

SOT-23 Plastic-Encapsulate Transistors

FMMT591 TRANSISTOR (PNP)

FEATURES

850Low equivalent on-

Marking :591

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR

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

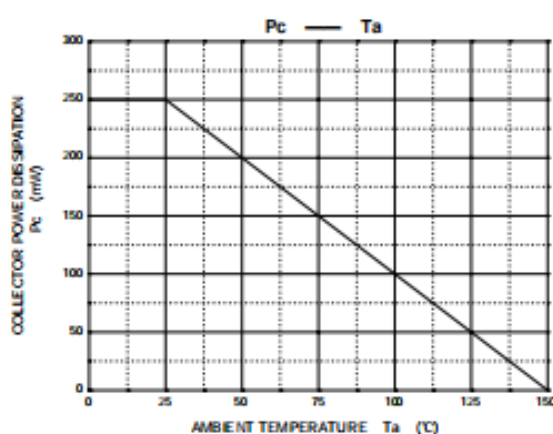
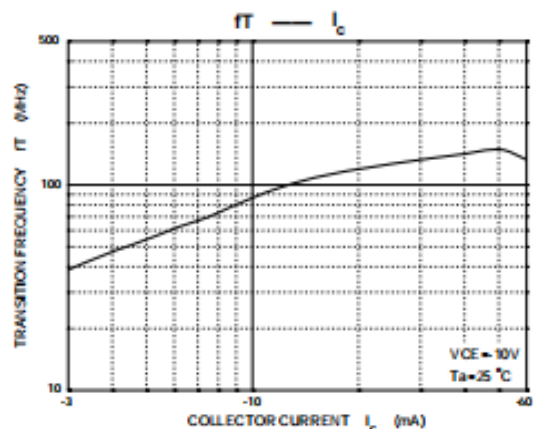
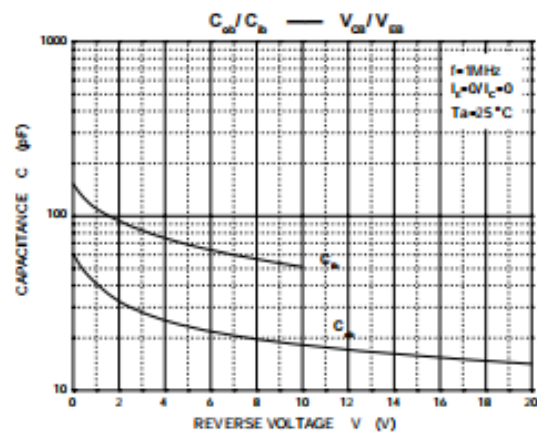
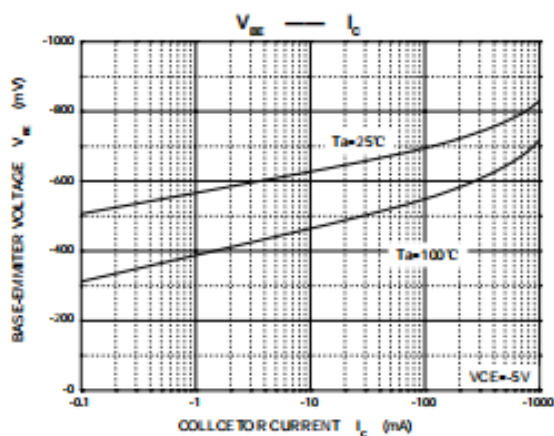
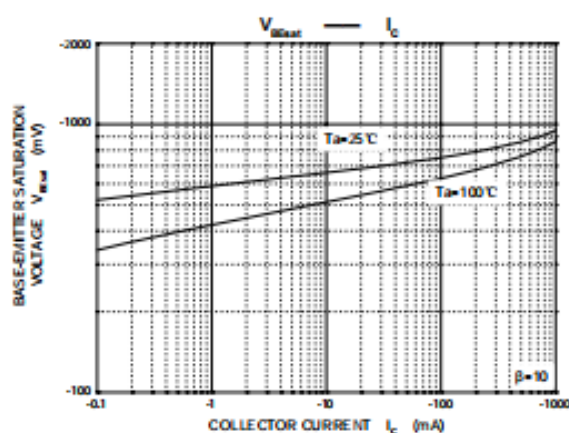
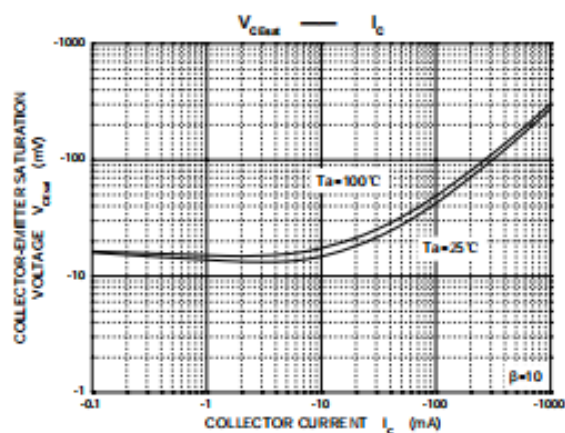
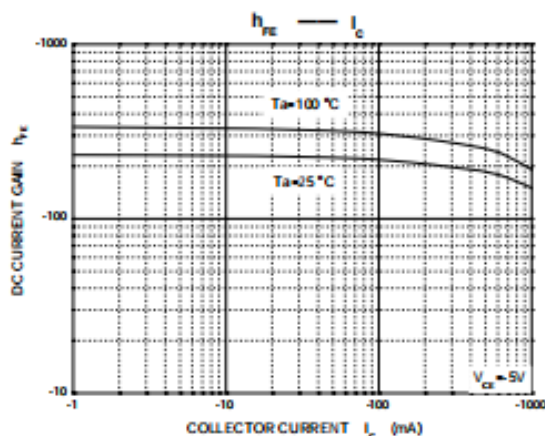
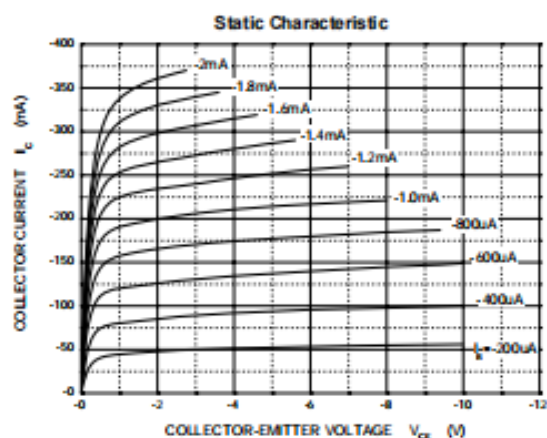
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-80	V
V_{CEO}	Collector-Emitter Voltage	-60	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-1	A
I_{CM}	Peak Pulse Current	-2	A
P_C	Collector Power Dissipation	250	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	500	$^{\circ}\text{C/W}$
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)

