

SOT23 NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

FMMT449

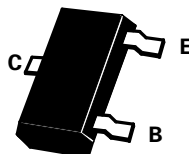
ISSUE 3 - NOVEMBER 1995

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 $T_{amb} = 25^\circ C$	P_{tot}	500	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^\circ C$

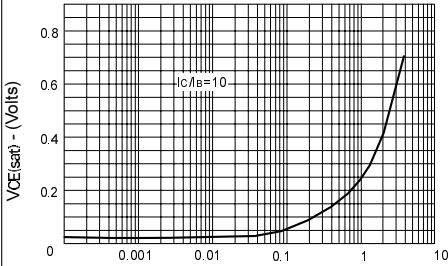
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ C$ unless otherwise stated).

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

*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$

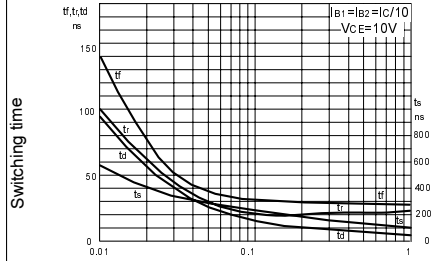
Spice parameter data is available upon request for this device

TYPICAL CHARACTERISTICS



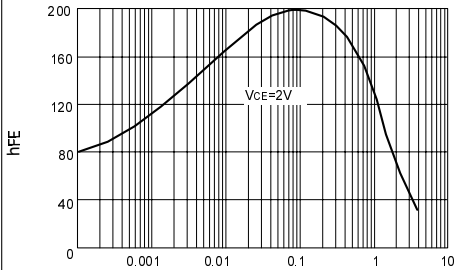
I_C - Collector Current (Amps)

$V_{CE(sat)}$ v I_C



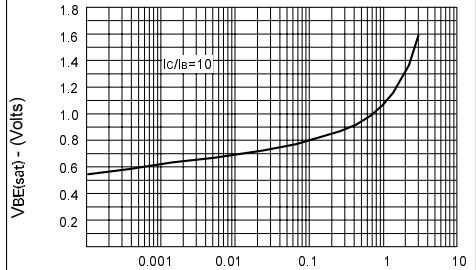
I_C - Collector Current (Amps)

Switching Speeds



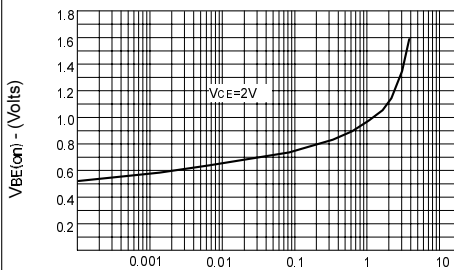
I_C - Collector Current (Amps)

h_{FE} v I_C



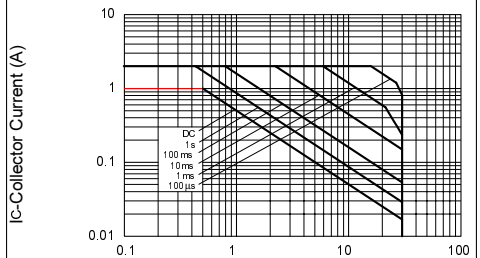
I_C - Collector Current (Amps)

$V_{BE(sat)}$ v I_C



I_C - Collector Current (Amps)

$V_{BE(on)}$ v I_C



V_{CE} - Collector Emitter Voltage (V)

Safe Operating Area