

SOT223 NPN SILICON PLANAR MEDIUM POWER DARLINGTON TRANSISTOR

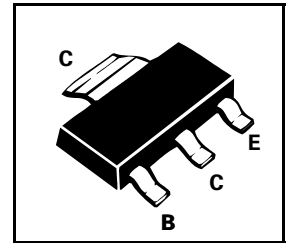
FZT600

ISSUE 3 – FEBRUARY 1997

FEATURES

- * 2A continuous current
- * 140 VOLT V_{CEO}
- * Guaranteed h_{FE} Specified up to 1A

PART MARKING DETAIL – FZT600



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	160	V
Collector-Emitter Voltage	V_{CEO}	140	V
Emitter-Base Voltage	V_{EBO}	10	V
Peak Pulse Current	I_{CM}	4	A
Continuous Collector Current	I_C	2	A
Power Dissipation	P_{tot}	2	W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 to +150	°C

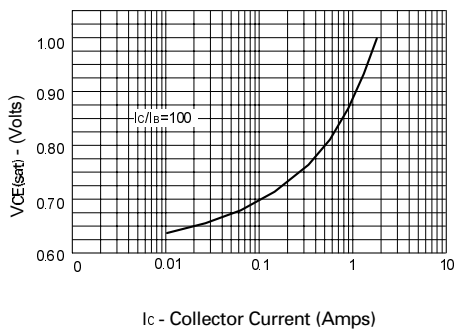
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	160			V	$I_C = 100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	140			V	$I_C = 10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	10			V	$I_E = 100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}			0.01 10	μA μA	$V_{CB} = 140\text{V}$ $V_{CB} = 140\text{V}, T_{amb} = 100^\circ\text{C}$
Collector Cut-Off Current	I_{CES}			10	μA	$V_{CES} = 140\text{V}$
Emitter Cut-Off Current	I_{EBO}			0.1	μA	$V_{EB} = 8\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.75 0.85	1.1 1.2	V V	$I_C = 0.5\text{A}, I_B = 5\text{mA}^*$ $I_C = 1\text{A}, I_B = 10\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.7	1.9	V	$I_C = 1\text{A}, I_B = 10\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		1.5	1.7	V	$I_C = 1\text{A}, V_{CE} = 5\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	1k 2k 1k		100k		$I_C = 50\text{mA}, V_{CE} = 10\text{V}^*$ $I_C = 0.5\text{A}, V_{CE} = 10\text{V}^*$ $I_C = 1\text{A}, V_{CE} = 10\text{V}^*$
GROUP B		5k 10k 5k	10k 20k 10k	100k		$I_C = 50\text{mA}, V_{CE} = 10\text{V}^*$ $I_C = 0.5\text{A}, V_{CE} = 10\text{V}^*$ $I_C = 1\text{A}, V_{CE} = 10\text{V}^*$
Transition Frequency	f_T	150	250		MHz	$I_C = 100\text{mA}, V_{CE} = 10\text{V}$ $f = 20\text{MHz}$
Output Capacitance	C_{obo}		10	15	MHz	$V_{CB} = 10\text{V}, f = 1\text{MHz}$
Switching Times	T_{on} T_{off}		0.75 2.20		μs μs	$I_C = 0.5\text{A}, V_{CE} = 10\text{V}$ $I_{B1} = I_{B2} = 0.5\text{mA}$

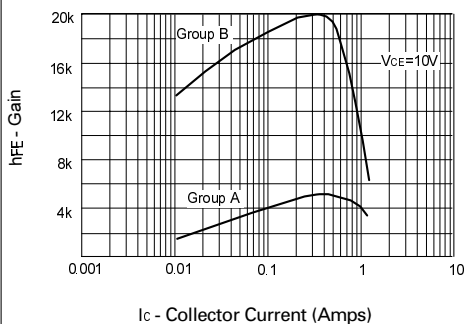
*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$
Spice parameter data is available upon request for this device

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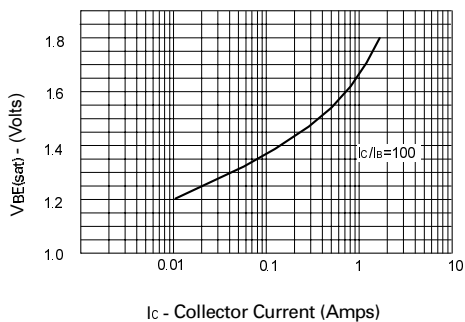
TYPICAL CHARACTERISTICS



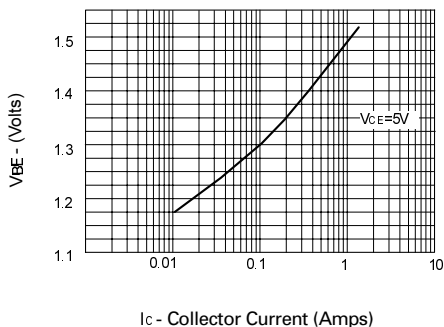
$V_{CE(sat)}$ v I_C



hFE v I_C



$V_{BE(sat)}$ v I_C



$V_{BE(on)}$ v I_C