

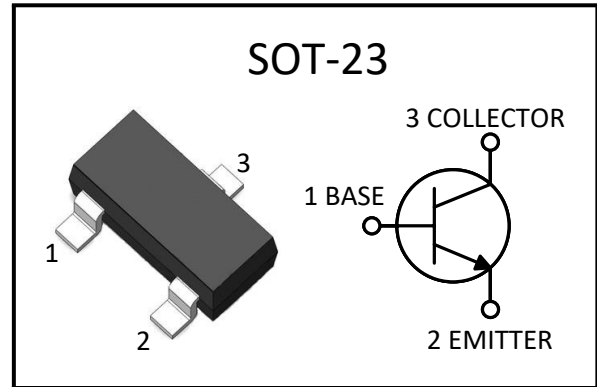
FMMT493

NPN Plastic-Encapsulate Transistor

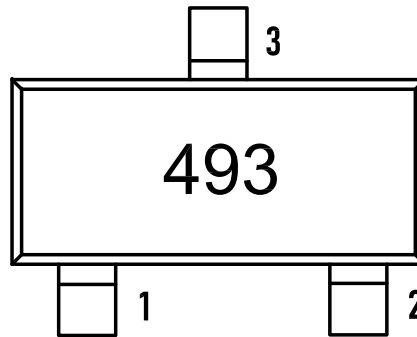
Features

- $V_{CE}=100V$
- $I_C=1A$
- $f_T=150MHz @V_{CE}=10V, I_C=50mA, f=100MHz$
- High voltage and high current.
- Excellent hFE linearity.
- Low noise.

Package



Marking



Ordering information

Order code	Package	Marking	Base qty	Delivery mode
FMMT493	SOT-23	493	3K	Tape and reel

Absolute Maximum Ratings @ $T_A=25^{\circ}C$ 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	1	A
I_{CM}	Peak Pulse Current	2	A
I_B	Base Current	0.2	A
P_C	Collector Power Dissipation	500	mW
T_J, T_{stg}	Operation Junction And Storage Temperature Range	-55 to + 150	$^{\circ}C$



FMMT493

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Electrical Characteristics ($T_A=+25^{\circ}\text{C}$, unless otherwise specified)

Symbol	Parameter	Test condition	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	–	–	
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=100\mu\text{A}, I_C=0$	5	–	–	
I_{CBO}	Collector cut-off current	$V_{CB}=100\text{V}, I_E=0$	–	–	0.1	uA
I_{CES}	Collector cut-off current	$V_{CES}=100\text{V}, I_E=0$	–	–	0.1	
I_{EBO}	Emitter cut-off current	$V_{EB}=4\text{V}, I_C=0$	–	–	0.1	
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=500\text{mA}, I_B=50\text{mA}$	–	–	0.3	V
		$I_C=1\text{A}, I_B=100\text{mA}$	–	–	0.6	
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C=1\text{A}, I_B=100\text{mA}$	–	–	1.15	
$V_{BE(on)}$	Base-Emitter Turn On Voltage	$I_C=1\text{A}, V_{CE}=10\text{V}$	–	–	1.0	V
h_{FE}	Static Forward Current Transfer Ratio	$V_{CE}=10\text{V}, I_C=1\text{mA}$	100	–	300	
		$V_{CE}=10\text{V}, I_C=250\text{mA}$	100	–	300	
		$V_{CE}=10\text{V}, I_C=500\text{mA}$	60	–	300	
		$V_{CE}=10\text{V}, I_C=1\text{A}$	20	–	300	
f_T	Transition frequency	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHZ}$	150	–	–	MHZ
C_{obo}	Collector-Base Breakdown Voltage	$V_{CB}=10\text{V}, f=1\text{MHZ}$	–	–	10	pF

Note: Measured under pulsed conditions. Pulse width=300ms. Duty cycle≤2%.