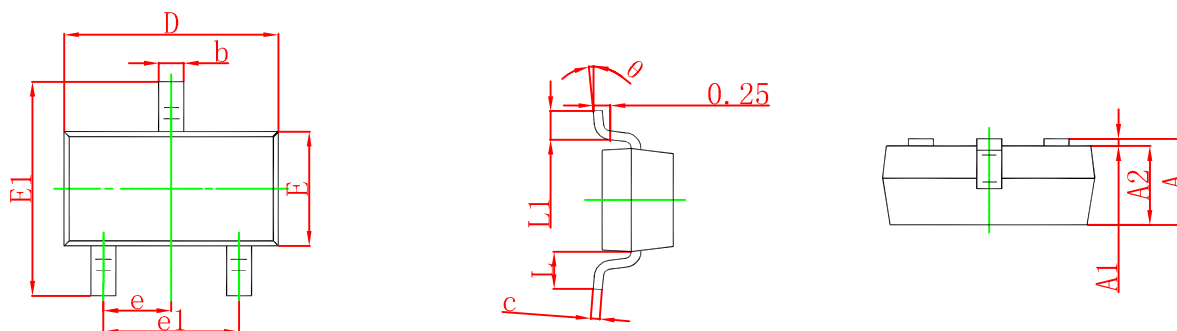
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-100\mu\text{A}, I_E=0$	-80			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^1$	$I_C=-10\text{mA}, I_B=0$	-60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-100\mu\text{A}, I_C=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB}=-60\text{V}, I_E=0$			-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			
	$h_{FE(2)}^1$	$V_{CE}=-5\text{V}, I_C=-500\text{mA}$	100		300	
	$h_{FE(3)}^1$	$V_{CE}=-5\text{V}, I_C=-1\text{A}$	80			
	$h_{FE(4)}^1$	$V_{CE}=-5\text{V}, I_C=-2\text{A}$	15			
Collector-emitter saturation voltage	$V_{CE(sat)1}^1$	$I_C=-500\text{mA}, I_B=-50\text{mA}$			-0.3	V
	$V_{CE(sat)2}^1$	$I_C=-1\text{A}, I_B=-100\text{mA}$			-0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}^1$	$I_C=-1\text{A}, I_B=-100\text{mA}$			-1.2	V
Base-emitter voltage	V_{BE}^1	$V_{CE}=-5\text{V}, I_C=-1\text{A}$			-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}	$V_{CB}=-10\text{V}, f=1\text{MHz}$			10	pF

¹Measured under pulsed conditions, Pulse width=300 μs , Duty cycle $\leq 2\%$.

Typical Characteristics

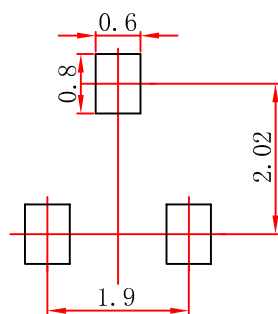


SOT-23 Package Outline Dimensions



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°

SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

Notice

1. All product, product specifications and data are subject to change without notice to improve.

The right to explain is owned by CCX electronics company.

2. Confirm that operation temperature is within the specified range described in the product specification.

Avoid applying power exceeding normal rated power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.

3. CCX shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.