

# SOT223 NPN SILICON PLANAR MEDIUM POWER DARLINGTON TRANSISTORS

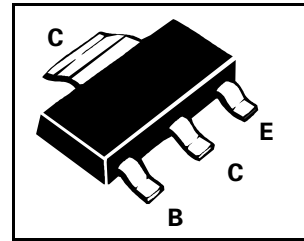
## FZT605

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### FEATURES

- \* Guaranteed  $h_{FE}$  Specified up to 2A
- \* Fast Switching

PARTMARKING DETAIL - FZT605  
COMPLEMENTARY TYPES - FZT705



### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	140	V
Collector-Emitter Voltage	$V_{CEO}$	120	V
Emitter-Base Voltage	$V_{EBO}$	10	V
Peak Pulse Current	$I_{CM}$	4	A
Continuous Collector Current	$I_C$	1.5	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.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	140		V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	120		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	$\mu\text{A}$ $\mu\text{A}$	$V_{CB}=120\text{V}$ $V_{CB}=120\text{V}, T_{amb}=100^\circ\text{C}$
Emitter Cut-Off Current	$I_{EBO}$		0.1	$\mu\text{A}$	$V_{EB}=8\text{V}$
Collector-Emitter Cut-Off Current	$I_{CES}$		10	$\mu\text{A}$	$V_{CES}=120\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		1.0, 1.5	V V	$I_C=250\text{mA}, I_B=0.25\text{mA}^*$ $I_C=1\text{A}, I_B=1\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		1.8	V	$I_C=1\text{A}, I_B=1\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		1.7	V	$I_C=1\text{A}, V_{CE}=5\text{V}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	2K 5K 2K 0.5K	100K		$I_C=50\text{mA}, V_{CE}=5\text{V}$ $I_C=500\text{mA}, V_{CE}=5\text{V}^*$ $I_C=1\text{A}, V_{CE}=5\text{V}^*$ $I_C=2\text{A}, V_{CE}=5\text{V}^*$
Transition Frequency	$f_t$	150		MHz	$I_C=100\text{mA}, V_{CE}=10\text{V}$ $f=20\text{MHz}$
Input Capacitance	$C_{ibo}$	90 Typical		pF	$V_{EB}=500\text{mV}, f=1\text{MHz}$
Output Capacitance	$C_{obo}$	15 Typical		pF	$V_{CB}=10\text{V}, F=1\text{MHz}$
Switching Times	$t_{on}$	0.5 Typical		nsec	$I_C=500\text{mA}, V_{CE}=10\text{V}$ $I_{B1}=I_{B2}=0.5\text{mA}$
	$t_{off}$	1.6 Typical		nsec	

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



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## TYPICAL CHARACTERISTICS

