

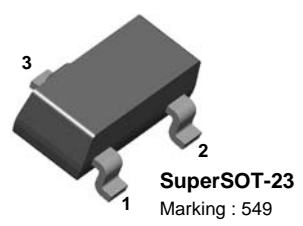


# FMMT549

## PNP Low Saturation Transistor

### Features

- This device is designed with high current gain and low saturation voltage with collector currents up to 2A continuous.
- Sourced from process PB.



1. Base 2. Emitter 3. Collector

### Absolute Maximum Ratings\* $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Unit
$V_{CEO}$	Collector-Emitter Voltage	-30	V
$V_{CBO}$	Collector-Base Voltage	-35	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current - Continuous	-1	A
	- Peak Pulse Current	-2	A
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

#### NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations

### Thermal Characteristics\*

Symbol	Parameter	Value	Unit
$P_D$	Total Device Dissipation, by $R_{\theta JA}$ Derate above $25^\circ\text{C}$	500	mW
		4	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	250	$^\circ\text{C}/\text{W}$

\* Device mounted on FR-4 PCB 4.5" X 5", mounting pad 0.02 in<sup>2</sup> of 2 oz copper.

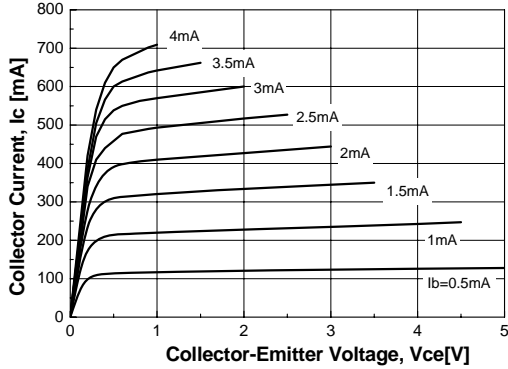
**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max.	Units
<b>Off Characteristics</b>					
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -10\text{mA}, I_B = 0$	-30		V
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -100\mu\text{A}, I_E = 0$	-35		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -100\mu\text{A}, I_C = 0$	-5.0		V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = -30\text{V}, I_E = 0$ $V_{CB} = -30\text{V}, I_E = 0, T_A = 100^\circ\text{C}$		-100 -10	nA $\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = -4.0\text{V}, I_C = 0$		-100	nA
<b>On Characteristics*</b>					
$h_{FE}$	DC Current Gain	$V_{CE} = -2.0\text{V}, I_C = -50\text{mA}$ $V_{CE} = -2.0\text{V}, I_C = -500\text{mA}$ $V_{CE} = -2.0\text{V}, I_C = -1\text{A}$ $V_{CE} = -2.0\text{V}, I_C = -2\text{A}$	70 100 80 40	300	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = -1\text{A}, I_B = -100\text{mA}$ $I_C = -2\text{A}, I_B = -200\text{mA}$		-500 -750	mV mV
$V_{BE}(\text{sat})$	Base-Emitter Saturation Voltage	$I_C = -1\text{A}, I_B = -100\text{mA}$		-1.25	V
$V_{BE}(\text{on})$	Base-Emitter On Voltage	$I_C = -1\text{A}, V_{CE} = -2.0\text{V}$		-1.0	V
<b>Small Signal Characteristics</b>					
$f_T$	Current Gain Bandwidth Product	$I_C = -100\text{mA}, V_{CE} = -5\text{V},$ $f = 100\text{MHz}$	100		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		25	pF

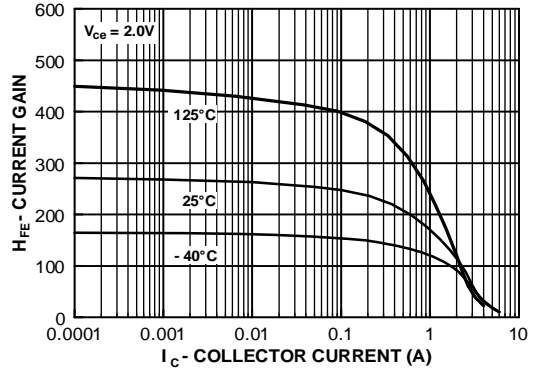
\* DC Item are tested by Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Typical Performance Characteristics

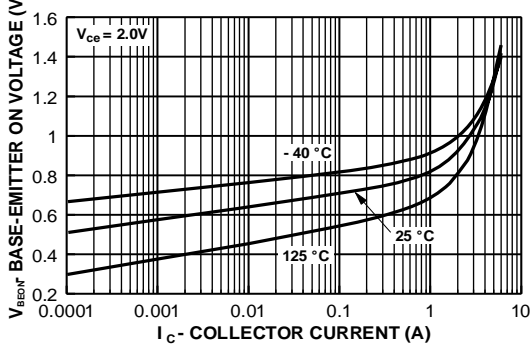
**Collector- Emitter Voltage vs Collector current**



