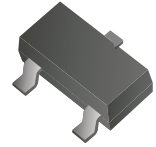


FMMT493-G (NPN) RoHS Device

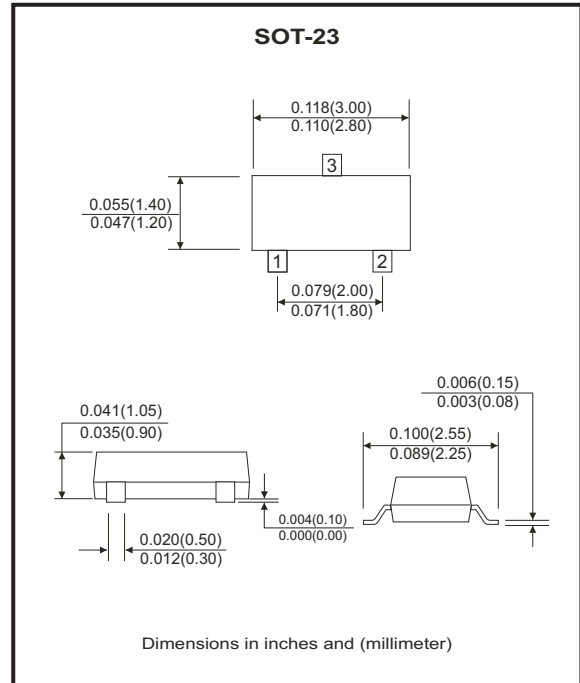
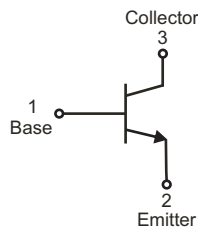


Features

- Complementary type FMMT593
- Low saturation voltage
- High hFE Max. 300@250mA
- I_C = 1A

Circuit Diagram

- 1 : BASE
- 2 : EMITTER
- 3 : COLLECTOR



Maximum Ratings (at T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-base voltage	V _{CBO}	120	V
Collector-emitter voltage	V _{CEO}	100	V
Emitter-base voltage	V _{EB0}	5	V
Collector current	I _C	1000	mA
Collector power dissipation	P _C	250	mW
Thermal resistance from junction to ambient	R _{θJA}	500	°C/W
Junction temperature range	T _J	150	°C
Storage temperature range	T _{stg}	-55~+150	°C

Electrical Characteristics (at TA=25°C unless otherwise noted)

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

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

RATING AND CHARACTERISTIC CURVES (FMMT493-G)

Fig.1 - Static Characteristic

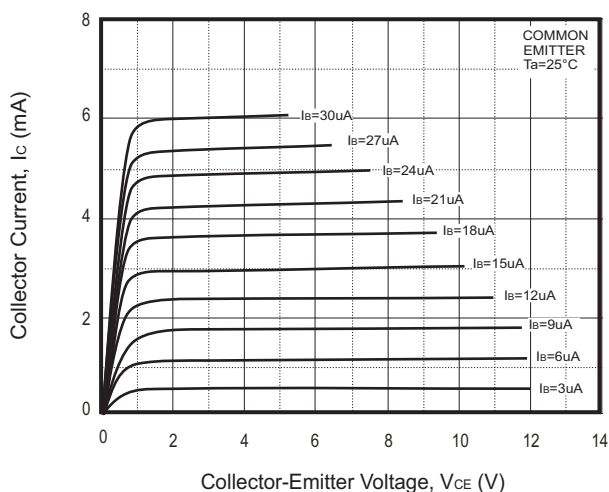
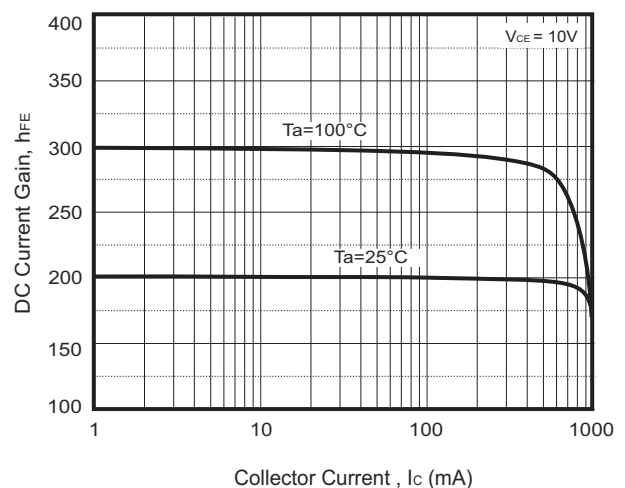


