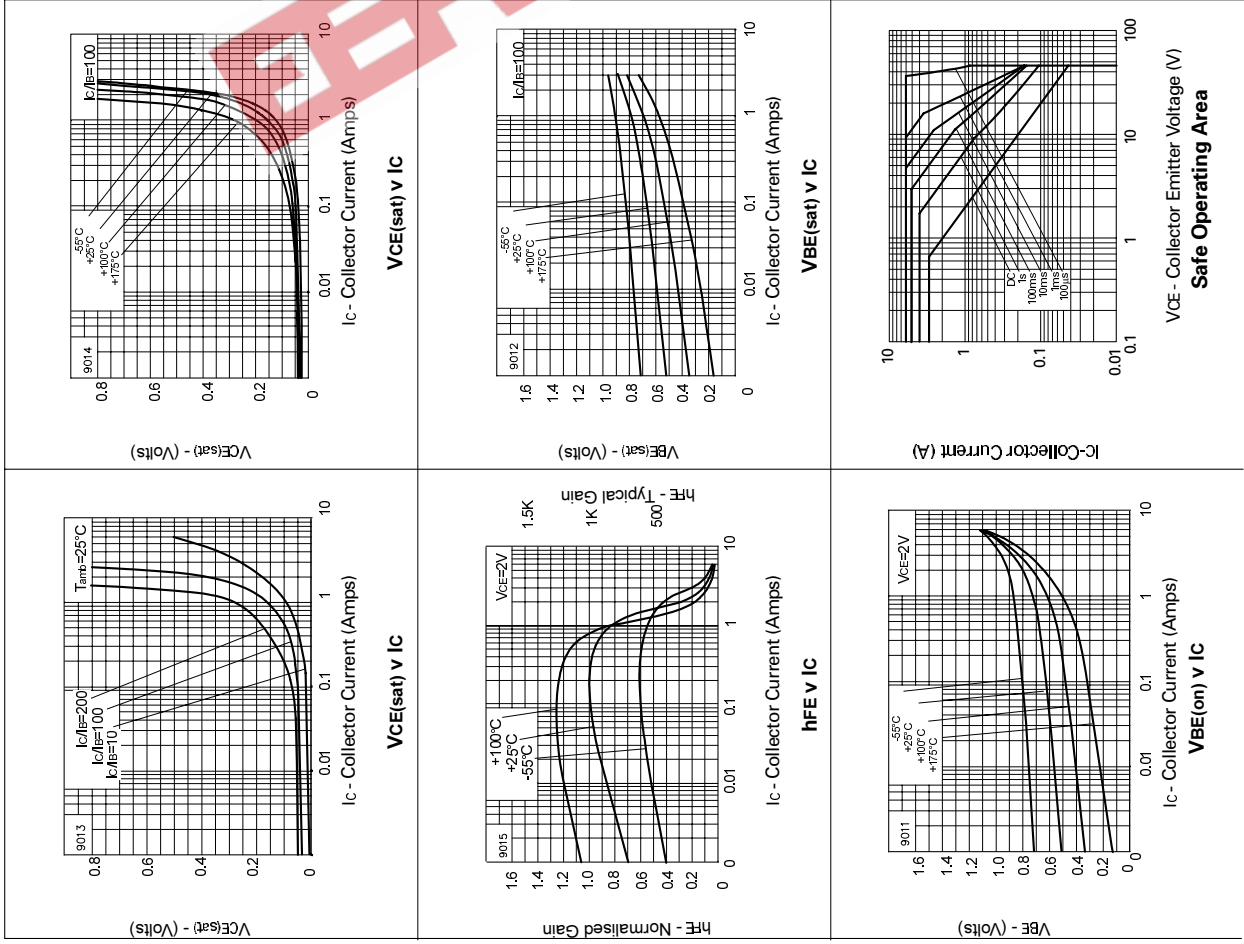


FZT690B

NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ISSUE 3 - OCTOBER 1995

TYPICAL CHARACTERISTICS



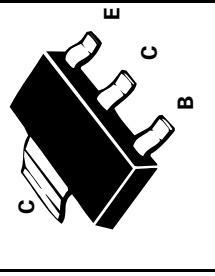
FEATURES

- * Very low equivalent on-resistance; $R_{CE(sat)}$ 125m Ω at 2A
- * Gain of 400 at $I_C=1$ Amp
- * Very low saturation voltage

