

# SOT223 NPN SILICON PLANAR MEDIUM POWER DARLINGTON TRANSISTOR

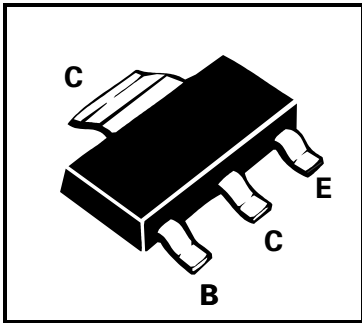
## FZT600

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### 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	$\mu\text{A}$ $\mu\text{A}$	$V_{CB} = 140\text{V}$ $V_{CB} = 140\text{V}, T_{amb} = 100^\circ\text{C}$
Collector Cut-Off Current	$I_{CES}$			10	$\mu\text{A}$	$V_{CES} = 140\text{V}$
Emitter Cut-Off Current	$I_{EBO}$			0.1	$\mu\text{A}$	$V_{EB} = 8\text{V}$
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	$I_C = 50\text{mA}, V_{CE} = 10\text{V}^*$ $I_C = 0.5\text{mA}, V_{CE} = 10\text{V}^*$ $I_C = 1\text{A}, V_{CE} = 10\text{V}^*$
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	$T_{on}$		0.75		$\mu\text{s}$	$I_C = 0.5\text{A}, V_{CE} = 10\text{V}$
	$T_{off}$		2.20		$\mu\text{s}$	$I_{B1} = I_{B2} = 0.5\text{mA}$

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

# FZT600

## TYPICAL CHARACTERISTICS

