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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# SOT23 NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

## FMMT449

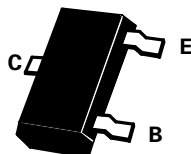
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### FEATURES

\* Low equivalent on-resistance;  $R_{CE(sat)}$  250m $\Omega$  at 1A

COMPLEMENTARY TYPE – FMMT549

PARTMARKING DETAIL – 449



### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	30	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Peak Pulse Current	$I_{CM}$	2	A
Continuous Collector Current	$I_C$	1	A
Base Current	$I_B$	200	mA
Power Dissipation at $T_{amb} = 25^\circ\text{C}$	$P_{tot}$	500	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^\circ\text{C}$

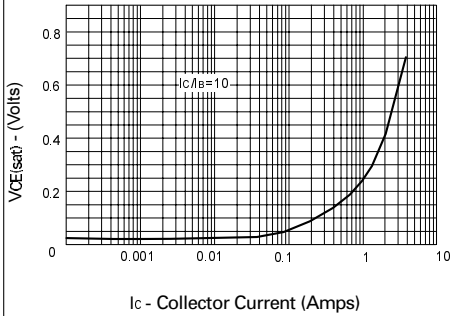
### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50		V	$I_C = 1\text{mA}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30		V	$I_C = 10\text{mA}, I_B = 0^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		V	$I_E = 100\mu\text{A}, I_C = 0$
Collector Cut-Off Current	$I_{CBO}$		0.1 10	$\mu\text{A}$ $\mu\text{A}$	$V_{CB} = 40\text{V}, I_E = 0$ $V_{CB} = 40\text{V}, T_{amb} = 100^\circ\text{C}$
Emitter Cut-Off Current	$I_{EBO}$		0.1	$\mu\text{A}$	$V_{EB} = 4\text{V}, I_C = 0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.5 1.0	V V	$I_C = 1\text{A}, I_B = 100\text{mA}^*$ $I_C = 2\text{A}, I_B = 200\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.25	V	$I_C = 1\text{A}, I_B = 100\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		1.0	V	$I_C = 1\text{A}, V_{CE} = 2\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	70 100 80 40	300		$I_C = 50\text{mA}, V_{CE} = 2\text{V}^*$ $I_C = 500\text{mA}, V_{CE} = 2\text{V}^*$ $I_C = 1\text{A}, V_{CE} = 2\text{V}^*$ $I_C = 2\text{A}, V_{CE} = 2\text{V}^*$
Transition Frequency	$f_T$	150		MHz	$I_C = 50\text{mA}, V_{CE} = 10\text{V}$ $f = 100\text{MHz}$
Output Capacitance	$C_{obo}$		15	pF	$V_{CB} = 10\text{V}, f = 1\text{MHz}$

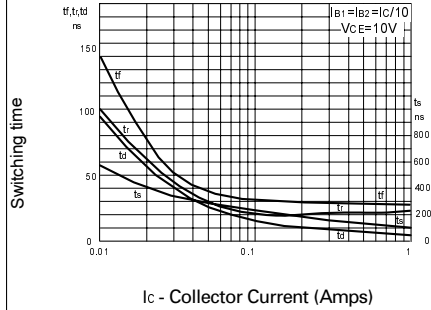
\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$

Spice parameter data is available upon request for this device

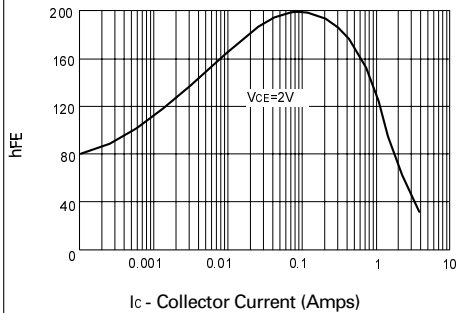
## TYPICAL CHARACTERISTICS



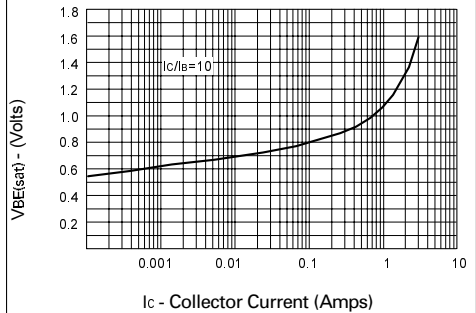
**$V_{CE(sat)}$  v  $I_C$**



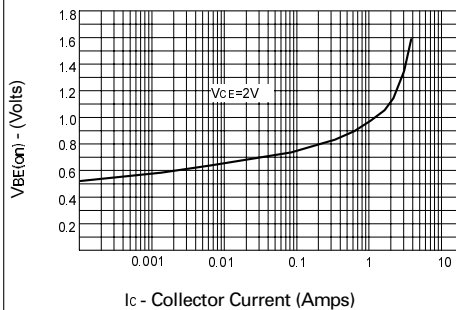
**Switching Speeds**



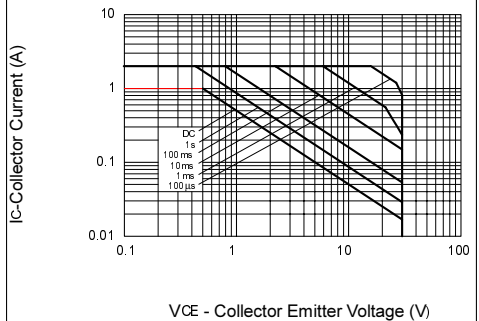
**$h_{FE}$  v  $I_C$**



**$V_{BE(sat)}$  v  $I_C$**



**$V_{BE(on)}$  v  $I_C$**



**Safe Operating Area**