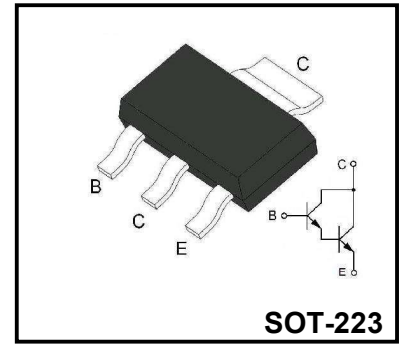


**NPN Plastic-Encapsulate Transistors**
**Silicon planar medium power darlington transistors**
**Features**

- ◆ Guaranteed  $h_{FE}$  Specified up to 2A
- ◆ Low saturation voltages
- ◆ Complement to FZT705

**Marking: FZT605TA**

**Absolute Maximum Rating ( $T_a=25^{\circ}\text{C}$  unless otherwise noted)**

Parameter	Symbol	Value	Unit
Collector-base voltage	$BV_{CBO}$	14.0	V
Collector-emitter voltage	$BV_{CEO}$	120	V
Emitter-base voltage	$BV_{EBO}$	10	V
Continuous collector current	$I_C$	1.5	A
Peak pulse current	$I_{CM}$	4	A
Power dissipation	$P_{tot}$	2	W
Junction temperature	$T_j$	150	$^{\circ}\text{C}$
Storage temperature	$T_{stg}$	-55~150	$^{\circ}\text{C}$

**Electrical Characteristics ( $T_C=25^{\circ}\text{C}$  unless otherwise noted)**

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$BV_{CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	140			V
Collector-emitter breakdown voltage	$BV_{CEO}$	$I_C = 10\text{mA}, I_B = 0$	120			V
Emitter-base breakdown voltage	$BV_{EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	10			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 120\text{V}, I_B = 0$			0.01	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 8\text{V}, I_C = 0$			0.1	$\mu\text{A}$
DC current gain*	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 50\text{mA}$ $V_{CE} = 5\text{V}, I_C = 500\text{mA}$ $V_{CE} = 5\text{V}, I_C = 1\text{A}$ $V_{CE} = 5\text{V}, I_C = 2\text{A}$	2k 5k 2k 0.5k		100k	
Collector-emitter saturation voltage*	$V_{CE(sat)}$	$I_C = 250\text{mA}, I_B = 0.25\text{mA}$ $I_C = 1\text{A}, I_B = 1\text{mA}$			1.0 1.5	V
Base-emitter saturation voltage*	$V_{BE(sat)}$	$I_C = 1\text{A}, I_B = 1\text{mA}$			1.8	V
Base-emitter turn-on voltage*	$V_{BE(on)}$	$V_{CE} = 5\text{V}, I_C = 1\text{A}$			1.7	V
Transition frequency	$f_T$	$V_{CE} = 10\text{V}, I_C = 100\text{mA}$	150			MHz
Output capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f=1\text{MHz}$		15		pF

\* Measured under pulsed conditions. Pulse width = 300 $\mu\text{s}$ . Duty cycle 2%

