

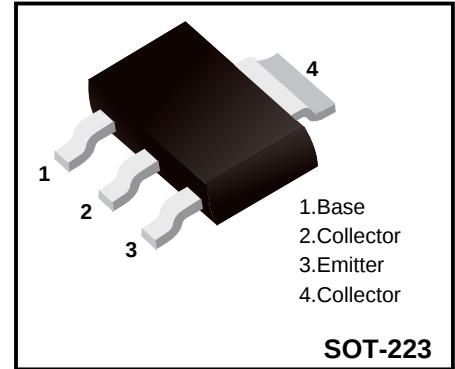
NPN Plastic-Encapsulate Transistors

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}	140	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	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 8\text{V}$, $I_C = 0$			0.1	μA
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 μs . Duty cycle 2%

Typical Characteristics

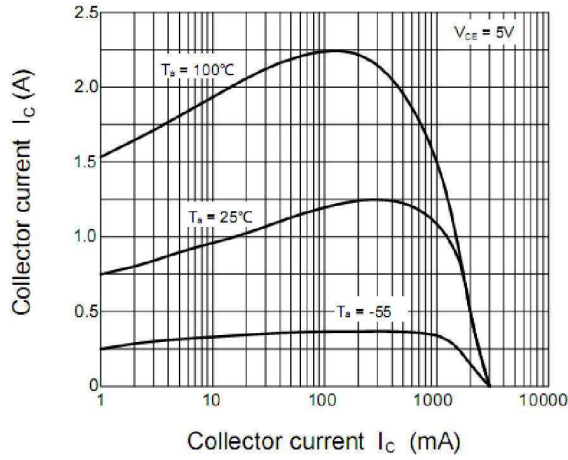


Figure 1. DC current Gain

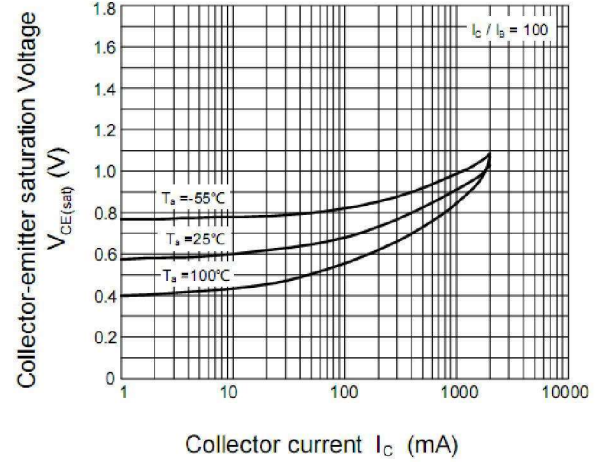


Figure 2. Collector-emitter saturation voltage

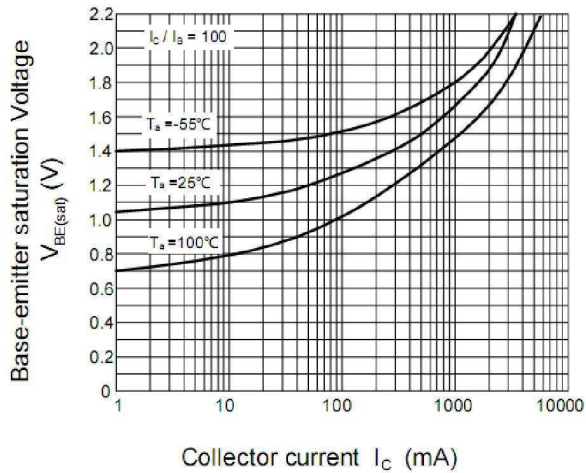


Figure 3. Base-emitter saturation Voltage

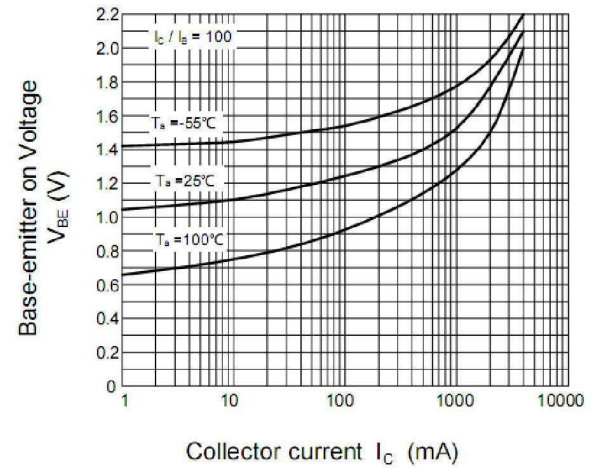


Figure 4. Base-emitter on Voltage

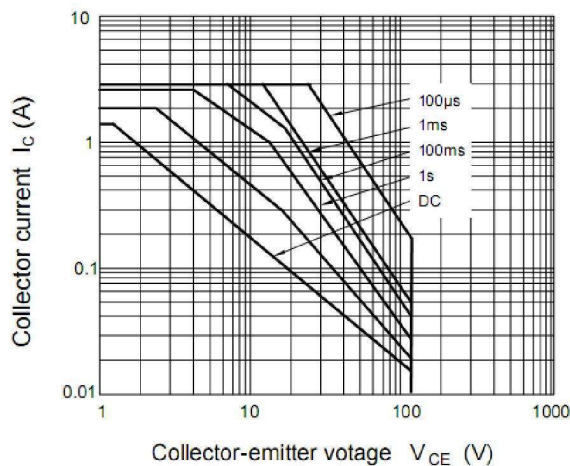


Figure 5. Safe operating area

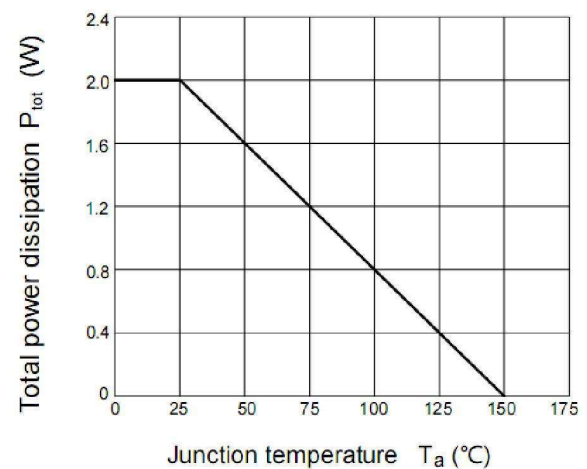


Figure 6. Power derating

Ordering information

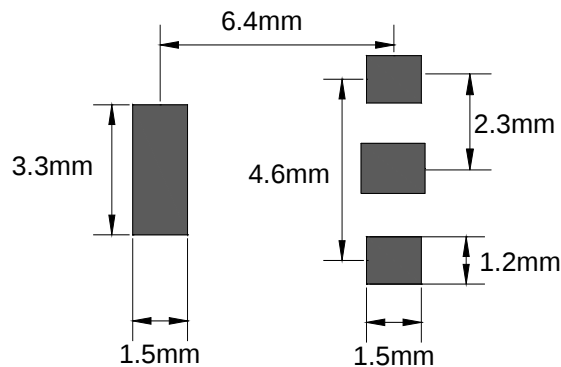
Package	Packing Description	Base Quantity	Packing Quantity
SOT-223	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton
	Tape/Reel, 13" reel	2500pcs/Reel	5000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-223

Dlm	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

The recommended mounting pad size



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