

SOT223 PNP SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ISSUE 3 - OCTOBER 1995

FEATURES

- * Low equivalent on-resistance; $R_{CE(sat)}$ **93mΩ at 3A**
- * Gain of 300 at $I_C=2$ Amps and Very low saturation voltage

APPLICATIONS

- * Battery powered circuits

COMPLEMENTARY TYPE – FZT688B

PARTMARKING DETAIL – FZT788B

ABSOLUTE MAXIMUM RATINGS.

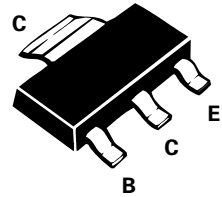
PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-15	V
Collector-Emitter Voltage	V_{CEO}	-15	V
Emitter-Base Voltage	V_{EBO}	-5	V
Peak Pulse Current	I_{CM}	-8	A
Continuous Collector Current	I_C	-3	A
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	2	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

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

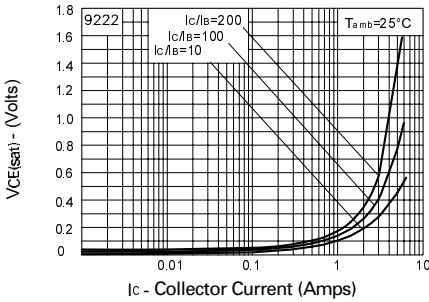
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-15			V	$I_C=-100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-15			V	$I_C=-10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5			V	$I_E=-100\mu A$
Collector Cut-Off Current	I_{CBO}			-0.1	μA	$V_{CB}=-10V$
Emitter Cut-Off Current	I_{EBO}			-0.1	μA	$V_{EB}=-4V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-0.15	V	$I_C=0.5A, I_B=2.5mA^*$
				-0.25	V	$I_C=1A, I_B=5mA^*$
				-0.45	V	$I_C=2A, I_B=10mA^*$
				-0.5	V	$I_C=3A, I_B=50mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			-0.9	V	$I_C=1A, I_B=5mA^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		-0.75		V	$I_C=1A, V_{CE}=2V^*$
Static Forward Current Transfer Ratio	h_{FE}	500		1500		$I_C=10mA, V_{CE}=2V^*$
		400				$I_C=1A, V_{CE}=2V^*$
		300				$I_C=2A, V_{CE}=2V^*$
		150				$I_C=6A, V_{CE}=2V^*$
Transition Frequency	f_T	100			MHz	$I_C=50mA, V_{CE}=5V$ $f=50MHz$
Input Capacitance	C_{ibo}		225		pF	$V_{EB}=-0.5V, f=1MHz$
Output Capacitance	C_{obo}		25		pF	$V_{CB}=-10V, f=1MHz$
Switching Times	t_{on}		35		ns	$I_C=500mA, I_{B1}=50mA$
	t_{off}		400		ns	$I_{B2}=50mA, V_{CC}=-10V$

*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$
Spice parameter data is available upon request for this device

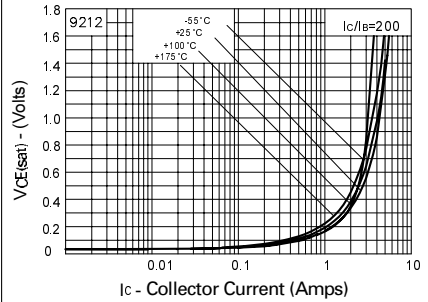
FZT788B



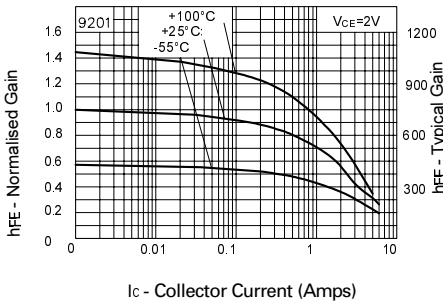
TYPICAL CHARACTERISTICS



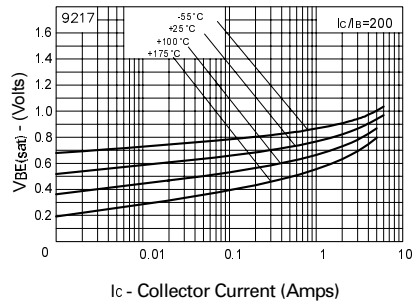
$V_{CE(sat)}$ v I_C



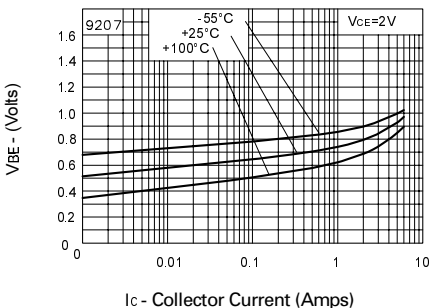
$V_{CE(sat)}$ v I_C



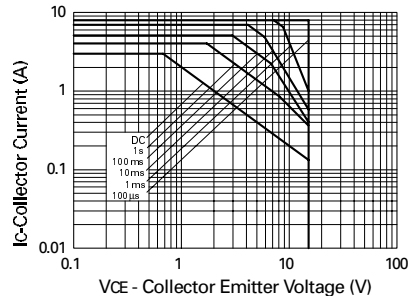
h_{FE} v I_C



$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C



Safe Operating Area