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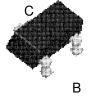
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**FMMT449** 



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# SuperSOT<sup>™</sup>-3

# **NPN Low Saturation Transistor**

These devices are designed with high current gain and low saturation voltage with collector currents up to 2A continuous. Sourced from Process NB.

# Absolute Maximum Ratings\* TA = 25°C unless otherwise noted

Symbol	Parameter	FMMT449	Units
V <sub>CEO</sub>	Collector-Emitter Voltage	30	V
V <sub>CBO</sub>	Collector-Base Voltage	50	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
IC	Collector Current - Continuous - Peak Pulse Current	1 2	A
T <sub>J,</sub> T <sub>stg</sub>	Operating and Storage Junction Temperature Range	-55 to +150	°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°C.

2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

# Thermal Characteristics TA = 25°C unless otherwise noted

Symbol	Characteristic	Мах	Units
		FMMT449	
PD	Total Device Dissipation* Derate above 25°C	500 4	mW mW/°C
R <sub>0JA</sub> Thermal Resistance, Junction to Ambient250°C/W			
*Device mou	nted on FR-4 PCB 4.5" X 5"; mounting pad 0.02 in <sup>2</sup> of 2oz copper.		

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# **NPN Low Saturation Transistor**

(continued)

### **Electrical Characteristics**

Electrical Characteristics T <sub>A = 25°C unless otherwise noted</sub>						
Symbol	Parameter		Test Conditions	Min	Max	Units

#### OFF CHARACTERISTICS

BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 10 mA	30		V
BV <sub>CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> = 1mA	50		V
BV <sub>EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 100 μA	5		V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 40 V V <sub>CB</sub> = 40 V, Ta=100°C		100 10	nA uA
I <sub>EBO</sub>	Emitter Cutoff Current	$V_{EB} = 4V$		100	nA

#### **ON CHARACTERISTICS\***

h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 50 mA, V <sub>CE</sub> = 2V	70		-
		$I_{C} = 500 \text{ mA}, V_{CE} = 2V$	100	300	
		$I_C = 1A$ , $V_{CE} = 2V$ $I_C = 2A$ , $V_{CE} = 2V$	80		
		$I_C = 2A, V_{CE} = 2V$	40		
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 1 A, I <sub>B</sub> = 100 mA		500	mV
		$I_{C} = 1 \text{ A}, I_{B} = 100 \text{ mA}$ $I_{C} = 2 \text{ A}, I_{B} = 200 \text{ mA}$		1.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 1 A, I <sub>B</sub> = 100 mA		1.25	V
V <sub>BE(on)</sub>	Base-Emitter On Voltage	$I_{C} = 1 \text{ A}, V_{CE} = 2 \text{ V}$		1	V

#### SMALL SIGNAL CHARACTERISTICS

C <sub>obo</sub>	Output Capacitance	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1MHz		15	pF
fT	Transition Frequency	$I_{C} = 50 \text{mA}, V_{CE} = 10 \text{ V}, \text{ f}=100 \text{MHz}$	150		MHz

\*Pulse Test: Pulse Width  $\leq 300~\mu s,$  Duty Cycle  $\leq 2.0\%$ 

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