

NPN SILICON PLANAR HIGH VOLTAGE TRANSISTOR

MPSA42

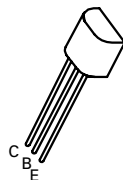
ISSUE 2 – MARCH 94

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 $T_{amb}=25^{\circ}C$	P_{tot}	680	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +175	$^{\circ}C$

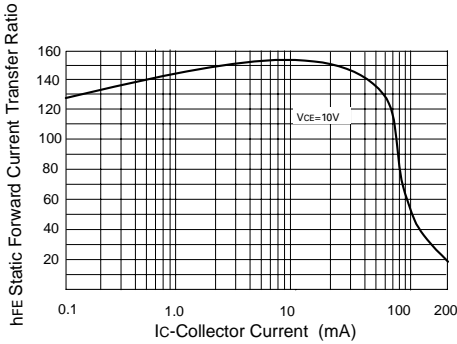
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	300			V	$I_C=100\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	300			V	$I_C=1mA, I_B=0^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6			V	$I_E=100\mu A, I_C=0$
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	$V_{CB}=20V, f=1MHz$

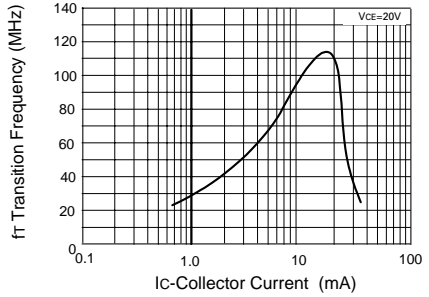
*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$

MPSA42

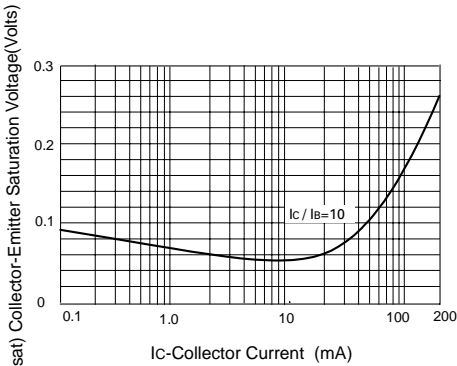
TYPICAL CHARACTERISTICS



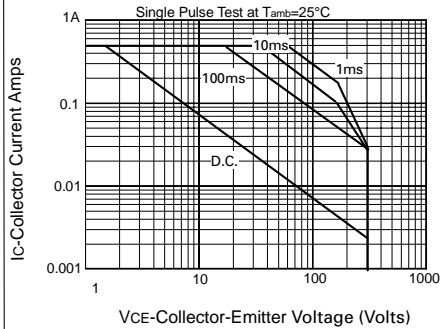
hFE vs IC



ft vs IC



$V_{CE(sat)}$ vs IC



Safe operating area