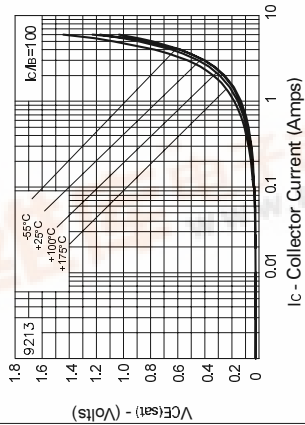
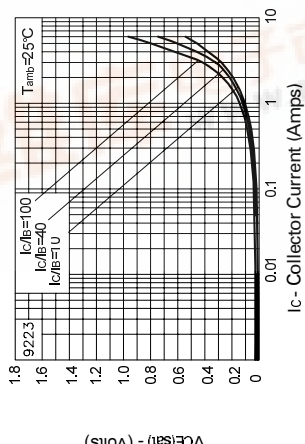




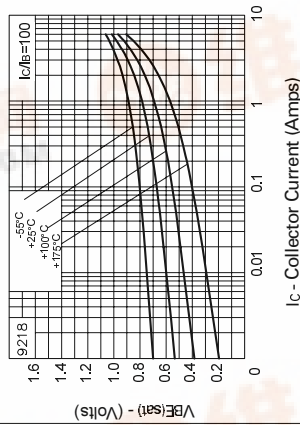
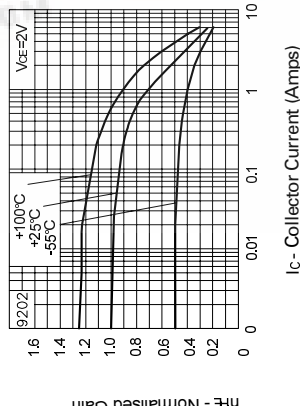
FZT789A

TYPICAL CHARACTERISTICS



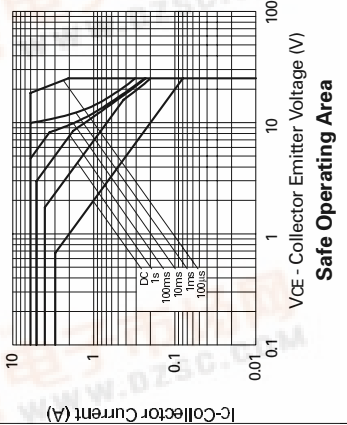
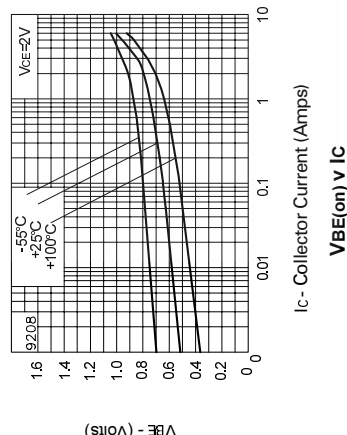
VCE(sat) v IC

VCE(sat) v IC



hFE v IC

VBE(sat) v IC



IC - Collector Current (Amps)

VCE - Collector Emitter Voltage (V)

Safe Operating Area

SOT223 PNP SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ISSUE 3 - OCTOBER 1995

FEATURES

- * Extremely low equivalent on-resistance; $R_{CE(sat)}$ 93mΩ at 3A
 - * Gain of 200 at $I_C=2$ Amps and very low saturation voltage
- ## APPLICATIONS
- * Battery powered circuits, fast charge converters

COMPLEMENTARY TYPE - FZT689B
 PARTMARKING DETAIL - FZT789A
ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-25	V
Collector-Emitter Voltage	V_{CEO}	-25	V
Emitter-Base Voltage	V_{EBO}	-5	V
Peak Pulse Current	I_{CM}	-6	A
Continuous Collector Current	I_C	-3	A
Power Dissipation at $T_{amb}=25^\circ\text{C}$	P_{tot}	2	W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 to +150	$^\circ\text{C}$

