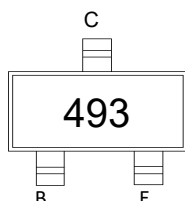
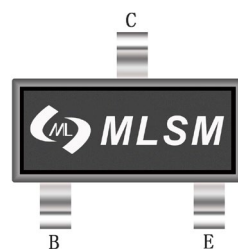


Features

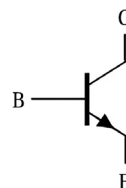
- Complementary Type FMMT593



Marking and pin assignment



SOT-23 top view



Schematic diagram



Pb-Free



Halogen-Free

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

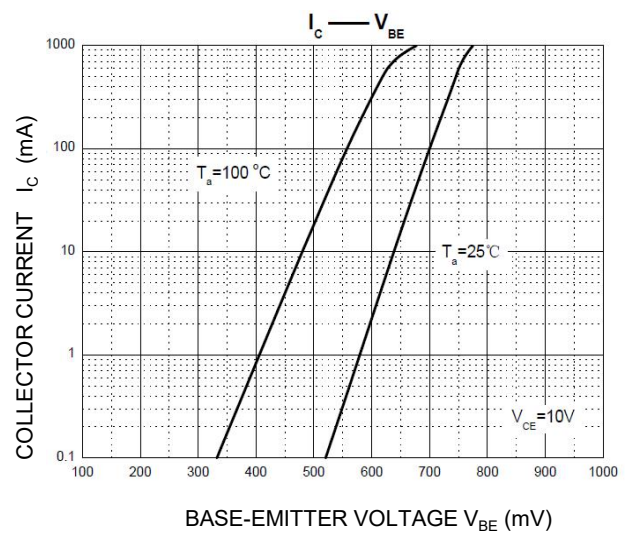
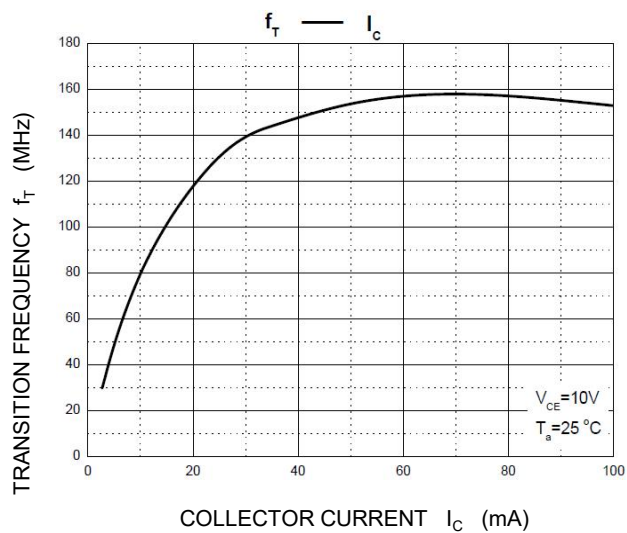
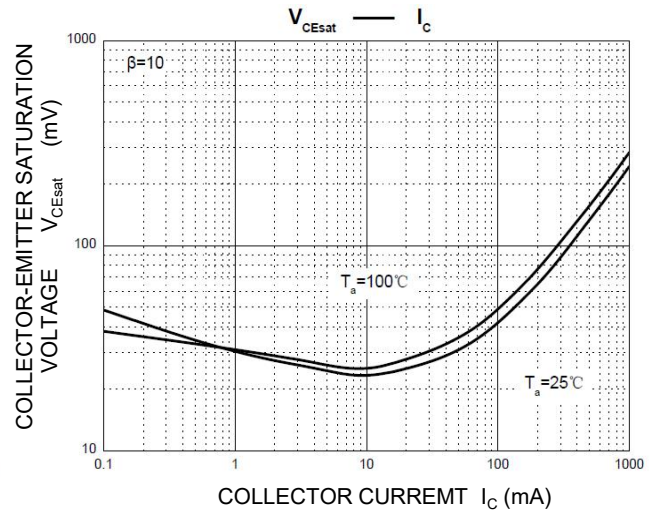
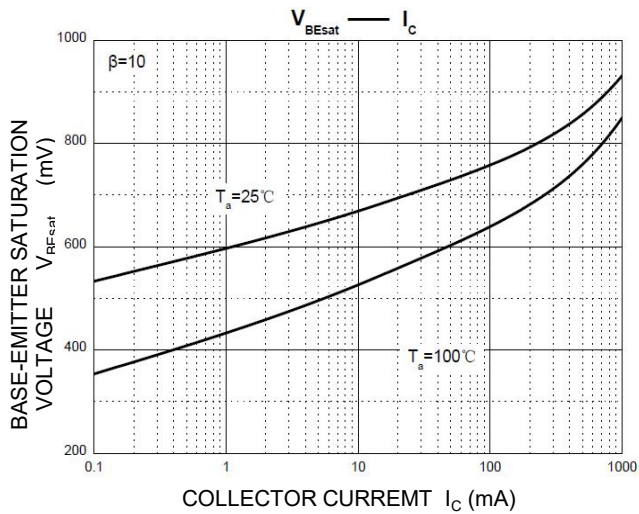
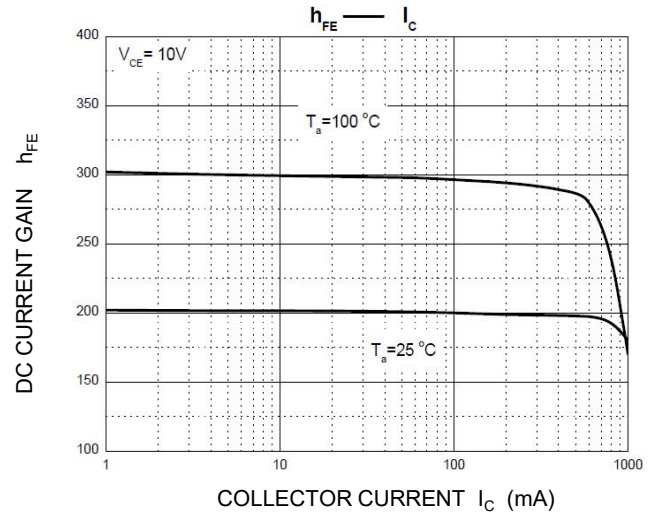
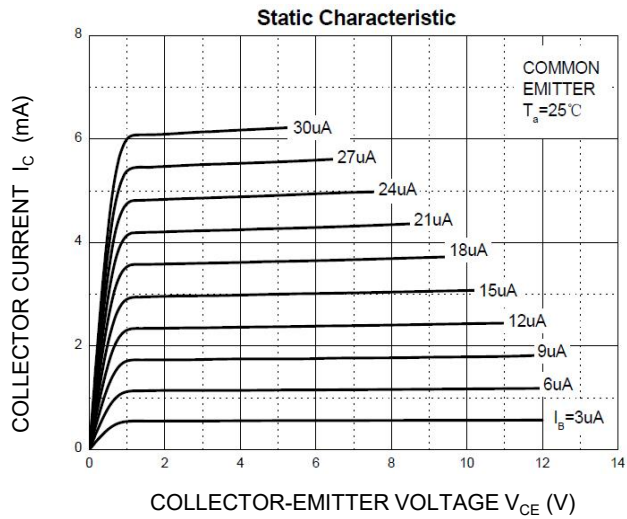
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	1000	mA
P_C	Collector Power Dissipation	250	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	500	$^\circ\text{C/W}$
T_J, T_{STG}	Operating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

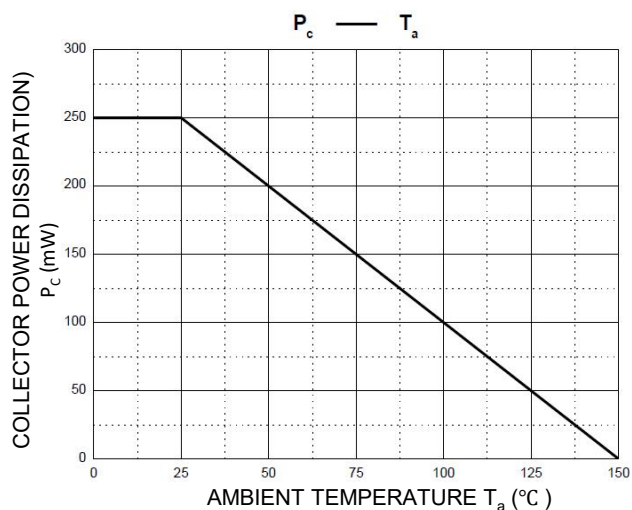
ELECTRICAL CHARACTERISTICS($T_a=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=100\mu\text{A}, I_E=0$	120	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=10\text{mA}, I_B=0$	100	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=100\mu\text{A}, I_C=0$	5	--	--	V
I_{CBO}	Collector cut-off current	$V_{CB}=100\text{V}, I_E=0$	--	--	0.1	μA
I_{CES}	Collector cut-off current	$V_{CE}=100\text{V}, I_E=0$	--	--	0.1	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=4\text{V}, I_C=0$	--	--	0.1	μA
h_{FE1}^*	DC current gain	$V_{CE}=10\text{V}, I_C=1\text{mA}$	100	--	--	
h_{FE2}^*		$V_{CE}=10\text{V}, I_C=250\text{mA}$	100	--	300	
h_{FE3}^*		$V_{CE}=10\text{V}, I_C=0.5\text{A}$	60	--	--	
h_{FE4}^*		$V_{CE}=10\text{V}, I_C=1\text{A}$	20	--	--	
$V_{CE(sat)1}^*$	Collector-emitter saturation voltage	$I_C=500\text{mA}, I_B=50\text{mA}$	--	--	0.3	V
$V_{CE(sat)2}^*$		$I_C=1\text{A}, I_B=100\text{mA}$	--	--	0.6	V
$V_{BE(sat)}^*$	Base-emitter saturation voltage	$I_C=1\text{A}, I_B=100\text{mA}$	--	--	1.15	V
V_{BE}^*	Base-emitter saturation voltage	$V_{CE}=10\text{V}, I_C=1\text{A}$	--	--	1	V
f_T	Transition frequency	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	150	--	--	MHz
C_{ob}	Collector output capacitance	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	--	--	10	pF

