

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



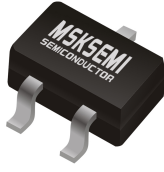
GDT



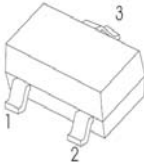
PLED

Product data sheet

## FMMT591 TRANSISTOR (PNP)



SOT - 23



- 1. BASE
- 2. EMITTER
- 3. COLLECTOR

### FEATURES

Low equivalent on-resistance

Marking :591

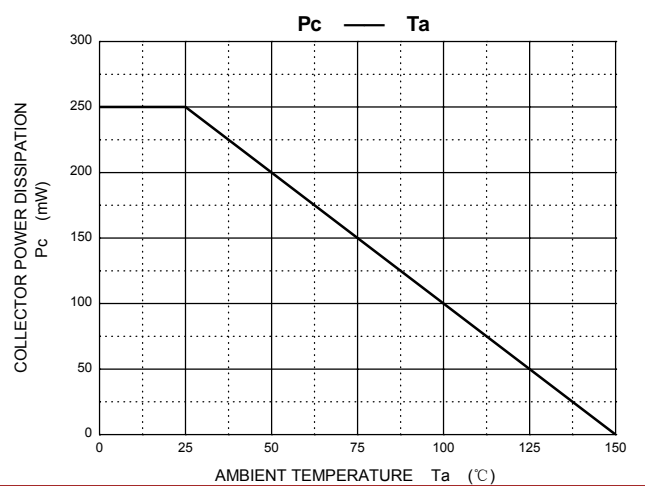
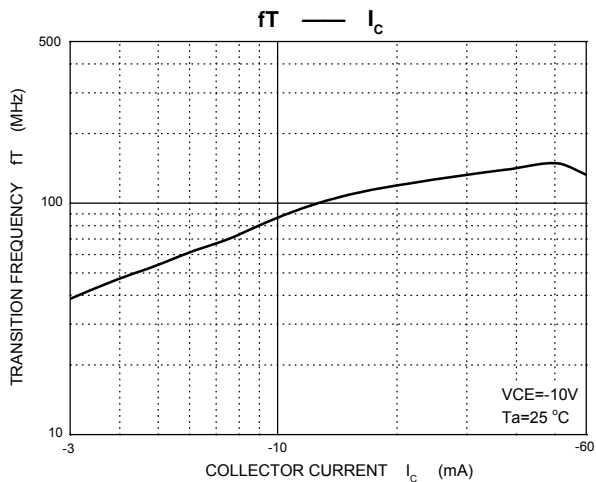
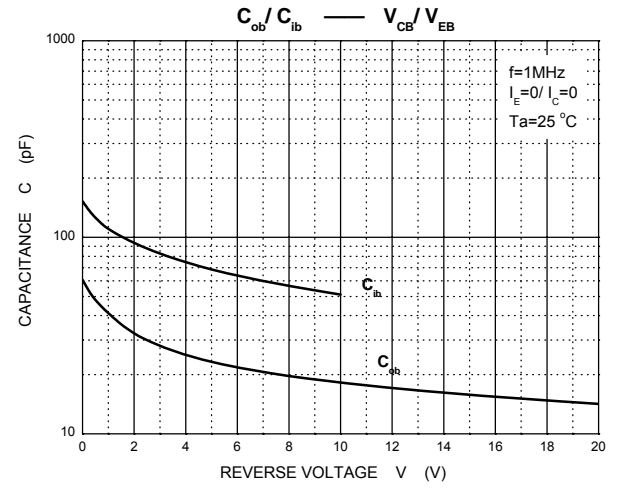
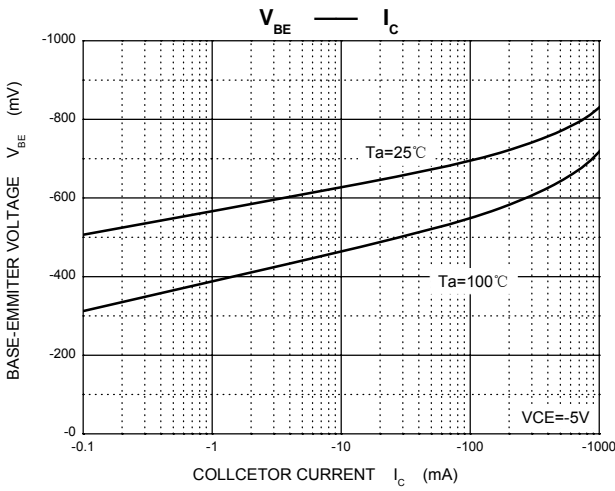
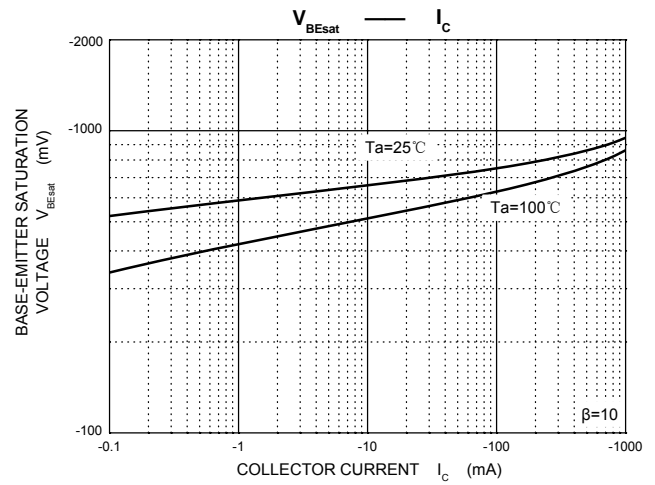