APPLICATIONS

- * Darlington replacement
- * Siren Drivers, DC-DC converters

PARTMARKING DETAIL - FZT690B



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CEO}	45	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 $T_{amb}=25^\circ C$	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	$V_{(BR)CBO}$	45			V	$I_C=100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45			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	$V_{CB}=35V$
Emitter Cut-Off Current	I_{EBO}		0.1		μA	$V_{EB}=4V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.1		V	$I_C=0.1A, I_B=0.5mA^*$
			0.5		V	$I_C=1A, I_B=5mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.9		V	$I_C=1A, I_B=10mA^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		0.9		V	$I_C=1A, V_{CE}=2V^*$
Static Forward Current Transfer Ratio	h_{FE}	500				$I_C=100mA, V_{CE}=2V^*$
		400				$I_C=1A, V_{CE}=2V^*$
		150				$I_C=2A, V_{CE}=2V^*$
		50				$I_C=3A, V_{CE}=2V^*$
Transition Frequency	f_T	150			MHz	$I_C=50mA, V_{CE}=5V, f_i=50MHz$
Input Capacitance	C_{ibo}		200		pF	$V_{EB}=0.5V, f=1MHz$
Output Capacitance	C_{obo}		16		pF	$V_{CB}=10V, f=1MHz$
Switching Times	t_{on}	33			ns	$I_C=500mA, I_B=50mA$
		1300			ns	$I_B=50mA, V_{CC}=10V$