Typical Performance Characteristics ($T_J = 25^\circ\text{C}$, unless otherwise noted)

Figure 1 : $V_{CE(sat)}-I_C$

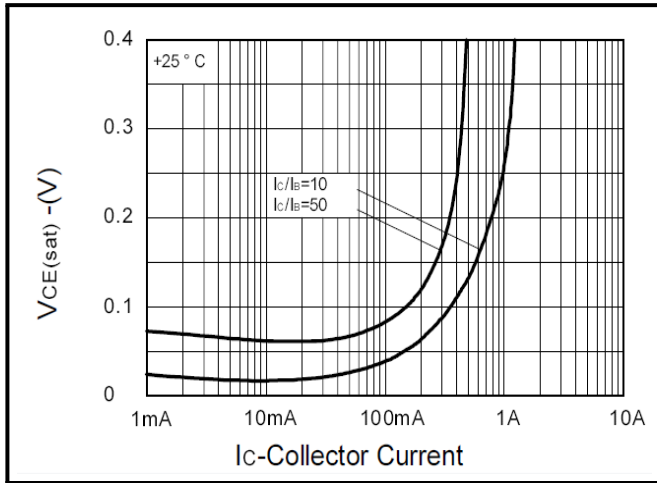


Figure 2 : $V_{CE(sat)}-I_C$

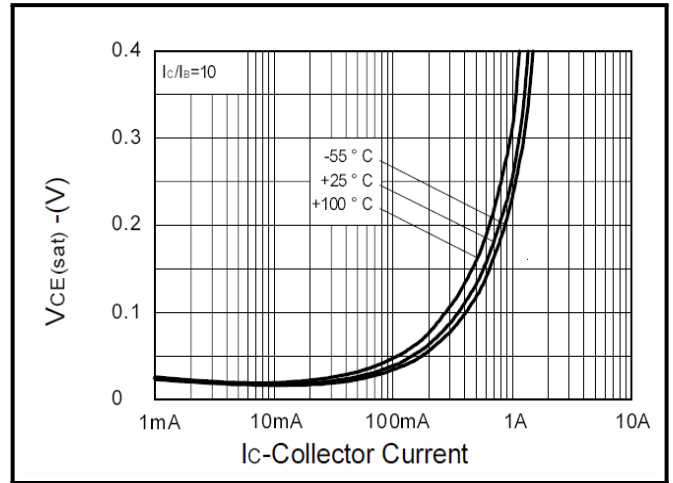


