

SOT-23 Plastic-Encapsulate Transistors

FMMT493 TRANSISTOR (NPN)

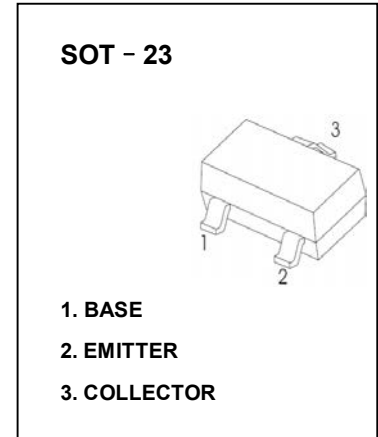
FEATURES

- Complementary Type FMMT593

MARKING:493

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	1000	mA
P_C	Collector Power Dissipation	250	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	500	$^{\circ}\text{C}/\text{W}$
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

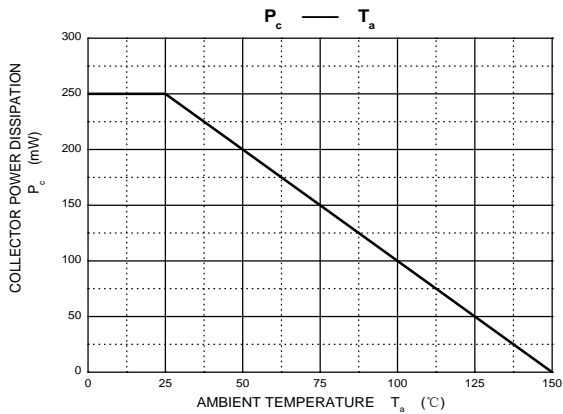
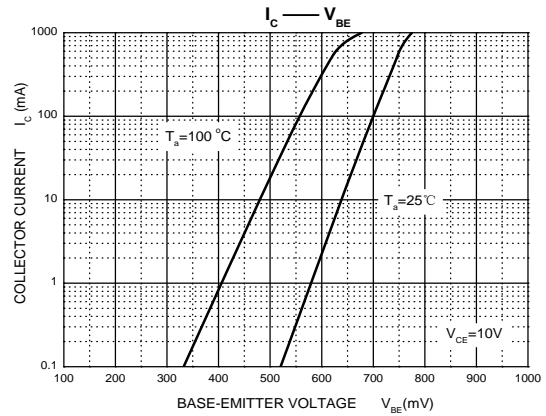
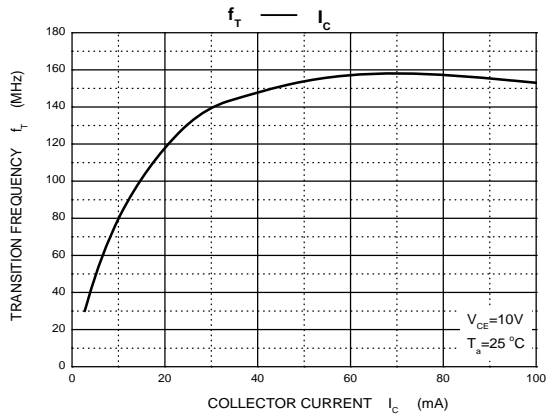
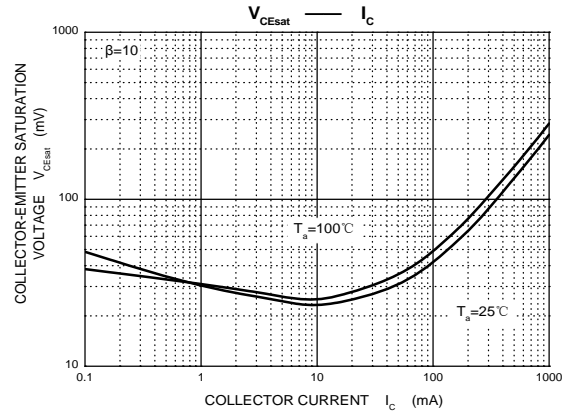
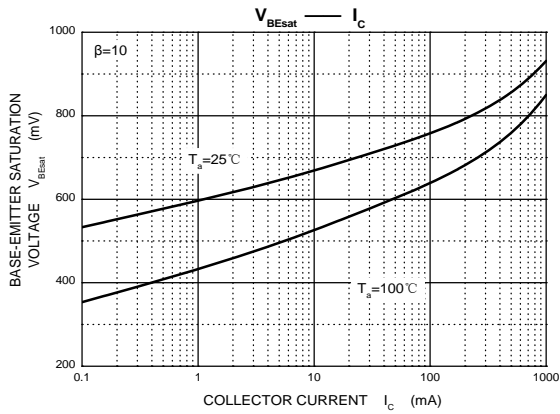
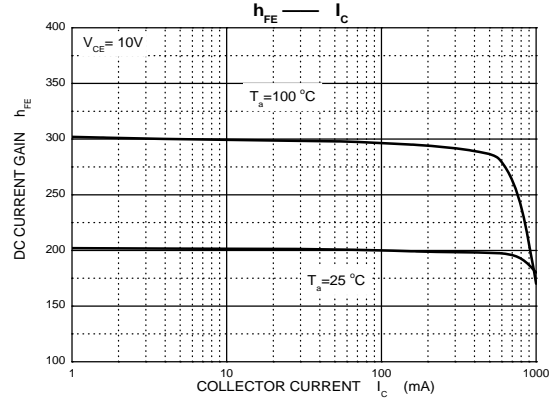
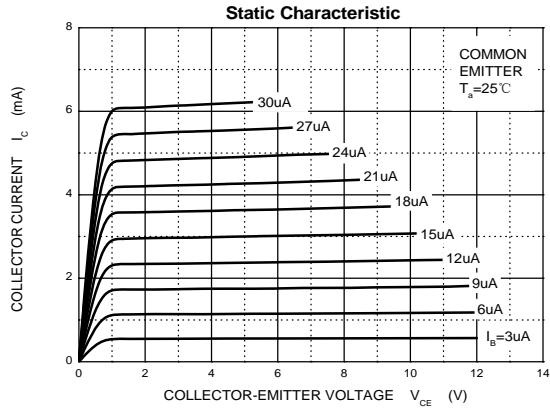


ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	120			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	100			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=100\text{V}, I_E=0$			0.1	μA
Collector cut-off current	I_{CES}	$V_{CES}=100\text{V}, I_E=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			0.1	μA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=10\text{V}, I_C=1\text{mA}$	100			
	$h_{FE(2)}^*$	$V_{CE}=10\text{V}, I_C=250\text{mA}$	100		300	
	$h_{FE(3)}^*$	$V_{CE}=10\text{V}, I_C=0.5\text{A}$	60			
	$h_{FE(4)}^*$	$V_{CE}=10\text{V}, I_C=1\text{A}$	20			
Collector-emitter saturation voltage	$V_{CE(sat)1}^*$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.3	V
	$V_{CE(sat)2}^*$	$I_C=1\text{A}, I_B=100\text{mA}$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C=1\text{A}, I_B=100\text{mA}$			1.15	V
Base-emitter voltage	V_{BE}^*	$V_{CE}=10\text{V}, I_C=1\text{A}$			1	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	150			MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$			10	pF

*Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycles $\leq 2.0\%$.

Typical Characteristics

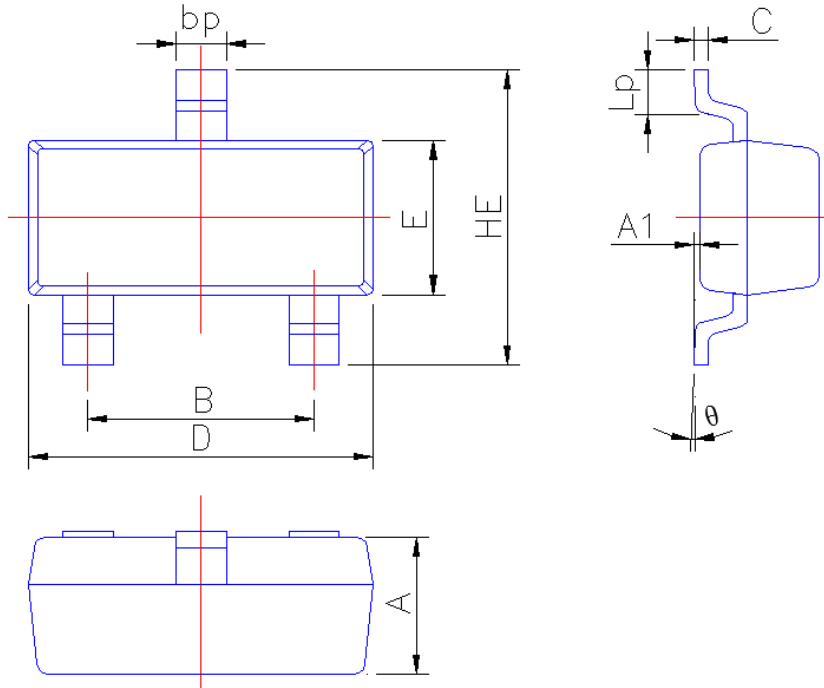




PACKAGE OUTLINE

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°