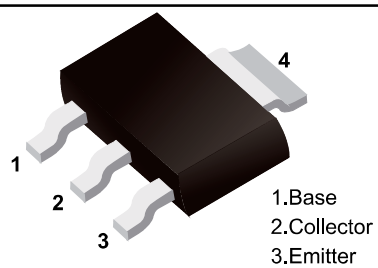
NPN Plastic-Encapsulate Transistors



FEATURES

- BV_{CEO}>400V
- I_C=500mAcontinuous current
- Low saturationvoltages
- Hight voltage
- Complement to FZT758

Marking Code	
FZT658TA	YFW FZT658TA

Absolute Maximum Ratings (T_C=25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Collector-base voltage		BV_{CBO}	400	V
Collector-emitter voltage		BV_{CEO}	400	V
Emitter-base voltage		BV_{EBO}	7	V
Continuous collector current		I_C	0.5	A
Peak pulse current		I_{CM}	1	A
Power dissipation	note 1	P_D	2	W
	note 2		3	
Junction temperature		T_J	150	°C
Storage temperature		T_{STG}	-55 ~ 150	°C
Thermal Resistance, Junction to Ambient	note 1	$R_{\theta JA}$	62.5	°C/W
	note 2		41.7	
Thermal Resistance, Junction to Leads		$R_{\theta JL}$	400	°C/W

Note:

1. For a device surface mounted on 25mm×25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions; device measured when operating in steady state condition.

2.Same as note (1), except the device is mounted on 50mm×50mm single sided 2oz weight copper

3.Thermal resistance from junction to solder point (at the end of the collector lead).

Electrical Characteristics (T_C=25℃, unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Collector-base breakdown voltage	I_C = 100μA , I_E = 0	BV_{CBO}	400			V
Collector-emitter breakdown voltage	I_C = 1mA , I_B = 0	BV_{CEO}	400			V
Emitter-base breakdown voltage	I_E = 100μA , I_C = 0	BV_{EBO}	7			V
Collector cut-off current	V_{CB} = 320V , I_B = 0	I_{CBO}			100	nA
Emitter cut-off current	V_{EB} = 6V , I_C = 0	I_{EBO}			100	nA
DC current gain	V_{CE} = 5V , I_C= 1mA	h_{FE}	50			
	V_{CE} = 5V , I_C= 100mA		50			
	V_{CE} = 10V , I_C= 200mA		40			
Collector-emitter saturation voltage	I_C = 20mA , I_B = 1mA	$V_{CE(sat)}$			0.3	V
	I_C = 50mA , I_B = 5mA				0.25	
	I_C = 100mA , I_B = 10mA				0.5	
Base-emitter saturation voltage	I_C = 100mA , I_B = 10mA	$V_{BE(sat)}$			0.9	V
Base-emitter turn-on voltage	V_{CE} = 5V , I_C= 100mA	$V_{BE(on)}$			1.0	V
Transition frequency	V_{CE} =20V , I_C = 10mA f=20MHz	f_T	50			MHz
Output capacitance	V_{CB} = 20V, I_E = 0, f=1MHz	C_{ob}		10		pF
Switching time	V_{CC}=100V, I_C=100mA I_{B1}=10mA, I_{B2}= -20mA	t_{on}		130		ns
		t_{off}		3300		