Figure 3 : $h_{FE}-I_C$

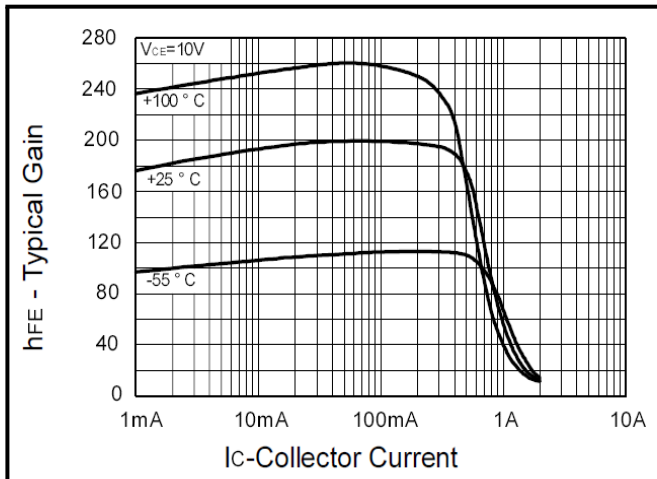


Figure 4 : $V_{BE(sat)}-I_C$

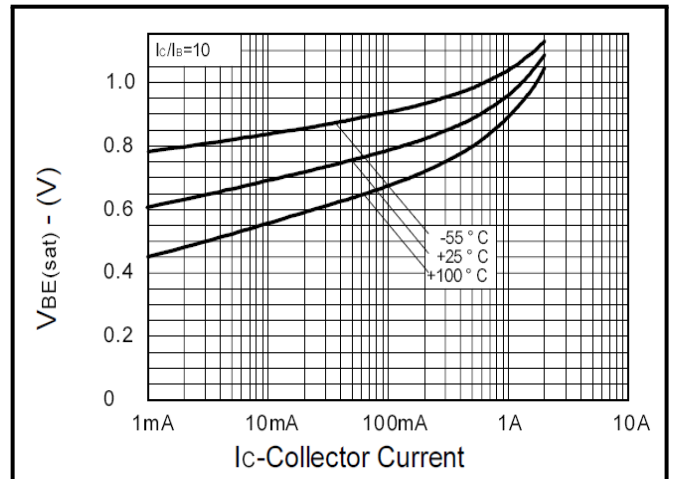


Figure 5 : $V_{BE(on)}-I_C$

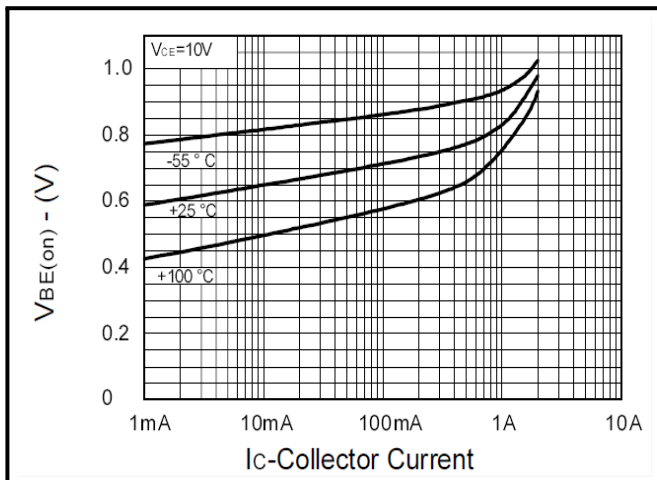
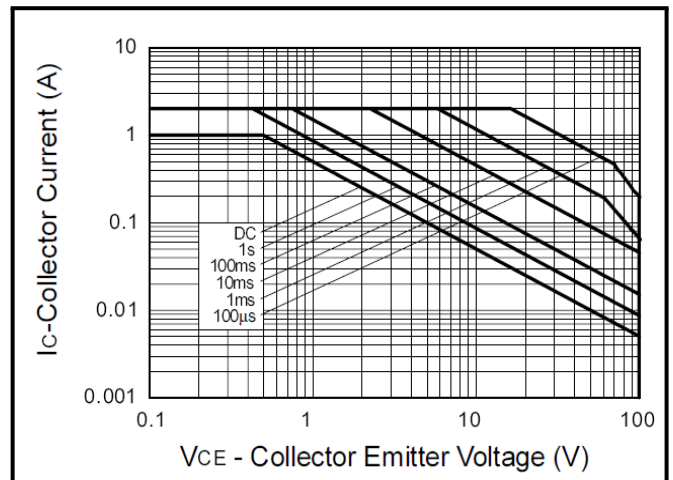