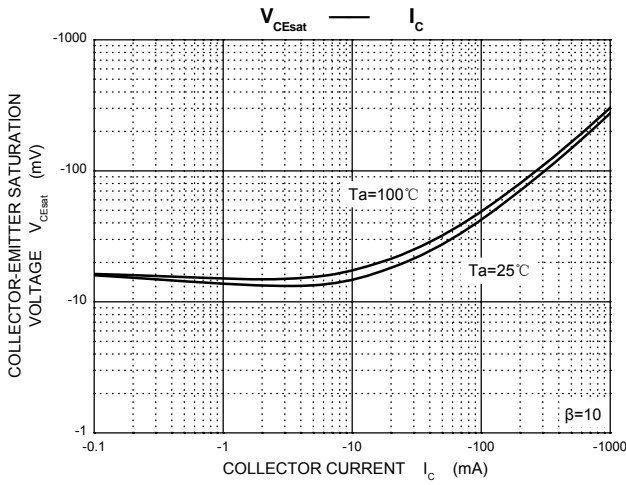
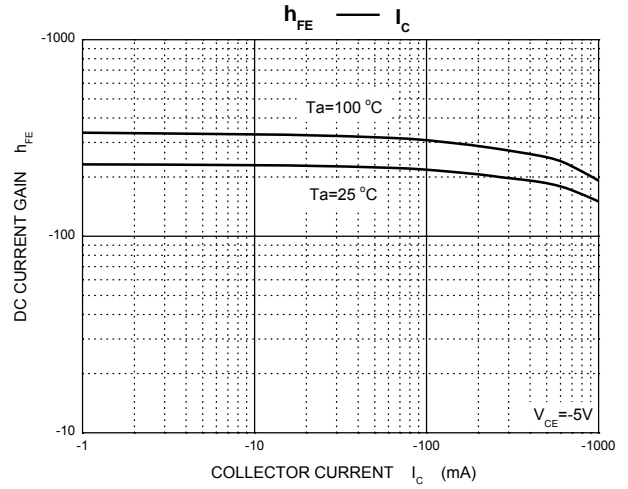
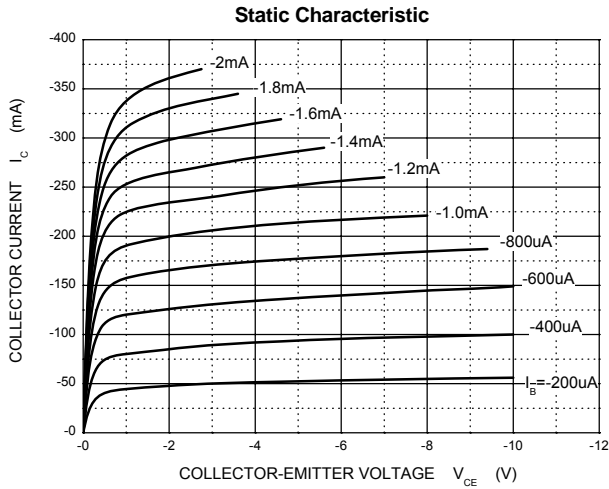
### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	-80	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-60	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current	-1	A
I <sub>CM</sub>	Peak Pulse Current	-2	A
P <sub>C</sub>	Collector Power Dissipation	250	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	500	°C/W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~+150	°C

