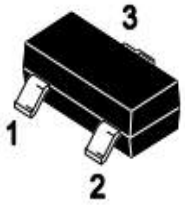
PNP Transistor

Features

- For Switching and AF Amplifier Applications.

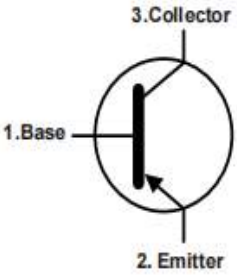
SOT-23



1.Base 2.Emitter 3.Collector

Marking Code : 593

Equivalent Circuit



Absolute Maximum Ratings

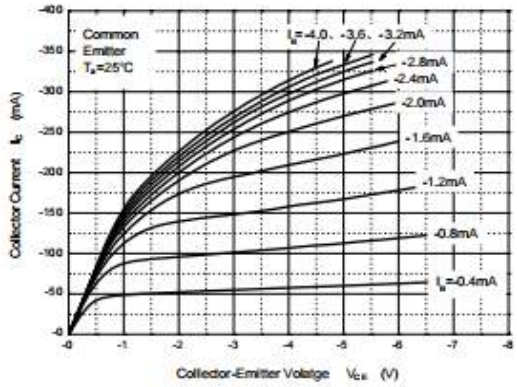
Ratings at 25℃ ambient temperature unless otherwise specified.

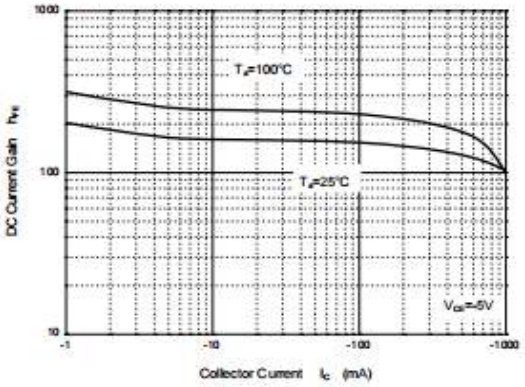
Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	120	V
Collector Emitter Voltage	$-V_{CEO}$	100	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	1	A
Maximum Power Dissipation	P_D	250	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-55 to +150	℃

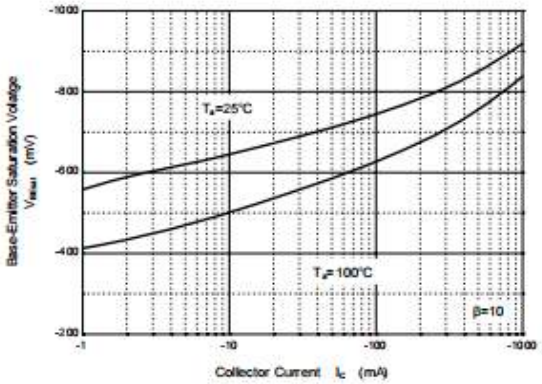
Electrical Characteristics (T_A=25℃)

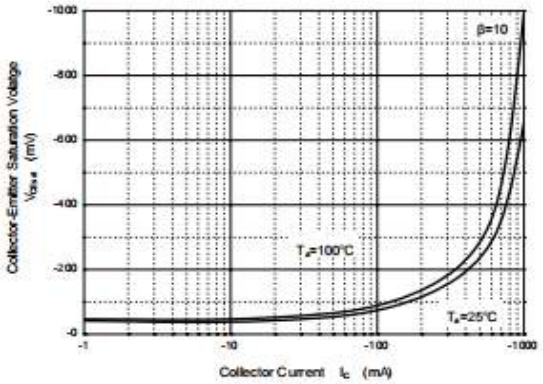
Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at V_{CE} = -5 V, I_C = -1 mA at V_{CE} = -5 V, I_C = -250 mA at V_{CE} = -5 V, I_C = -0.5 A at V_{CE} = -5 V, I_C = -1 A	H_{FE}	 100 100 100 50	 -- -- 300 --	--
Collector Base Cutoff Current at V_{CB} = -100V	$-I_{CBO}$	--	0.1	μA
Collector Emitter Cutoff Current at V_{CES} = -100V	$-I_{CES}$	--	0.1	μA
Emitter Base Cutoff Current at V_{EB} = -4 V	$-I_{EBO}$	--	0.1	μA
Collector Base Breakdown Voltage at I_C = -100 μA	$-V_{(BR)CBO}$	120	--	V
Collector Emitter Breakdown Voltage at I_C = -1 mA	$-V_{(BR)CEO}$	100	--	V
Emitter Base Breakdown Voltage at I_E = -100 μA	$-V_{(BR)EBO}$	5	--	V
Collector Emitter Saturation Voltage at I_C = -250 mA, I_B = -25 mA at I_C = -500 mA, I_B = -50 mA	$-V_{CE(sat)}$	 -- --	 0.2 0.3	V
Base Emitter Saturation Voltage at I_C = -500 mA, I_B = -50 mA	$-V_{BE(sat)}$	--	1.1	V
Base Emitter On Voltage at V_{CE} = -5 V, I_C = -1m A	$-V_{BE(on)}$	--	1	V
Transition Frequency at V_{CE} = -10 V, I_C = -50 mA, f = 100 MHz	F_T	150	--	MHz
Collector Output Capacitance at V_{CB} = -10 V, f = 1 MHz	C_{ob}	--	5	pF

