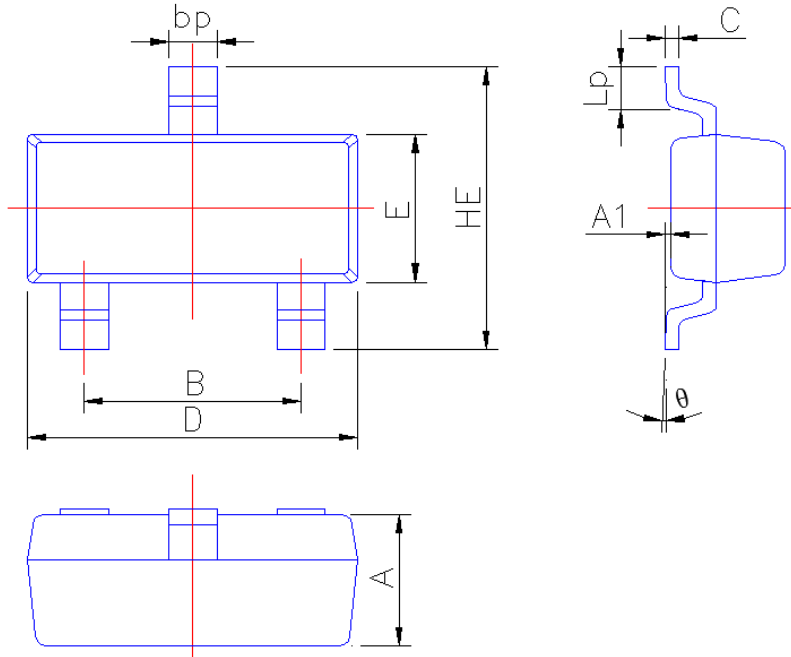




PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



Symbol	Dimension in Millimeters	
	Min	Max
A	0.90	1.10
A1	0.013	0.100
B	1.80	2.00
bp	0.35	0.50
C	0.09	0.150
D	2.80	3.00
E	1.20	1.40
HE	2.20	2.80
Lp	0.20	0.50
θ	0°	5°