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

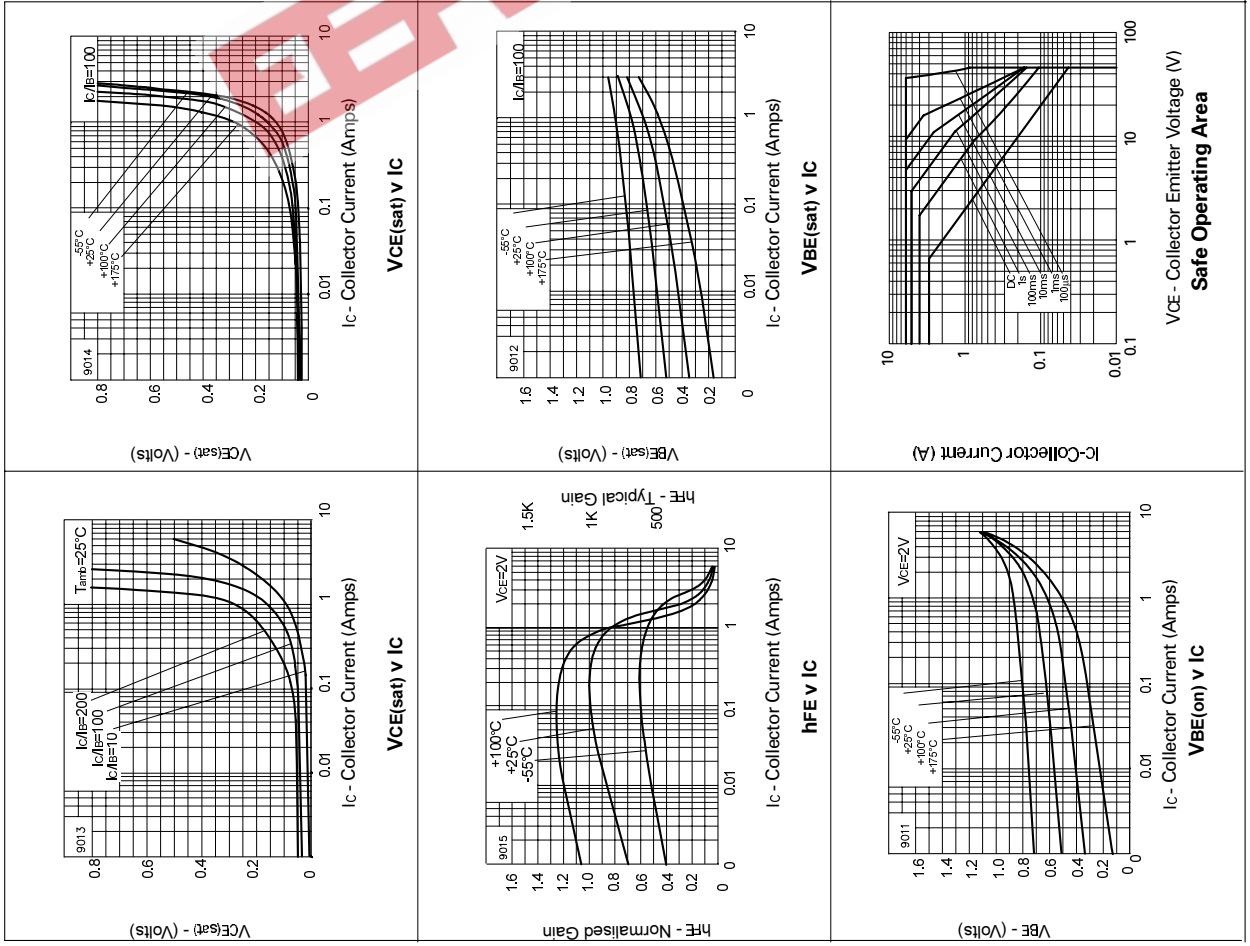
FZT690B

NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ISSUE 3 - OCTOBER 1995

FZT690B

TYPICAL CHARACTERISTICS



FEATURES

- * Very low equivalent on-resistance; $R_{CE(sat)}$ 125mΩ at 2A
- * Gain of 400 at $I_C=1$ Amp
- * Very low saturation voltage

APPLICATIONS

- * Darlington replacement
- * Siren Drivers, DC-DC converters

PARTMARKING DETAIL - FZT690B

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CEO}	45	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.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	45			V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45			V	$I_C=10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}		0.1		μA	$V_{CB}=35\text{V}$
Emitter Cut-Off Current	I_{EBO}		0.1		μA	$V_{EB}=4\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.1		V	$I_C=0.1\text{A}, I_B=0.5\text{mA}^*$
			0.5		V	$I_C=1\text{A}, I_B=5\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.9		V	$I_C=1\text{A}, I_B=10\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		0.9		V	$I_C=1\text{A}, V_{CE}=2\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	500				$I_C=100\text{mA}, V_{CE}=2\text{V}^*$
		400				$I_C=1\text{A}, V_{CE}=2\text{V}^*$
		150				$I_C=2\text{A}, V_{CE}=2\text{V}^*$
		50				$I_C=3\text{A}, V_{CE}=2\text{V}^*$
Transition Frequency	f_T	150			MHz	$I_C=50\text{mA}, V_{CE}=5\text{V}, f_i=50\text{MHz}$
Input Capacitance	C_{ibo}		200		pF	$V_{EB}=0.5\text{V}, f=1\text{MHz}$
Output Capacitance	C_{obo}		16		pF	$V_{CB}=10\text{V}, f=1\text{MHz}$
Switching Times	t_{on}		33		ns	$I_C=500\text{mA}, I_B=50\text{mA}$
	t_{off}		1300		ns	$I_{B2}=50\text{mA}, V_{CC}=10\text{V}$

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