

# NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

UCD: 07/1998/03/01/001

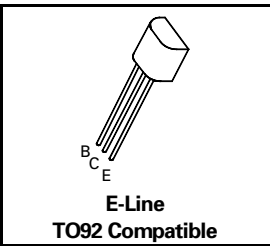
## FXT653

**ISSUE 1 – MARCH 94**

**FEATURES**

- \* 100 Volt  $V_{CE0}$
- \* 2 Amps continuous current
- \* Low saturation voltage
- \*  $P_{tot} = 1$  Watt

REFER TO ZTX653 FOR GRAPHS



**ABSOLUTE MAXIMUM RATINGS.**

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	120	V
Collector-Emitter Voltage	$V_{CEO}$	100	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Peak Pulse Current	$I_{CM}$	6	A
Continuous Collector Current	$I_C$	2	A
Power Dissipation at $T_{amb}=25^{\circ}C$	$P_{tot}$	1	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200	$^{\circ}C$

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	120			V	$I_C=100\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	100			V	$I_C=10mA, I_B=0^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=100\mu A, I_C=0$
Collector Cut-Off Current	$I_{CBO}$			0.1 10	$\mu A$ $\mu A$	$V_{CB}=100V, I_E=0$ $V_{CB}=100V, T_{amb}=100^{\circ}C$
Emitter Cut-Off Current	$I_{EBO}$			0.1	$\mu A$	$V_{EB}=4V, I_C=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.13 0.23	0.3 0.5	V V	$I_C=1A, I_B=100mA^*$ $I_C=2A, I_B=200mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.9	1.25	V	$I_C=1A, I_B=100mA^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		0.8	1	V	$I_C=1A, V_{CE}=2V^*$
Static Forward Current Transfer Ratio	$h_{FE}$	70 100 55 25	200 200 110 55	300		$I_C=50mA, V_{CE}=2V^*$ $I_C=500mA, V_{CE}=2V^*$ $I_C=1A, V_{CE}=2V^*$ $I_C=2A, V_{CE}=2V^*$
Transition Frequency	$f_T$	140	175		MHz	$I_C=100mA, V_{CE}=5V$ $f=100MHz$
Output Capacitance	$C_{obo}$			30	pF	$V_{CB}=10V, f=1MHz$

\*Measured under pulsed conditions. Pulse Width=300 $\mu s$ . Duty cycle  $\leq 2\%$