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

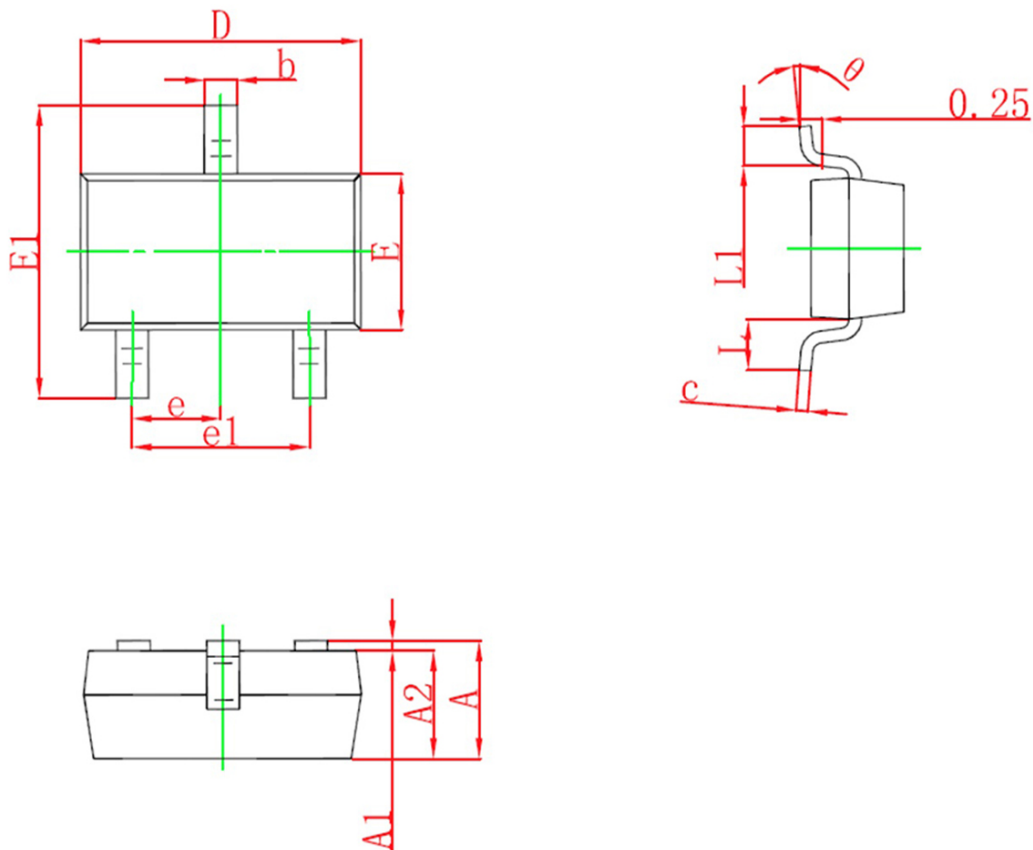
Typical Operating Characteristics




Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
FMMT493	SOT-23	493	3,000	45,000	180,000	7"reel

SOT-23 Package information



Symbol	Dimensions in Millimeters(mm)		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
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
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°