NPN SILICON PLANAR HIGH VOLTAGE TRANSISTOR

MPSA42

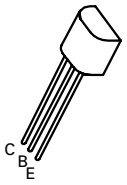
ISSUE 2 – MARCH 94

FEATURES

* High voltage

APPLICATIONS

* Telephone dialler circuit



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	300	V
Collector-Emitter Voltage	V_{CEO}	300	V
Emitter-Base Voltage	V_{EBO}	6	V
Continuous Collector Current	I_C	500	mA
Power Dissipation at T_{amb}=25°C	P_{tot}	680	mW
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +175	°C

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	300			V	I_C=100μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	300			V	I_C=1mA, I_B=0*
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6			V	I_E=100μA, I_C=0
Collector Cut-Off Current	I_{CBO}			0.1	μA	V_{CB}=200V, I_E=0
Emitter Cut-Off Current	I_{EBO}			0.1	μA	V_{EB}=6V, I_C=0
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.5	V	I_C=20mA, I_B=2mA*
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			0.9	V	I_C=20mA, I_B=2mA*
Static Forward Current Transfer Ratio	h_{FE}	25 40 40				I_C=1mA, V_{CE}=10V* I_C=10mA, V_{CE}=10V* I_C=30mA, V_{CE}=10V*
Transition Frequency	f_T	50			MHz	I_C=10mA, V_{CE}=20V f=20MHz
Output Capacitance	C_{obo}			6	pF	V_{CB}=20V, f=1MHz

*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤2%

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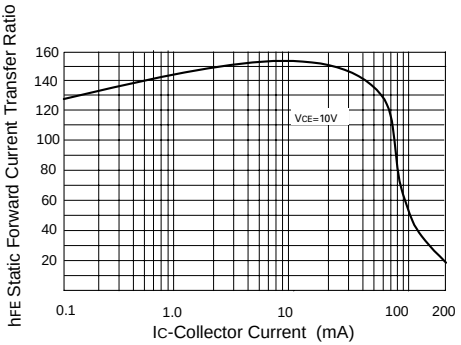
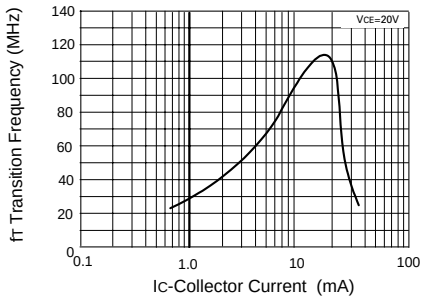
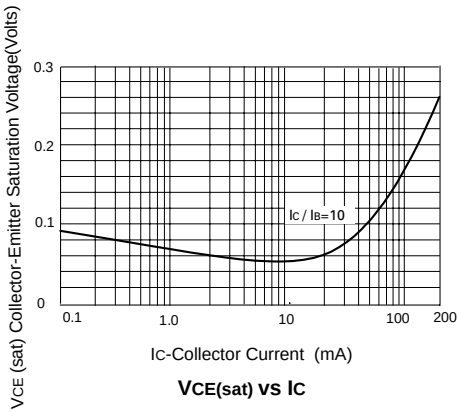
TYPICAL CHARACTERISTICS



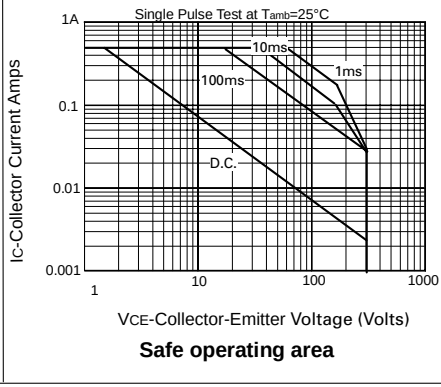
hFE vs IC



fT vs IC



VCE(sat) vs IC



Safe operating area