

NPN SILICON PLANAR MEDIUM POWER TRANSISTOR

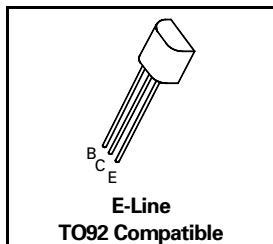
FXT651

ISSUE 1 – MARCH 94

FEATURES

- * 60 Volt V_{CEO}
- * 2 Amps continuous current
- * Low saturation voltage
- * $P_{tot} = 1$ Watt

REFER TO ZTX651 FOR GRAPHS



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	60	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 $T_{amb} = 25^\circ\text{C}$	P_{tot}	1	W
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200	$^\circ\text{C}$

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80			V	$I_C = 100\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	60			V	$I_C = 10\text{mA}, I_B = 0^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E = 100\mu\text{A}, I_C = 0$
Collector Cut-Off Current	I_{CBO}			0.1 10	μA	$V_{CB} = 60\text{V}, I_E = 0$ $V_{CB} = 60\text{V}, T_{amb} = 100^\circ\text{C}$
Emitter Cut-Off Current	I_{EBO}			0.1	μA	$V_{EB} = 4\text{V}, I_C = 0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.12 0.23	0.3 0.5	V	$I_C = 1\text{A}, I_B = 100\text{mA}^*$ $I_C = 2\text{A}, I_B = 200\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.9	1.25	V	$I_C = 1\text{A}, I_B = 100\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		0.8	1	V	$I_C = 1\text{A}, V_{CE} = 2\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	70 100 80 40	200 200 170 80	300		$I_C = 50\text{mA}, V_{CE} = 2\text{V}^*$ $I_C = 500\text{mA}, V_{CE} = 2\text{V}^*$ $I_C = 1\text{A}, V_{CE} = 2\text{V}^*$ $I_C = 2\text{A}, V_{CE} = 2\text{V}^*$
Transition Frequency	f_T	140	175		MHz	$I_C = 100\text{mA}, V_{CE} = 5\text{V}$ $f = 100\text{MHz}$
Output Capacitance	C_{obo}			30	pF	$V_{CB} = 10\text{V}, f = 1\text{MHz}$

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