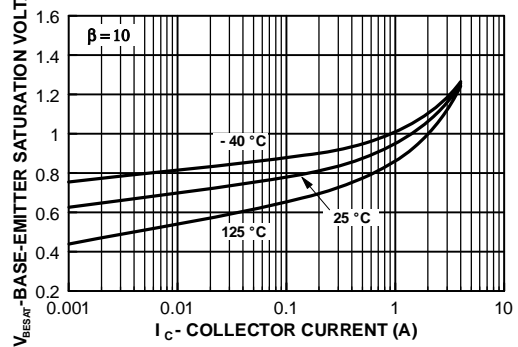
**Current Gain vs Collector Current**



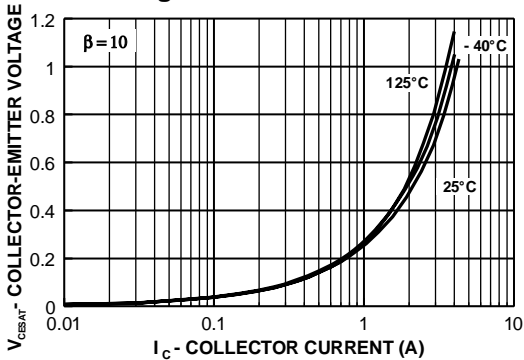
**Base-Emitter On Voltage vs Collector Current**



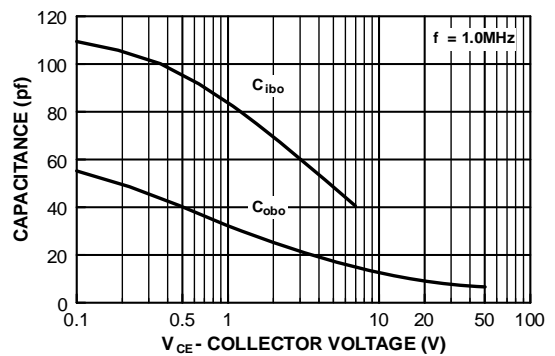
**Base-Emitter Saturation Voltage vs Collector Current**



**Collector-Emitter Saturation Voltage vs Collector Current**

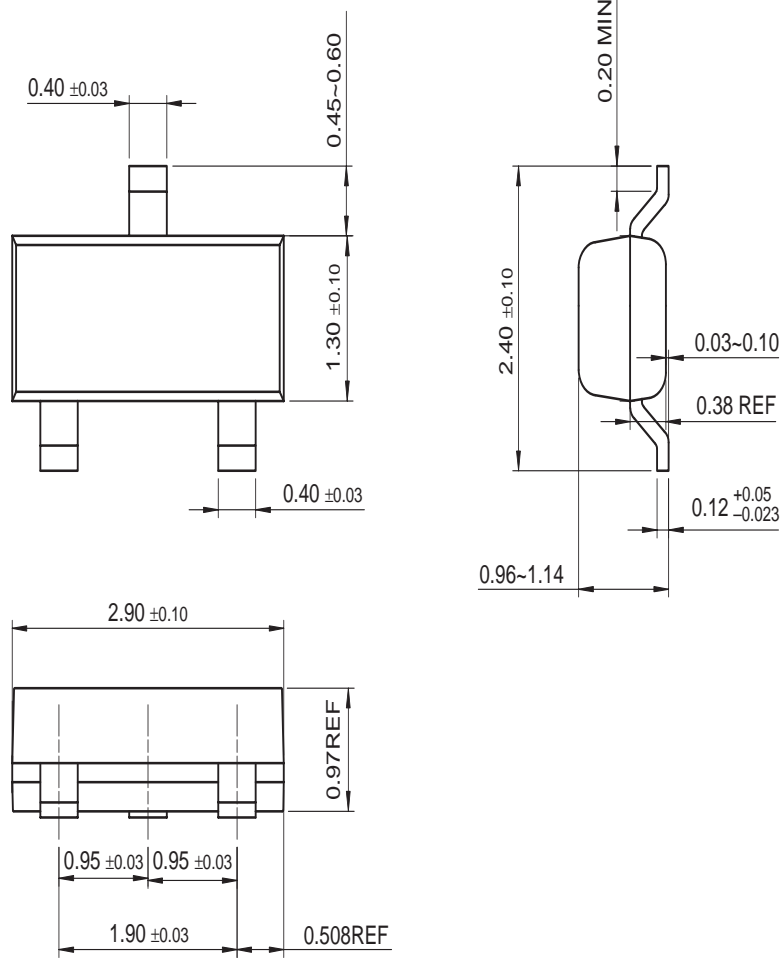


**Input/Output Capacitance vs Reverse Bias Voltage**



**Physical Dimensions**

**SOT-23**









Dimensions in Millimeters



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