

MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



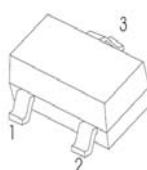
PLED

Product data sheet

FMMT593 TRANSISTOR (PNP)



SOT - 23



1. BASE
2. EMITTER
3. COLLECTOR

FEATURES

- Complementary Type FMMT493

MARKING:593

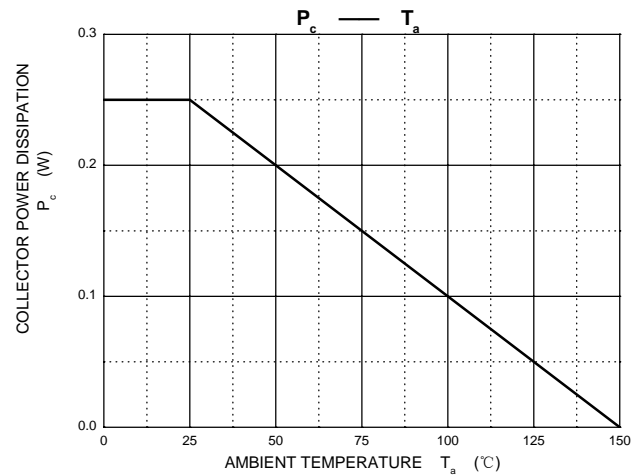
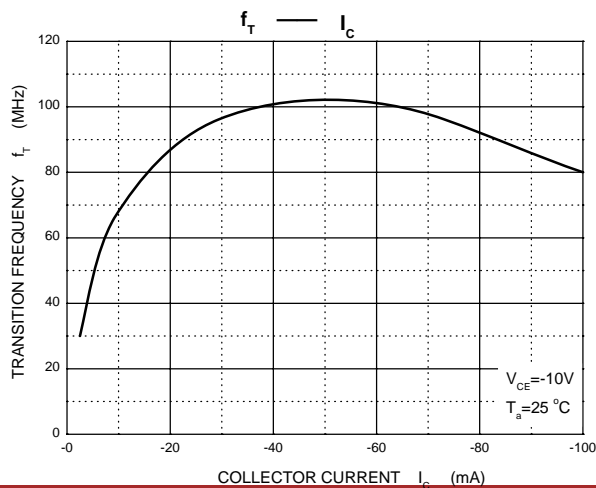
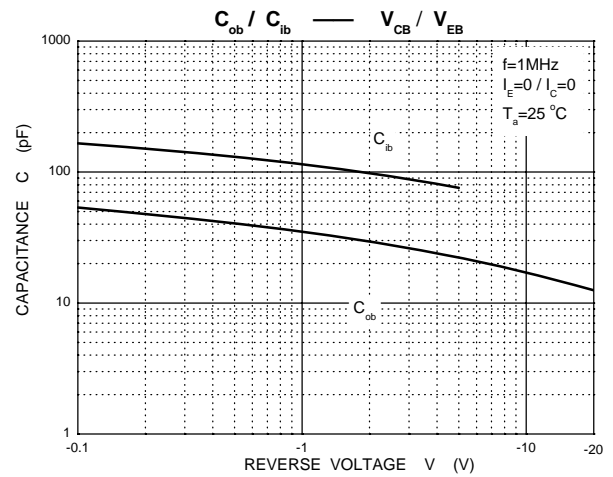
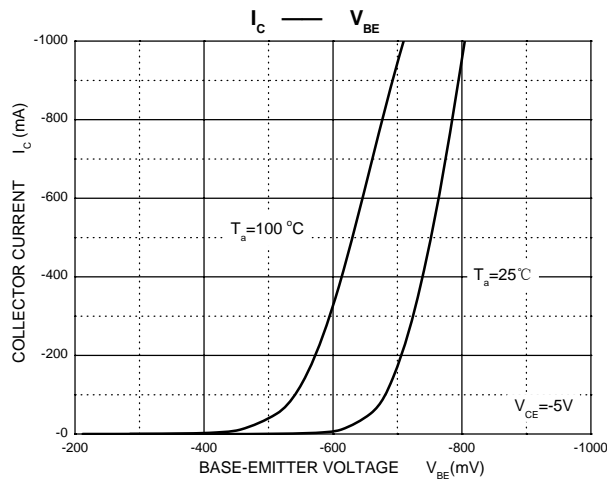
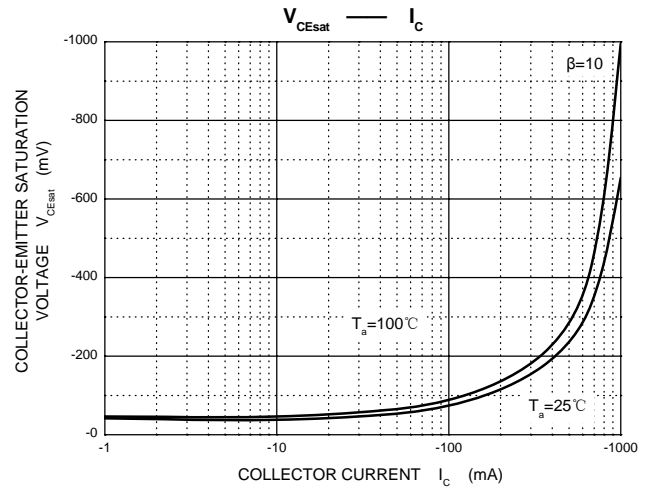
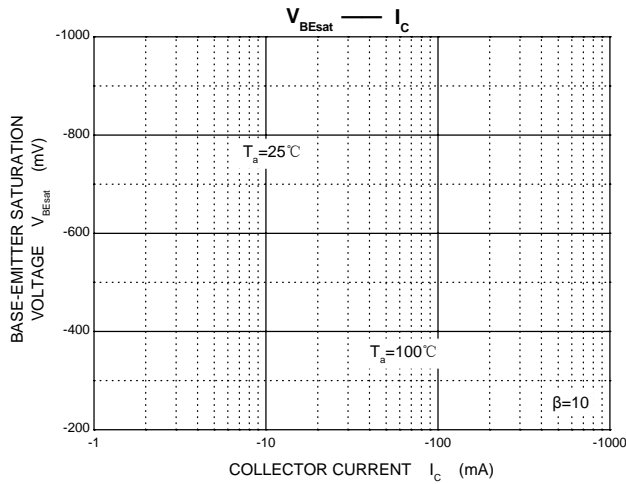
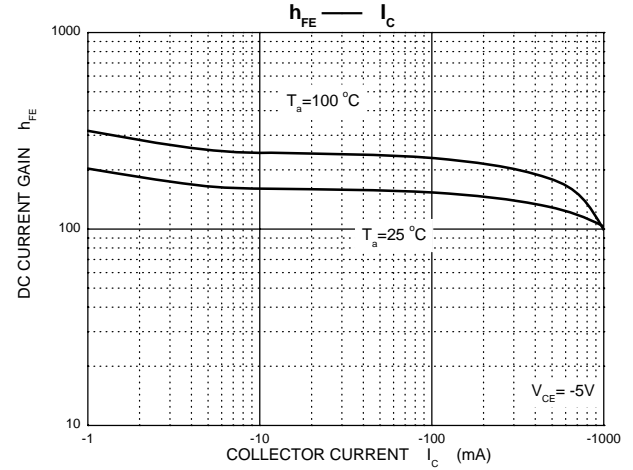
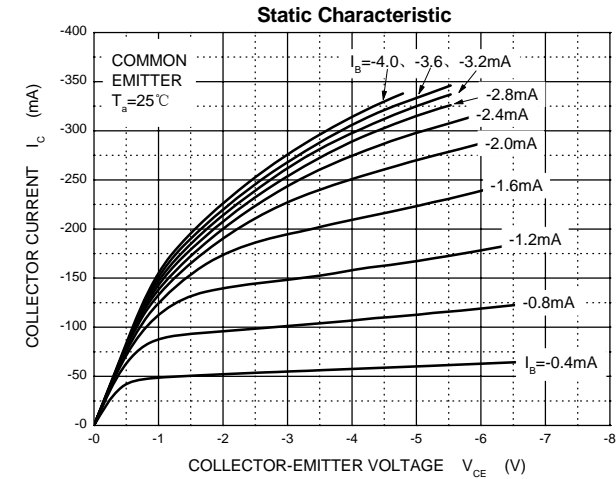
MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

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	-1	A
P_C	Collector Power Dissipation	250	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	500	$^{\circ}\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

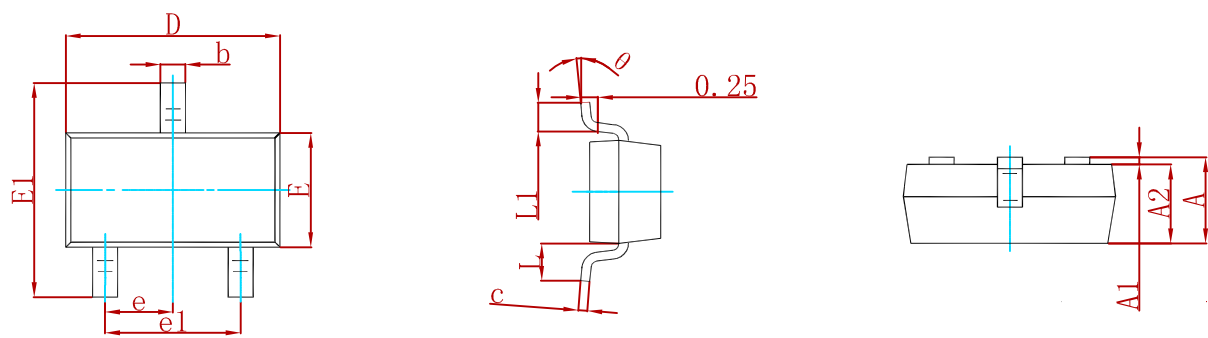
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

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	$h_{FE(1)}^*$	$V_{CE}=-5\text{V}, I_C=-1\text{mA}$	100			
	$h_{FE(2)}^*$	$V_{CE}=-5\text{V}, I_C=-250\text{mA}$	100			
	$h_{FE(3)}^*$	$V_{CE}=-5\text{V}, I_C=-0.5\text{A}$	100		300	
	$h_{FE(4)}^*$	$V_{CE}=-5\text{V}, I_C=-1\text{A}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)1}^*$	$I_C=-250\text{mA}, I_B=-25\text{mA}$			-0.2	V
	$V_{CE(sat)2}^*$	$I_C=-500\text{mA}, I_B=-50\text{mA}$			-0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$	$I_C=-500\text{mA}, I_B=-50\text{mA}$			-1.1	V
Base-emitter voltage	V_{BE}^*	$V_{CE}=-5\text{V}, I_C=-1\text{mA}$			-1	V
Transition frequency	f_T	$V_{CE}=-10\text{V}, I_C=-50\text{mA}, f=100\text{MHz}$	50			MHz
Collector output capacitance	C_{ob}	$V_{CB}=-10\text{V}, I_E=0, f=1\text{MHz}$		5		pF

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

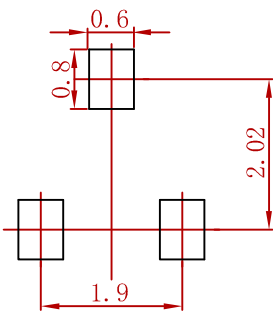


PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		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
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
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°

Suggested Pad Layout



- Note:
- 1.Controlling dimension:in millimeters.
 - 2.General tolerance:± 0.05mm.
 - 3.The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
FMMT593	SOT-23	3000

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