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

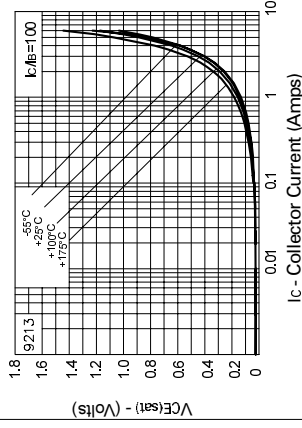
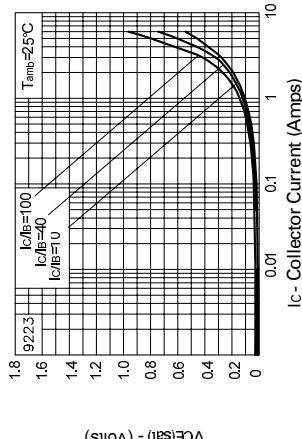
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Breakdown Voltages	$V_{(BR)CBO}$	-25	-40		V	$I_C = -100\mu\text{A}$
	$V_{(BR)CEO}$	-25	-35		V	$I_C = -10\text{mA}^*$
	$V_{(BR)EBO}$	-5	-8.5		V	$I_E = -100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}		-0.1 10		μA μA	$V_{CE} = -15\text{V}$ $V_{CB} = -15\text{V}, T_{amb} = 100^\circ\text{C}$
Emitter Cut-Off Current	I_{EBO}		-0.1		μA	$V_{EB} = -4\text{V}$
Saturation Voltages	$V_{CE(sat)}$		-0.15 -0.30 -0.30	-0.25 -0.45 -0.50	V	$I_C = -1\text{A}, I_B = -10\text{mA}^*$ $I_C = -2\text{A}, I_B = -20\text{mA}^*$ $I_C = -3\text{A}, I_B = -100\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(sat)}$		-0.8	-1.0	V	$I_C = -1\text{A}, I_B = -10\text{mA}^*$
	$V_{BE(on)}$		-0.8		V	$I_C = -1\text{A}, V_{CE} = -2\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	300 250 200 100		800		$I_C = -10\text{mA}, V_{CE} = -2\text{V}$ $I_C = -1\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -2\text{A}, V_{CE} = -2\text{V}^*$ $I_C = -6\text{A}, V_{CE} = -2\text{V}^*$
Transition Frequency	f_T	100			MHz	$I_C = -50\text{mA}, V_{CE} = -5\text{V}, f = 50\text{MHz}$
Input Capacitance	C_{ibo}		225		pF	$V_{EB} = -0.5\text{V}, f = 1\text{MHz}$
Output Capacitance	C_{obo}		25		pF	$V_{CB} = -10\text{V}, f = 1\text{MHz}$
Switching Times	t_{on}		35		ns	$I_C = -500\text{mA}, I_B = -50\text{mA}$
	t_{off}		400		ns	$I_B = -50\text{mA}, V_{CC} = -10\text{V}$

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

Spice parameter data is available upon request for this device

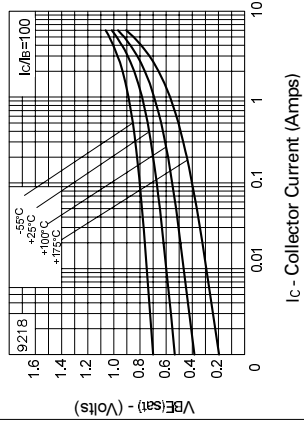
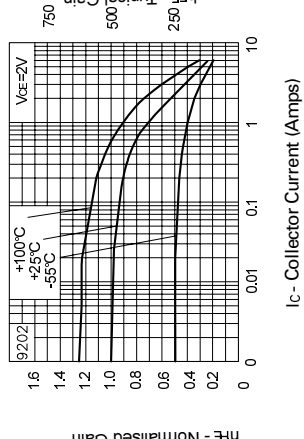
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TYPICAL CHARACTERISTICS