Note: 4. Measured under pulsed conditions. Pulse width ≤ 300μs, duty cycle ≤ 2%

Typical Characteristics

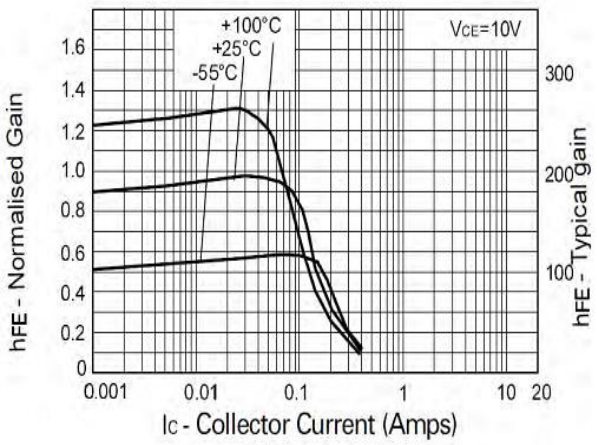


Figure 1. DC current Gain

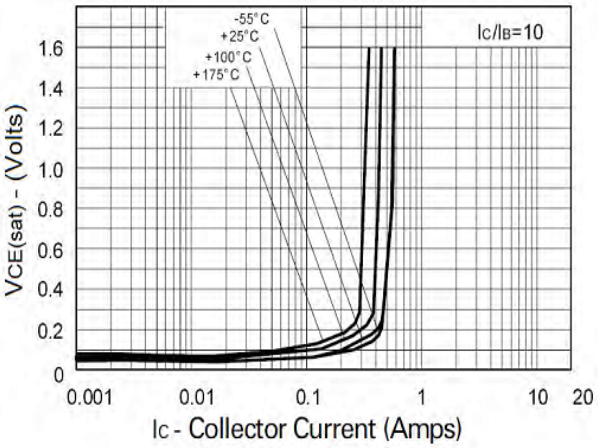


Figure 2. Collector-Emitter Saturation Voltage

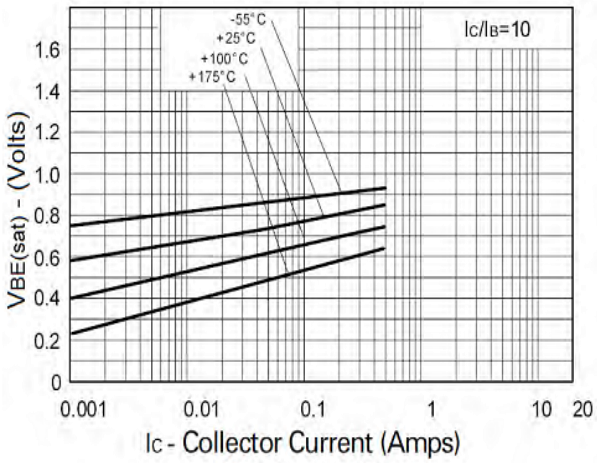


Figure 3. Base-Emitter Saturation Voltage

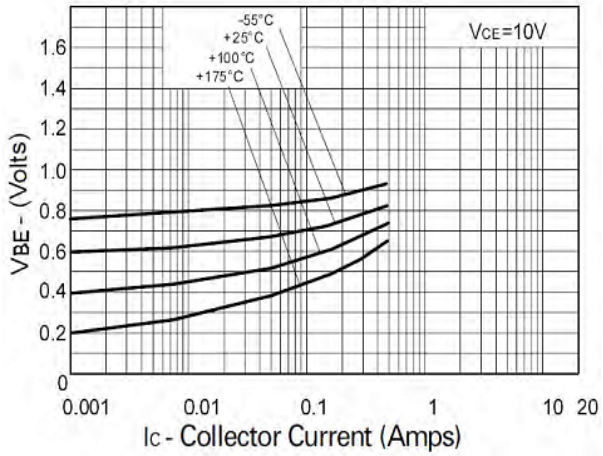


Figure 4. Base-Emitter on Voltage

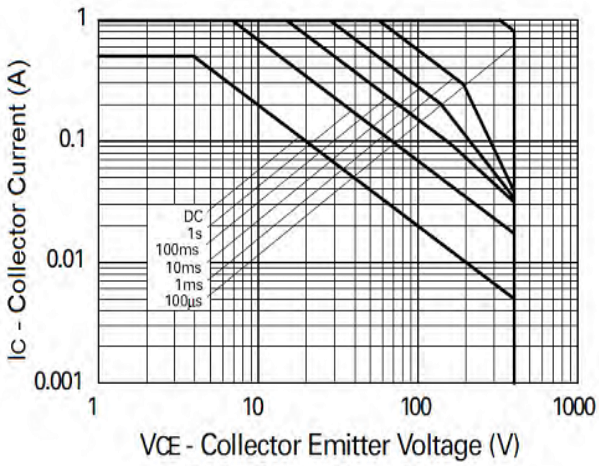


Figure 5. Safe Operating Area

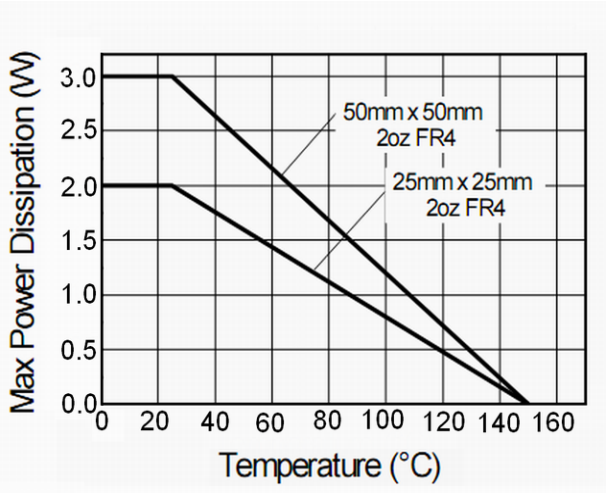


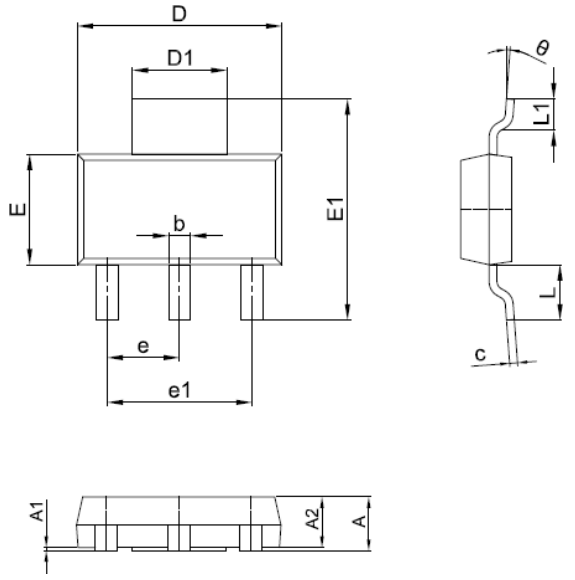
Figure 6. Power Derating

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

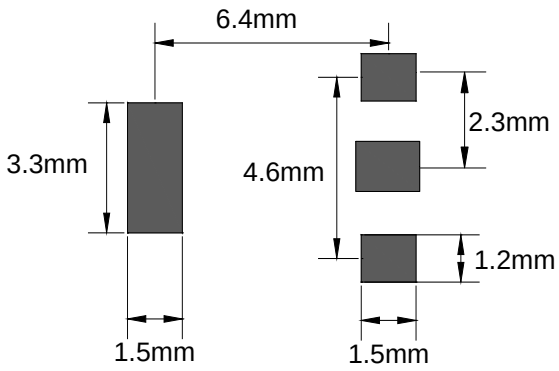
Package Dimensions

SOT-223



Dim	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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