NPN SILICON PLANAR HIGH FREQUENCY TRANSISTOR

MPS5179

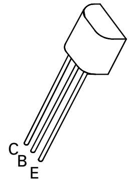
ISSUE 2 – FEB 1994

FEATURES

* HIGH f_T=900MHz MIN
* MAX CAPACITANCE=1pF
* LOW NOISE 5dB

APPLICATIONS

* CORDLESS TELEPHONES
* KEYLESS ENTRY SYSTEMS
* WIDEBAND INSTRUMENTATION AMPLIFIERS
* TELEMETRY
* WIRELESS LANS
* REMOTE METERING
* TAGGING



E-Line
TO92 Compatible

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}	500	mW
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +200	°C

Note: Spice model available

ZETEX

MPS5179

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	20			V	I_C= 1μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	12			V	I_C= 3mA, I_B=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
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
Static Forward Current Transfer Ratio	h_{FE}	25		250		I_C=3mA, V_{CE}=1V
Transition Frequency	f_T	900		2000	MHz	I_C=5mA, V_{CE}=6V, f=100MHz
Collector-Base Capacitance	C_{cb}			1.0	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	$rb'C_c$	3.0		14	ps	I_E=2mA, V_{CE}=6V, f=31.9MHz
Noise Figure	NF			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

MPS5179

TYPICAL CHARACTERISTICS

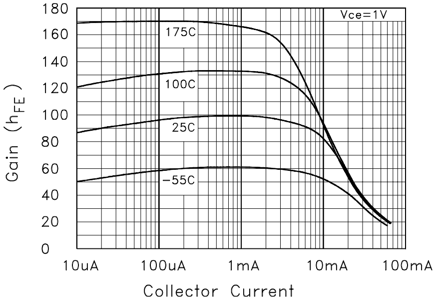


Fig.1 h_{FE} vs I_C

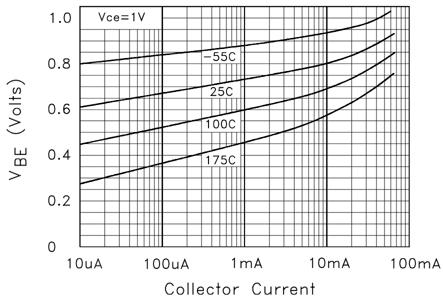


Fig.2 $V_{BE(ON)}$ vs I_C

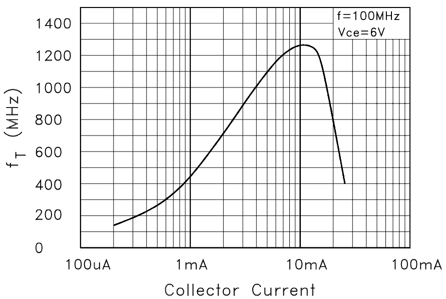


Fig.3 f_T vs I_C

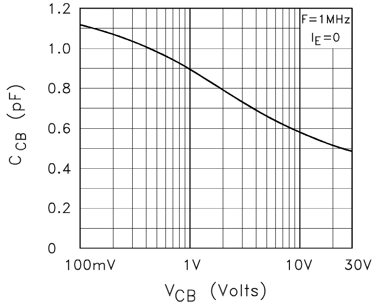


Fig.4 C_{CB} vs V_{CB}

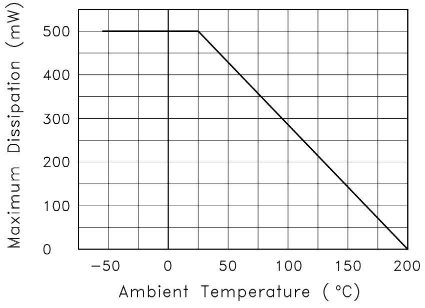


Fig.5 Derating Curve