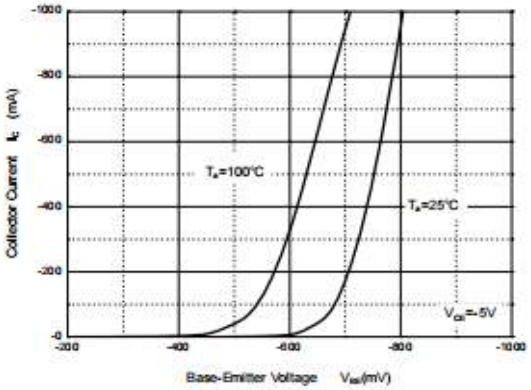
Typical Characteristic Curves

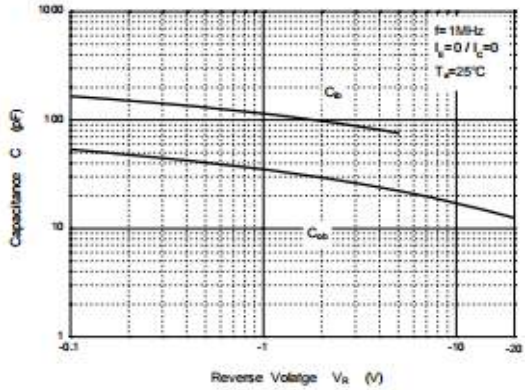


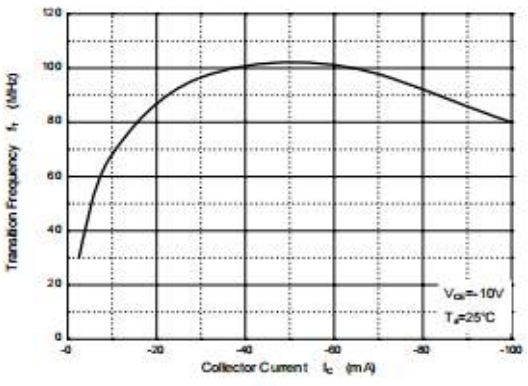


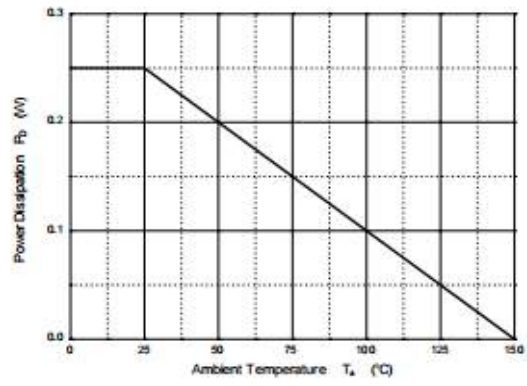








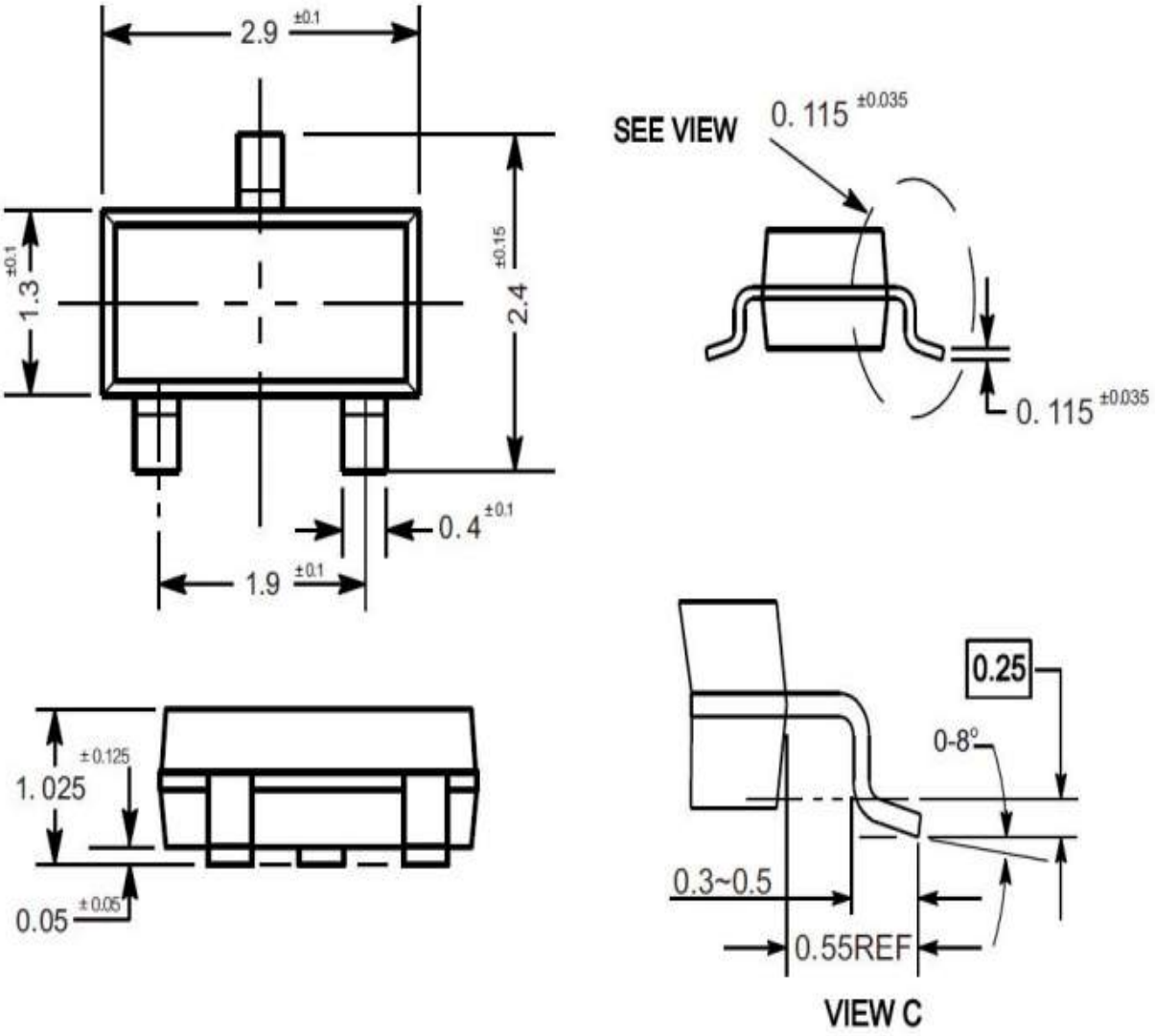




Package Outline

SOT-23

Dimensions in mm

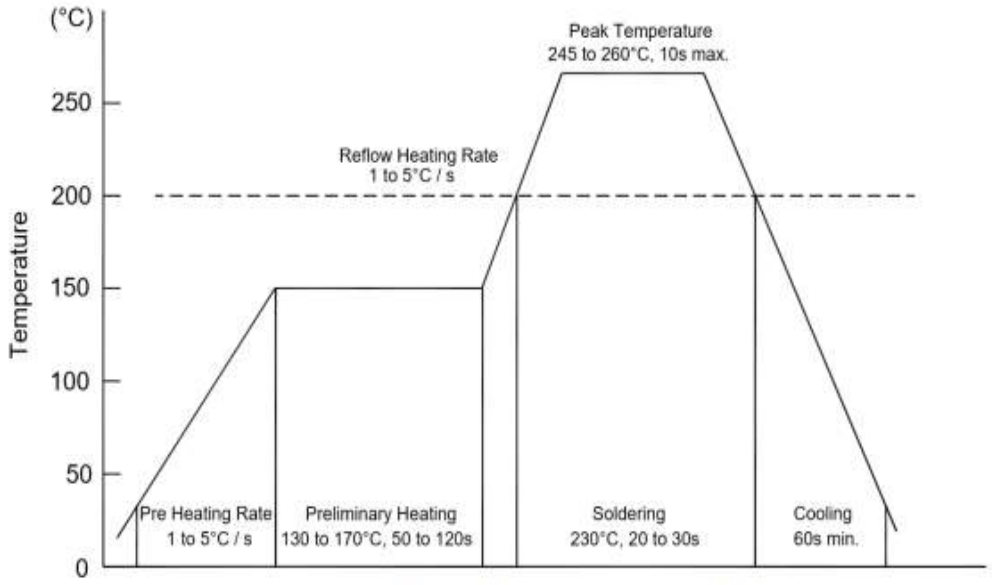


Ordering Information

Device	Package	Shipping
FMMT593	SOT-23	3,000PCS/Reel&7inches

Conditions of Soldering and Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters:

- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

◆ Conditions of hand soldering

- Temperature: 370 °C
- Time: 3s max.
- Times: one time

◆ Storage conditions

- **Temperature**
  5 to 40 °C
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing