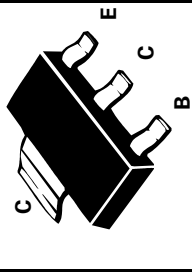
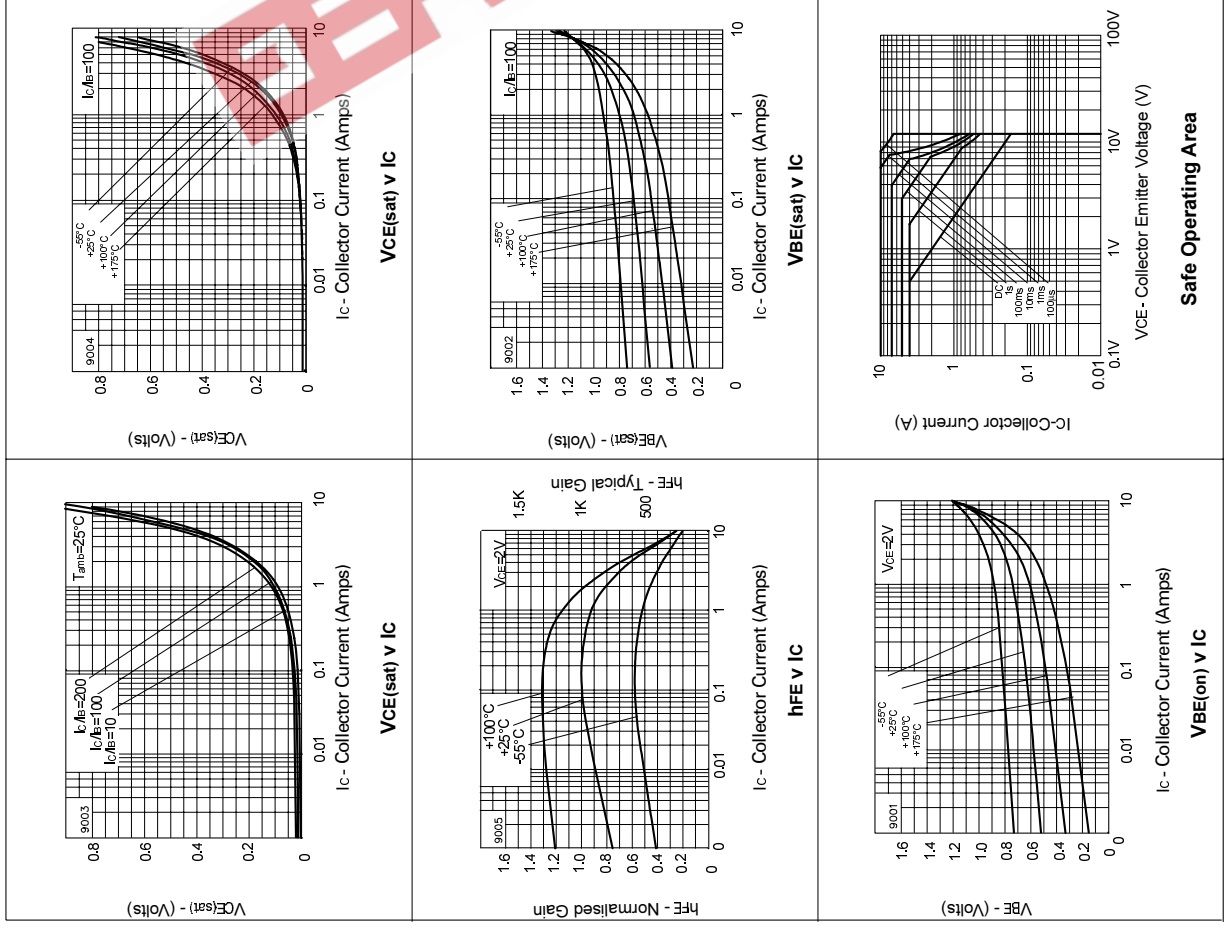


ISSUE 3 - OCTOBER 1995

FEATURES

- \* Extremely low equivalent on resistance;  $R_{CE(sat)}$  83m $\Omega$  at 3A
  - \* Gain of 400 at  $I_C=3$  Amps and very low saturation voltage
- APPLICATIONS
- \* Flash gun convertors & Battery powered circuits

TYPICAL CHARACTERISTICS



PARTMARKING DETAIL - FZT688B  
 COMPLEMENTARY TYPE - FZT788B  
**ABSOLUTE MAXIMUM RATINGS.**

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	12	V
Collector-Emitter Voltage	$V_{CEO}$	12	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Peak Pulse Current	$I_{CM}$	10	A
Continuous Collector Current	$I_C$	4	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	$V_{(BR)CBO}$	12			V	$I_C=100\mu\text{A}$
	$V_{(BR)CEO}$	12			V	$I_C=10\text{mA}^*$
	$V_{(BR)EBO}$	5			V	$I_E=100\mu\text{A}$
Collector Cut-Off Current	$I_{CBO}$		0.1		$\mu\text{A}$	$V_{CE}=10\text{V}$
Emitter Cut-Off Current	$I_{EBO}$		0.1		$\mu\text{A}$	$V_{EB}=4\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.04		V	$I_C=0.1\text{A}, I_B=1\text{mA}$
			0.06		V	$I_C=0.1\text{A}, I_B=0.5\text{mA}^*$
			0.18		V	$I_C=1\text{A}, I_B=50\text{mA}^*$
			0.35		V	$I_C=3\text{A}, I_B=20\text{mA}^*$
			0.40		V	$I_C=4\text{A}, I_B=50\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.1		V	$I_C=3\text{A}, I_B=20\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		1.0		V	$I_C=3\text{A}, V_{CE}=2\text{V}$
Static Forward Current Transfer Ratio	$h_{FE}$	500				$I_C=0.1\text{A}, V_{CE}=2\text{V}^*$
		400				$I_C=3\text{A}, V_{CE}=2\text{V}^*$
		100				$I_C=10\text{A}, V_{CE}=2\text{V}^*$
Transition Frequency	$f_T$	150			MHz	$I_C=50\text{mA}, V_{CE}=5\text{V}$ $f=50\text{MHz}$
Input Capacitance	$C_{ibo}$		200		pF	$V_{EB}=0.5\text{V}, f=1\text{MHz}$
Output Capacitance	$C_{obo}$		40		pF	$V_{CB}=10\text{V}, f=1\text{MHz}$
Switching Times	$t_{on}$		40		ns	$I_C=500\text{mA}, I_B=50\text{A}$
	$t_{off}$		500		ns	$I_B=50\text{mA}, V_{CC}=10\text{V}$

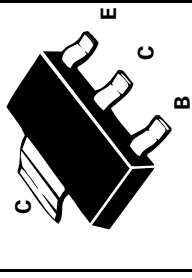
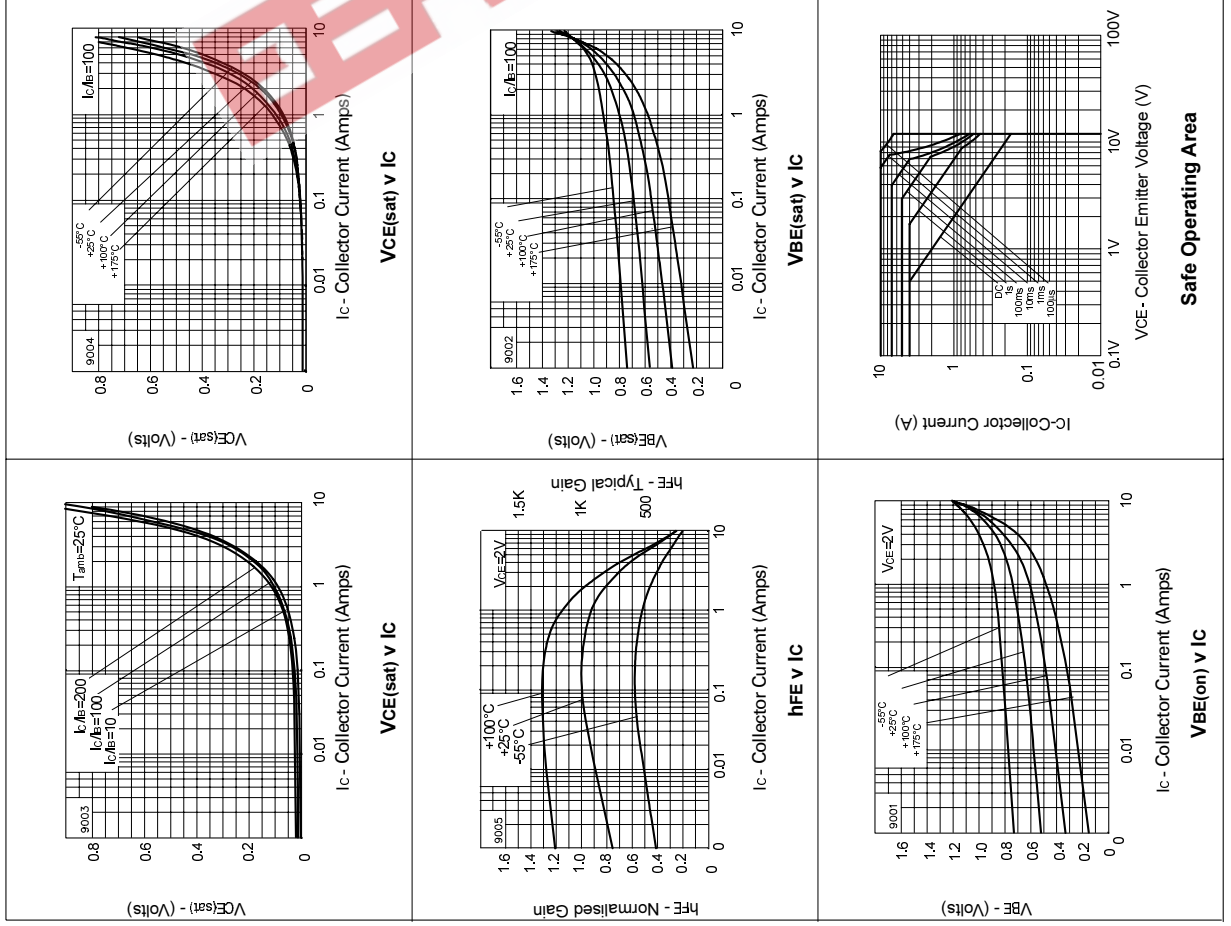
\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$   
 Spice parameter data is available upon request for this device

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FEATURES

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TYPICAL CHARACTERISTICS



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 COMPLEMENTARY TYPE - FZT788B  
**ABSOLUTE MAXIMUM RATINGS.**

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Collector-Emitter Voltage	$V_{CEO}$	12	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Peak Pulse Current	$I_{CM}$	10	A
Continuous Collector Current	$I_C$	4	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	$^\circ\text{C}$

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	$V_{(BR)CEO}$	12			V	$I_C=10\text{mA}^*$
	$V_{(BR)EBO}$	5			V	$I_E=100\mu\text{A}$
Collector Cut-Off Current	$I_{CBO}$		0.1		$\mu\text{A}$	$V_{CE}=10\text{V}$
Emitter Cut-Off Current	$I_{EBO}$		0.1		$\mu\text{A}$	$V_{EB}=4\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.04		V	$I_C=0.1\text{A}, I_B=1\text{mA}$
			0.06		V	$I_C=0.1\text{A}, I_B=0.5\text{mA}^*$
			0.18		V	$I_C=1\text{A}, I_B=50\text{mA}^*$
			0.35		V	$I_C=3\text{A}, I_B=20\text{mA}^*$
			0.40		V	$I_C=4\text{A}, I_B=50\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.1		V	$I_C=3\text{A}, I_B=20\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		1.0		V	$I_C=3\text{A}, V_{CE}=2\text{V}$
Static Forward Current Transfer Ratio	$h_{FE}$	500				$I_C=0.1\text{A}, V_{CE}=2\text{V}^*$
		400				$I_C=3\text{A}, V_{CE}=2\text{V}^*$
		100				$I_C=10\text{A}, V_{CE}=2\text{V}^*$
Transition Frequency	$f_T$	150			MHz	$I_C=50\text{mA}, V_{CE}=5\text{V}$ $f=50\text{MHz}$
Input Capacitance	$C_{ibo}$		200		pF	$V_{EB}=0.5\text{V}, f=1\text{MHz}$
Output Capacitance	$C_{obo}$		40		pF	$V_{CB}=10\text{V}, f=1\text{MHz}$
Switching Times	$t_{on}$		40		ns	$I_C=500\text{mA}, I_B=50\text{A}$
	$t_{off}$		500		ns	$I_B=50\text{mA}, V_{CC}=10\text{V}$

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