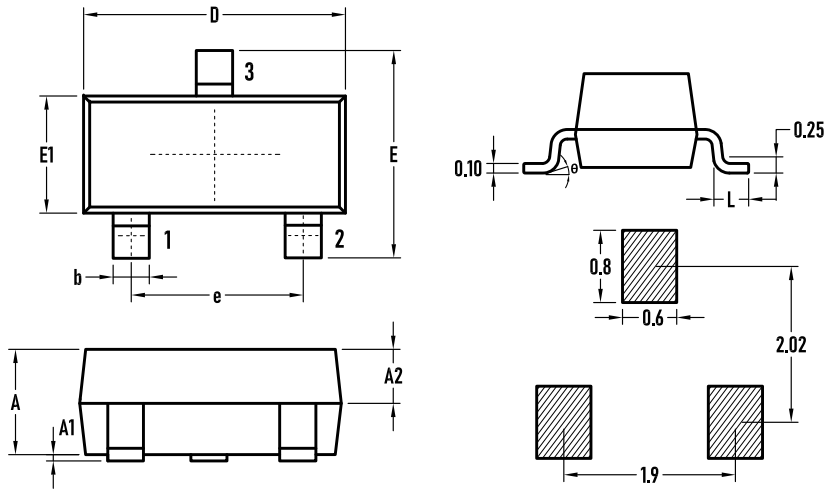
Figure 6 : Safe Operating Area



FMMT493

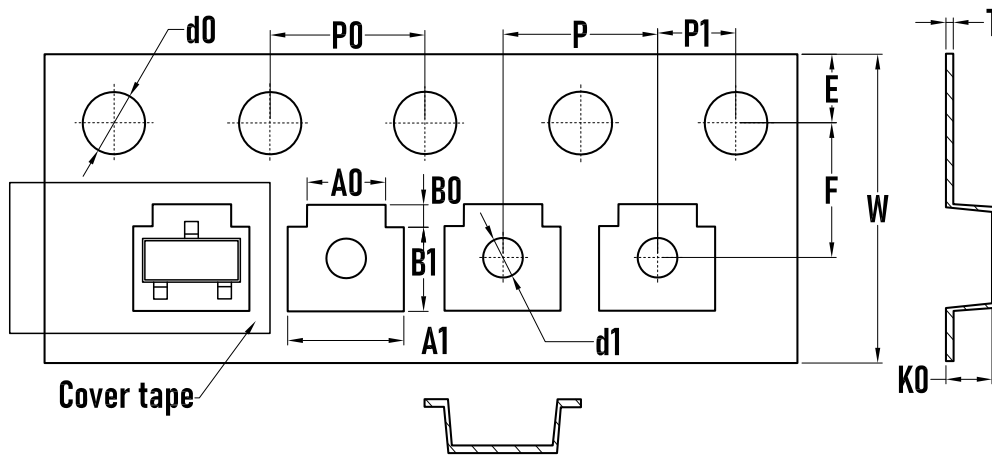
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Outline Drawing - SOT-23



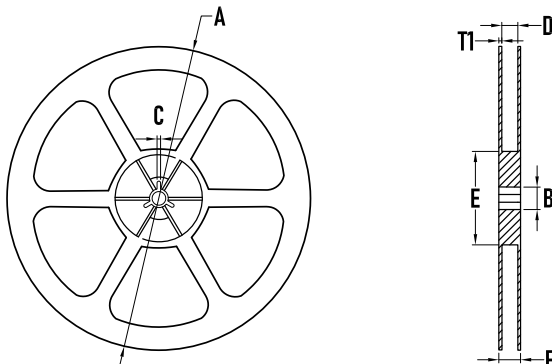
SYMBOL	MILLIMETER		
	MIN.	Typ	MAX
A	0.95	1.00	—
A1	0.02	0.06	0.10
A2	—	0.60	—
D	2.85	2.90	2.95
b	0.37	0.40	0.43
E	2.35	2.40	2.45
E1	1.25	1.30	1.35
e	1.85	1.90	1.95
L	0.35	0.40	0.48
θ	0	—	6°

Packaging Tape - SOT-23



SYMBOL	MILLIMETER
A0	2.10±0.10
A1	3.10±0.10
B0	0.65±0.10
B1	2.75±0.10
d0	1.55±0.10
d1	1.00±0.05
E	1.75±0.10
F	3.50±0.10
K0	1.10±0.10
P	4.00±0.10
P0	4.00±0.10
P1	2.00±0.10
W	8.00±0.30
T	0.20 ±0.05

Packaging Reel



SYMBOL	MILLIMETER
A	177.8±0.2
B	3.1
C	13.50
D	9.6±0.3
E	75±0.2
F	12.3±0.3
T1	1.0±0.2
Quantity	3000PCS

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Revision: 2022-Jan-1-A



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