



August 2009

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 - Peak Pulse Current	-1 -2	A 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°C	500 4	mW mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	250	$^\circ\text{C/W}$

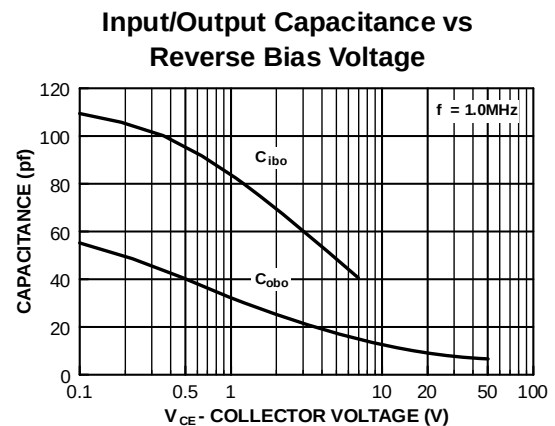
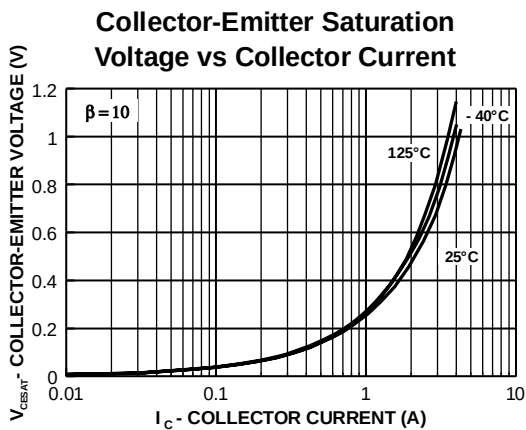
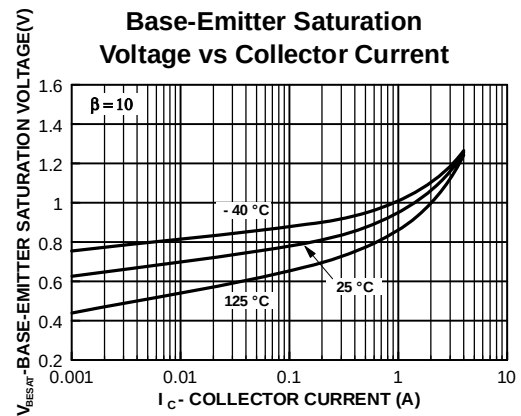
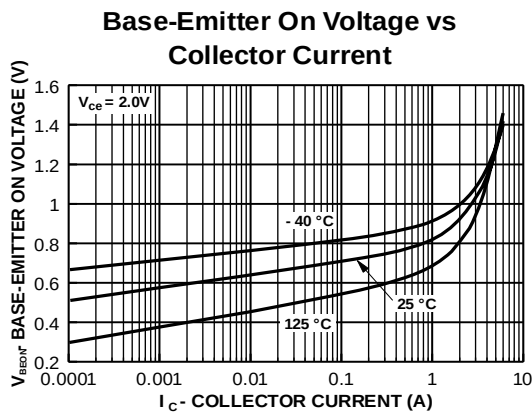
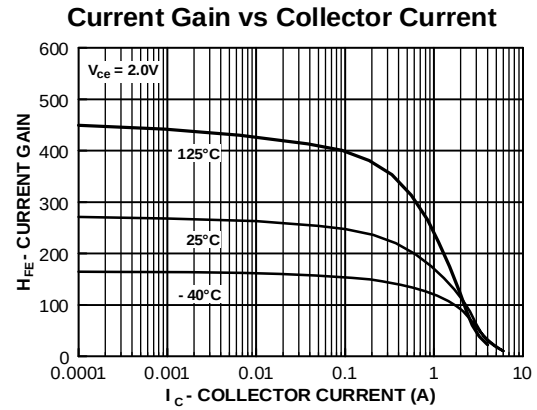
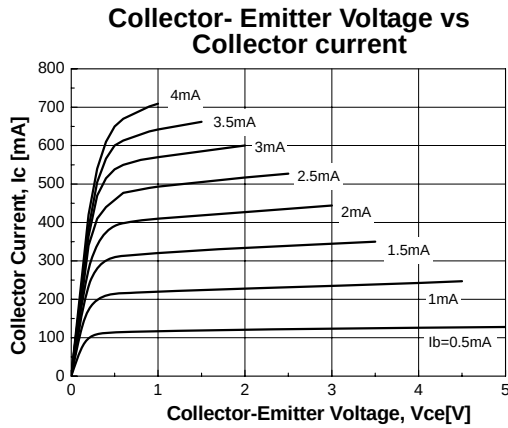
* Device mounted on FR-4 PCB 4.5" X 5", mounting pad 0.02 in² of 2 oz copper.

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

Symbol	Parameter	Conditions	Min.	Max.	Units
Off Characteristics					
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 μA
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -4.0\text{V}$, $I_C = 0$		-100	nA
On Characteristics*					
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
Small Signal Characteristics					
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

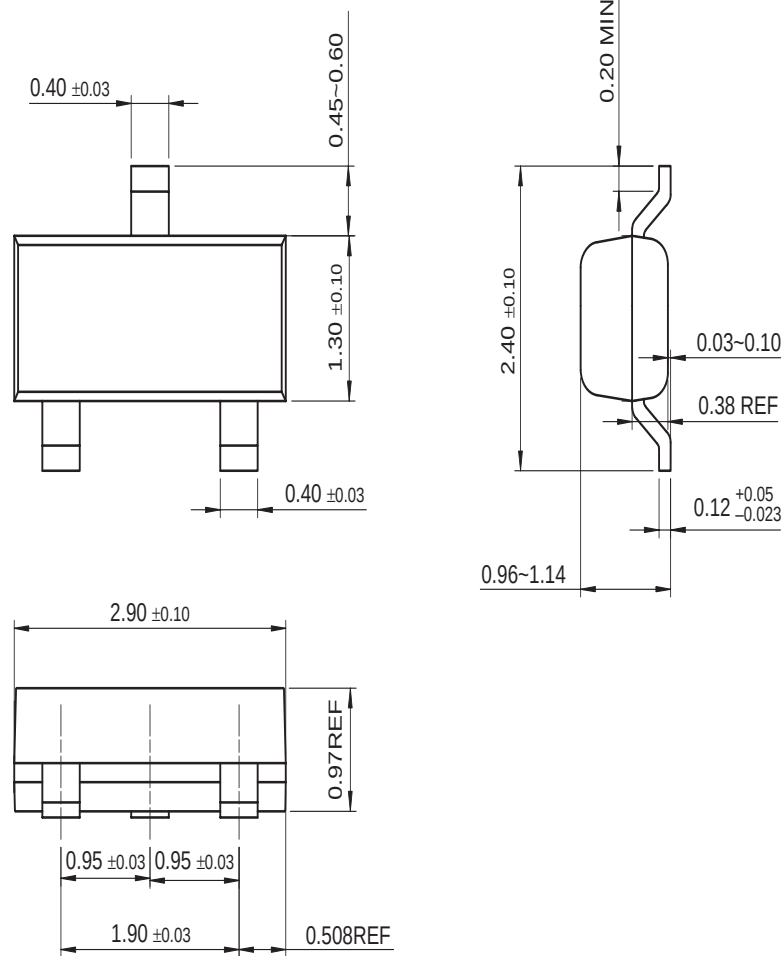
* DC Item are tested by Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Typical Performance Characteristics



Physical Dimensions

SOT-23



Dimensions in Millimeters



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