Fig.2 - $h_{FE} - I_C$



RATING AND CHARACTERISTIC CURVES (FMMT493-G)

Fig.3 - $V_{BEsat} - I_c$

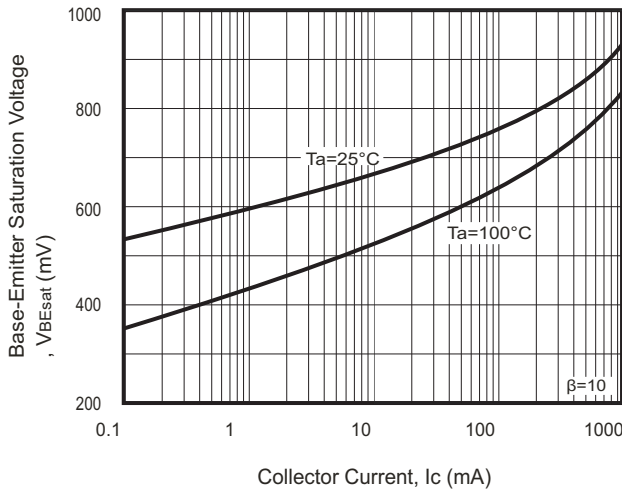


Fig.4- $V_{CEsat} - I_c$

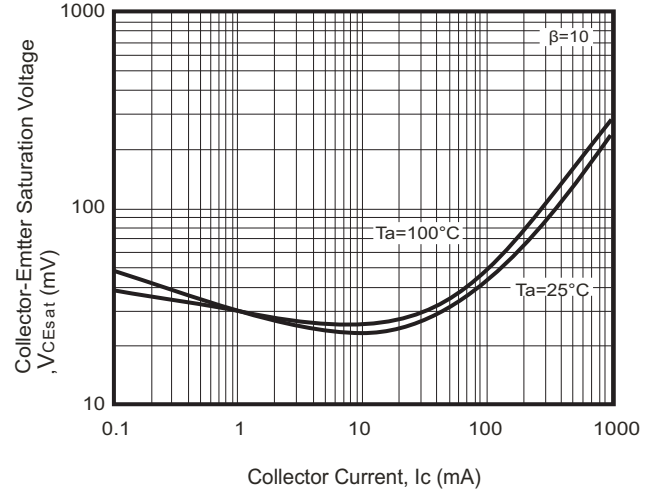


Fig.5 - $f_r - I_c$

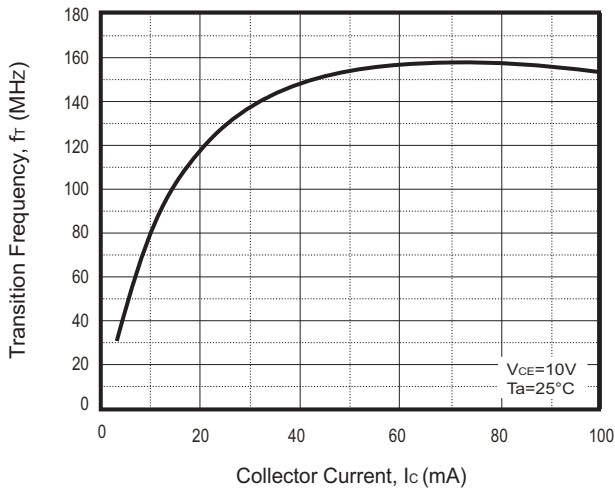


Fig.6 - $I_c - V_{BE}$

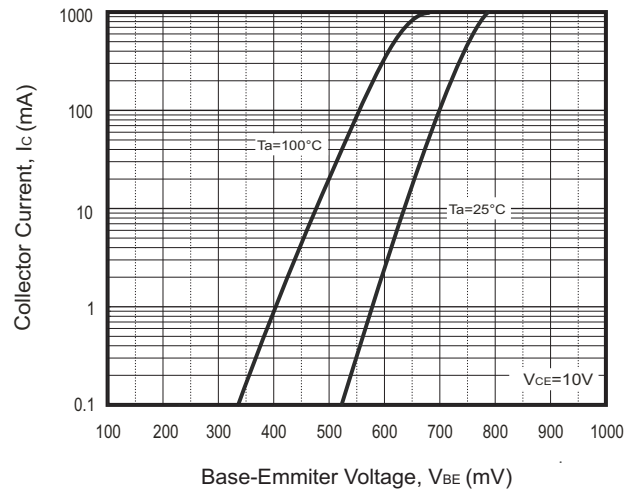
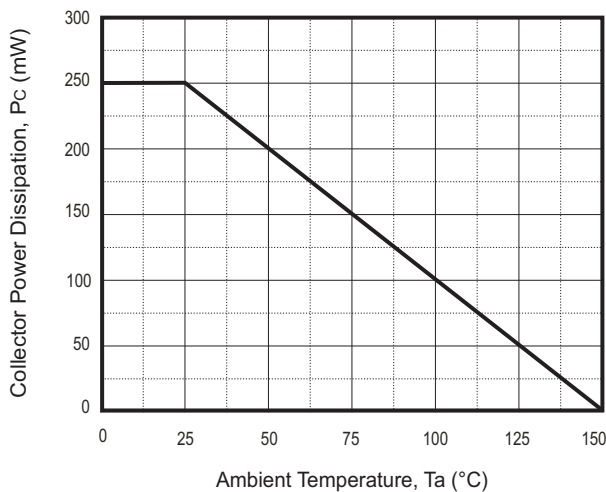
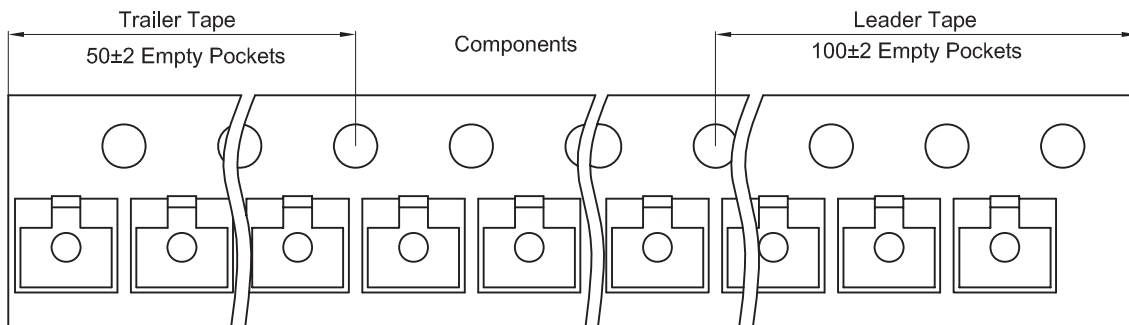
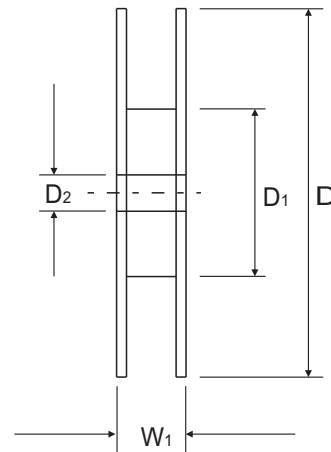
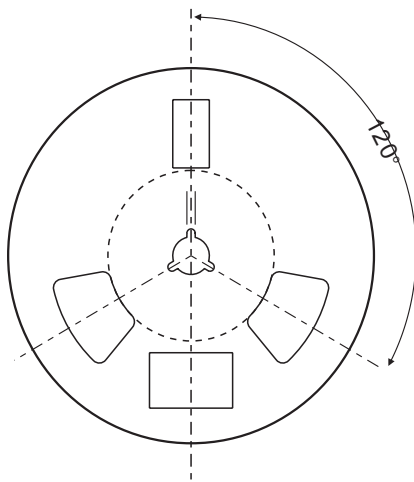
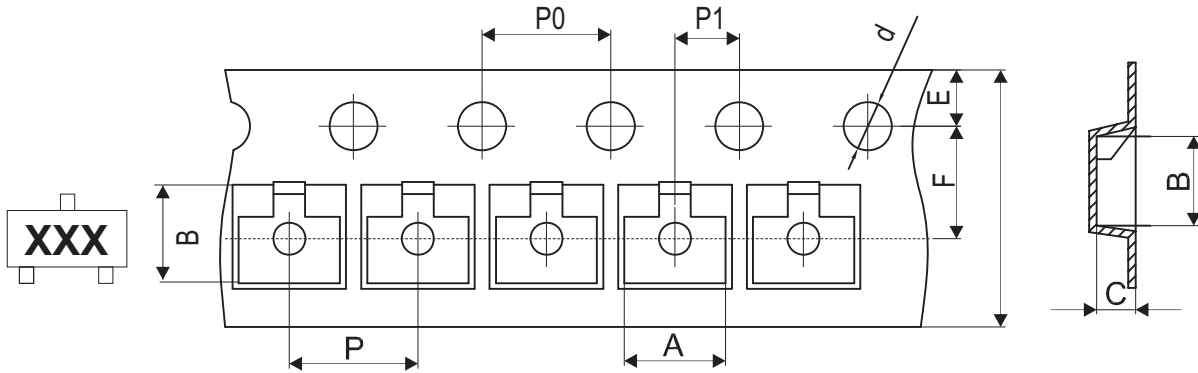


Fig.7 - $P_c - T_a$



Reel Taping Specification

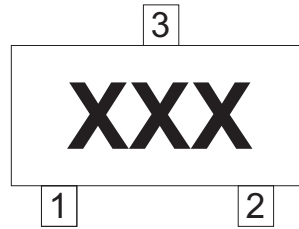


SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 + 0.30 / - 0.10	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.315 + 0.012 / - 0.004	0.484 ± 0.039

Marking Code

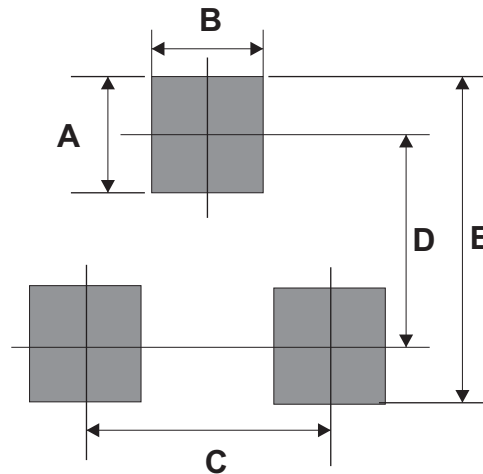
Part Number	Marking Code
FMMT493-G	493



xxx = Product type marking code

Suggested PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.80	0.031
B	0.60	0.024
C	1.90	0.075
D	2.02	0.080
E	2.82	0.111



Standard Packaging

Case Type	Qty Per Reel	Reel Size
	(Pcs)	(inch)
SOT-23	3,000	7