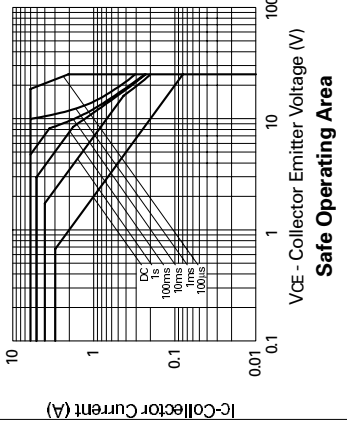
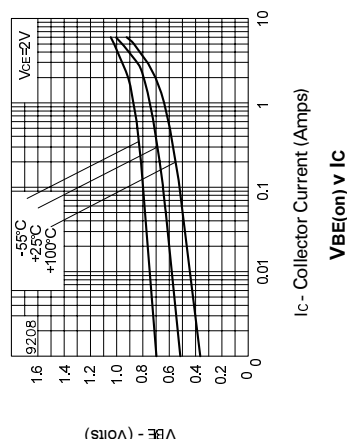
VCE(sat) v IC

VCE(sat) v IC



hFE v IC

VBE(sat) v IC



IC-Collector Current (Amps) VBE(on) v IC

VCE - Collector Emitter Voltage (V) Safe Operating Area

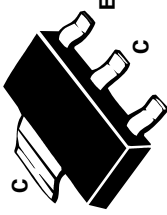
FZT789A

SOT223 PNP SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ISSUE 3 - OCTOBER 1995

FEATURES

- * Extremely low equivalent on-resistance; $R_{CE(sat)}$ 93mΩ at 3A
 - * Gain of 200 at $I_C=2$ Amps and very low saturation voltage
- APPLICATIONS**
- * Battery powered circuits, fast charge converters



COMPLEMENTARY TYPE - FZT689B
PARTMARKING DETAIL - FZT789A

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-25	V
Collector-Emitter Voltage	V_{CEO}	-25	V
Emitter-Base Voltage	V_{EBO}	-5	V
Peak Pulse Current	I_{CM}	-6	A
Continuous Collector Current	I_C	-3	A
Power Dissipation at $T_{amb}=25^\circ\text{C}$	P_{Tot}	2	W
Operating and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Breakdown Voltages	$V_{(BR)CBO}$	-25	-40		V	$I_C=-100\mu\text{A}$
	$V_{(BR)CEO}$	-25	-35		V	$I_C=-10\text{mA}^*$
	$V_{(BR)EBO}$	-5	-8.5		V	$I_E=-100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}	-0.1	10		μA	$V_{CB}=-15\text{V}$
					μA	$V_{CB}=-15\text{V}, T_{amb}=100^\circ\text{C}$
Emitter Cut-Off Current	I_{EBO}	-0.1			μA	$V_{EB}=-4\text{V}$
Saturation Voltages	$V_{CE(sat)}$	-0.15	-0.25		V	$I_C=-1\text{A}, I_B=-10\text{mA}^*$
		-0.30	-0.45		V	$I_C=-2\text{A}, I_B=-20\text{mA}^*$
		-0.30	-0.50		V	$I_C=-3\text{A}, I_B=-100\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(sat)}$	-0.8	-1.0		V	$I_C=-1\text{A}, I_B=-10\text{mA}^*$
	$V_{BE(on)}$	-0.8			V	$I_C=-1\text{A}, V_{CE}=-2\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	300	800			$I_C=-10\text{mA}, V_{CE}=-2\text{V}$
		250				$I_C=-1\text{A}, V_{CE}=-2\text{V}^*$
		200				$I_C=-2\text{A}, V_{CE}=-2\text{V}^*$
		100				$I_C=-6\text{A}, V_{CE}=-2\text{V}^*$
Transition Frequency	f_T	100			MHz	$I_C=-50\text{mA}, V_{CE}=-5\text{V}, f=50\text{MHz}$
Input Capacitance	C_{ibo}		225		pF	$V_{EB}=-0.5\text{V}, f=1\text{MHz}$
Output Capacitance	C_{obo}		25		pF	$V_{CB}=-10\text{V}, f=1\text{MHz}$
Switching Times	t_{on}		35		ns	$I_C=-500\text{mA}, I_B=-50\text{mA}$
	t_{off}		400		ns	$I_B=-50\text{mA}, V_{CC}=-10\text{V}$

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