Typical Characteristics

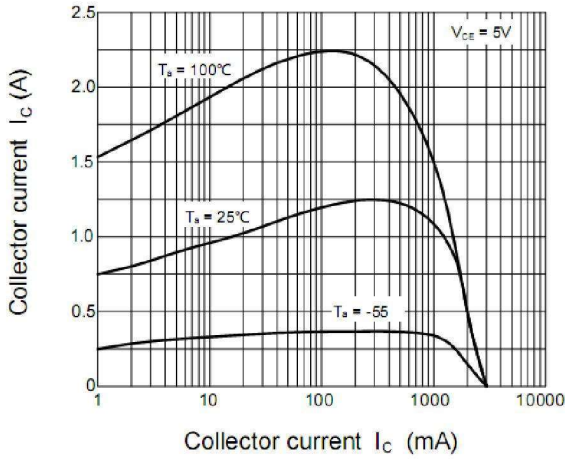


Figure 1. DC current Gain

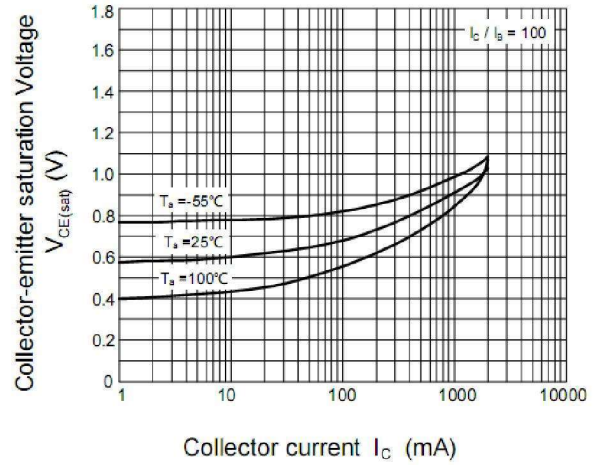


Figure 2. Collector-emitter saturation voltage

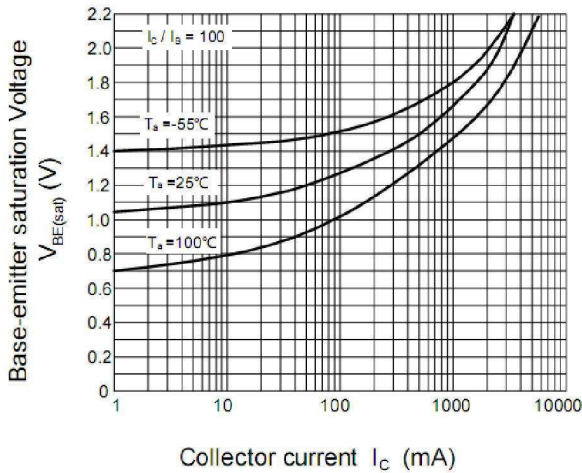


Figure 3. Base-emitter saturation Voltage

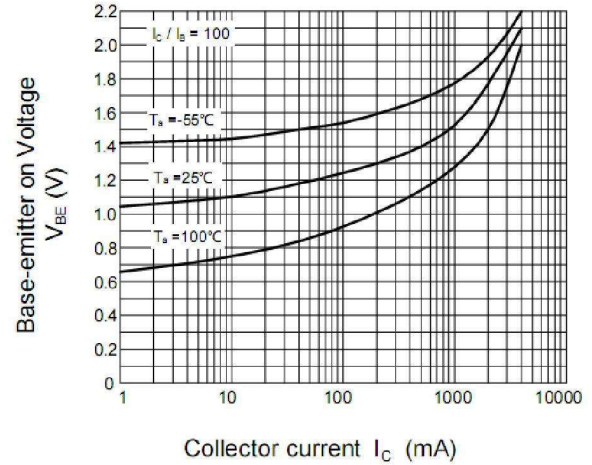


Figure 4. Base-emitter on Voltage

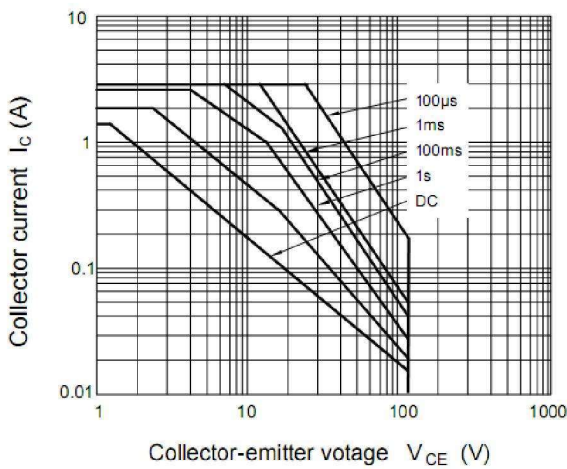


Figure 5. Safe operating area

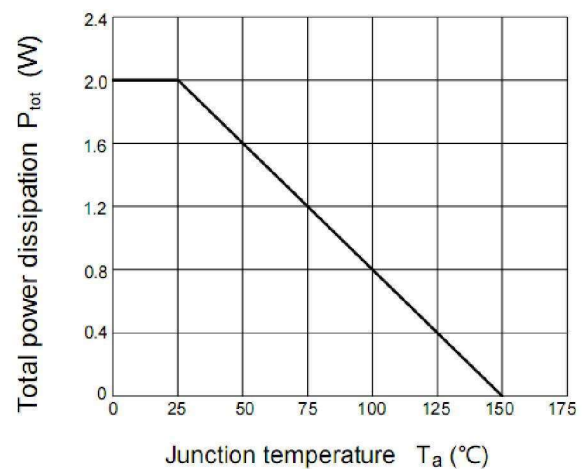
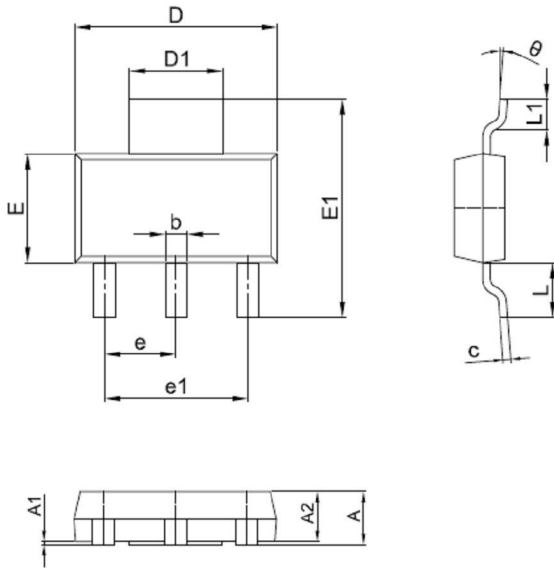


Figure 6. Power derating

Package Outline SOT-223

Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.00	0.10	0.000	0.004
A2	1.50	1.70	0.059	0.067
b	0.65	0.75	0.026	0.030
c	0.20	0.30	0.008	0.012
D	6.40	6.60	0.252	0.260
D1	2.90	3.10	0.114	0.122
E	3.30	3.70	0.130	0.146
E1	6.85	7.15	0.270	0.281
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	1.65	1.85	0.065	0.073
L1	0.90	1.15	0.035	0.045



Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SOT-223	Tape/Reel, 7" reel	2500	EIA-481-1