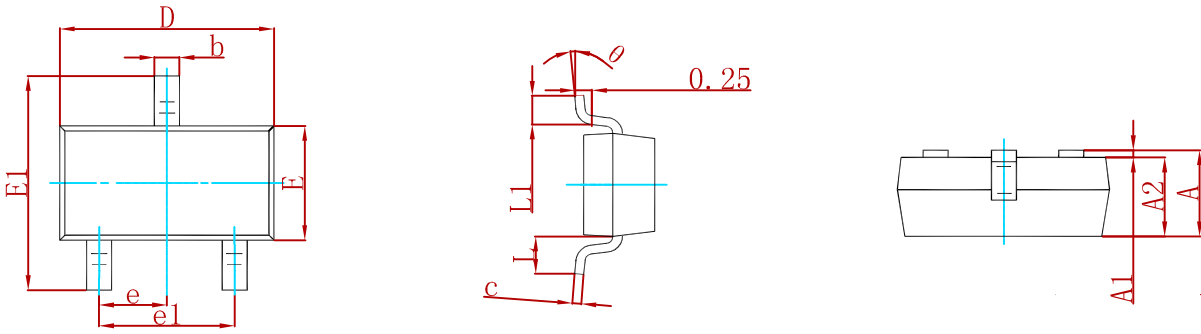
### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-100μA, I <sub>E</sub> =0	-80			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub> <sup>1</sup>	I <sub>C</sub> =-10mA, I <sub>B</sub> =0	-60			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-100μA, I <sub>C</sub> =0	-5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =-60V, I <sub>E</sub> =0			-0.1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-4V, I <sub>C</sub> =0			-0.1	μA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-1mA	100			
	h <sub>FE(2)</sub> <sup>1</sup>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-500mA	100		300	
	h <sub>FE(3)</sub> <sup>1</sup>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-1A	80			
	h <sub>FE(4)</sub> <sup>1</sup>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-2A	15			
Collector-emitter saturation voltage	V <sub>CE(sat)1</sub> <sup>1</sup>	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA			-0.3	V
	V <sub>CE(sat)2</sub> <sup>1</sup>	I <sub>C</sub> =-1A, I <sub>B</sub> =-100mA			-0.6	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub> <sup>1</sup>	I <sub>C</sub> =-1A, I <sub>B</sub> =-100mA			-1.2	V
Base-emitter voltage	V <sub>BE</sub> <sup>1</sup>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-1A			-1	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-50mA, f=100MHz	150			MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, f=1MHz			10	pF

<sup>1</sup>Measured under pulsed conditions, Pulse width=300μs, Duty cycle≤2%.

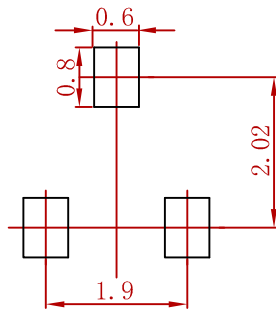


**PACKAGE MECHANICAL DATA**



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
FMMT591	SOT-23	3000

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