SOT23 NPN SILICON PLANAR HIGH FREQUENCY TRANSISTOR

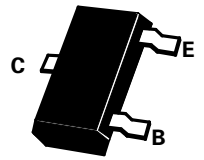
FMMT5179

ISSUE 3 - JANUARY 1996

FEATURES

* High f_T=900MHz Min
* Max capacitance=1pF
* Low noise 4.5dB

PARTMARKING DETAIL - 179



SOT23

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	2.5	V
Continuous Collector Current	I_C	50	mA
Power Dissipation	P_{tot}	330	mW
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	12		V	I_C= 3mA, I_B=0
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	20		V	I_C= 1μA, I_E=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	2.5		V	I_E=10μA, I_C=0
Collector Cut-Off Current	I_{CBO}		0.02 1.0	μA μA	V_{CB}=15V, I_E=0 V_{CB}=15V, I_E=0, T_{amb}=150°C
Static Forward Current Transfer Ratio	h_{FE}	25	250		I_C=3mA, V_{CE}=1V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.4	V	I_C=10mA, I_B=1mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.0	V	I_C=10mA, I_B=1mA
Transition Frequency	f_T	900	2000	MHz	I_C=5mA, V_{CE}=6V, f=100MHz
Collector-Base Capacitance	C_{cb}		1	pF	I_E=0, V_{CB}=10V, f=1MHz
Small Signal Current Gain	h_{fe}	25	300		I_C=2mA, V_{CE}=6V, f=1KHz
Collector Base Time Constant	$rb'C_c$	3	14	ps	I_E=2mA, V_{CB}=6V, f=31.9MHz
Noise Figure	N_F		4.5	dB	I_C=1.5mA, V_{CE}=6V R_S=50Ω, f=200MHz
Common-Emitter Amplifier Power Gain	Gpe	15		dB	I_C=5mA, V_{CE}=6V f=200MHz

Spice parameter data is available upon request for this device

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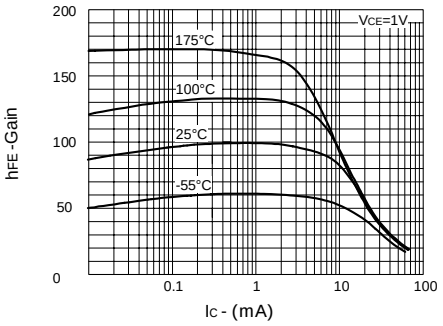
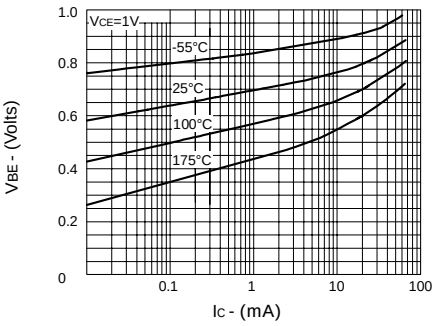
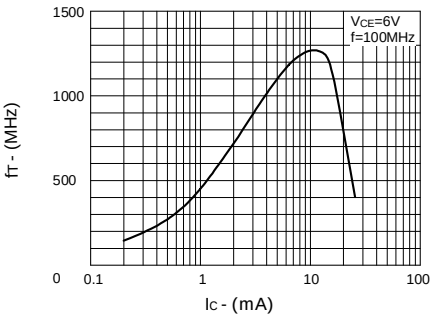
TYPICAL CHARACTERISTICS



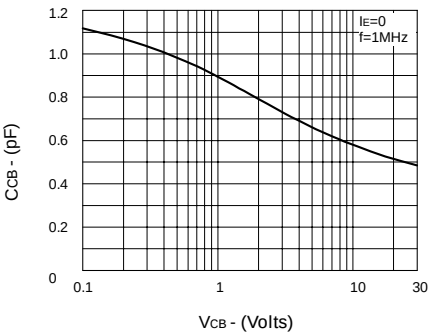
hFE v IC



VBE(on) v IC



fT v IC



CCB v VCB