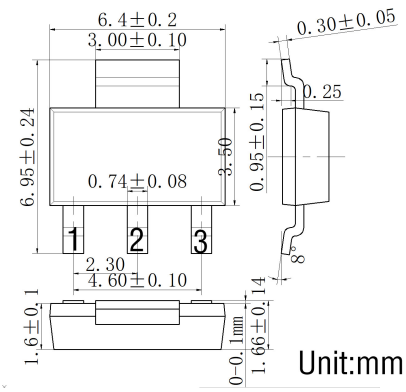
SHENZHEN LONG JING MICRO-ELECTRONICS CO., LTD.

SOT-223 Plastic-Encapsulate Transistors

DZT5551

NPN Surface Mount Transistor



1. Base
2. Collector
3. Emitter
4. Collector

Features

- Epitaxial Planar Die Construction
- Complementary PNP Type Available (DZT5401)
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications

Marking: DZT5551

Maximum Ratings (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector Base Voltage	180	V
V_{CEO}	Collector Emitter Voltage	160	V
V_{EBO}	Emitter Base Voltage	6.0	V
I_C	Collector Current – Continuous	600	mA
P_D	Power Dissipation	1	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambien	125	°C/W
T_j,T_{stg}	Operating and Storage and Temperature Range	-55 to +150	°C

Electrical Characteristics (T_a=25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C = 100μA,I_E = 0	180			V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C = 1mA,I_B = 0	160			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E = 10μA,I_C = 0	6.0			V
I_{CBO}	Collector cut-off current	V_{CB} = 120V,I_E = 0			50	nA
		V_{CB} = 120V,I_E = 0, T_A = 125°C			50	μA
I_{EBO}	Emitter cut-off current	V_{EB} = 4.0V, I_C = 0			50	nA
$h_{FE(1)}$	DC current gain	V_{CE} = 5V, I_C = 1mA	80			
$h_{FE(2)}$		V_{CE} = 5V, I_C = 10mA	80		250	
$h_{FE(3)}$		V_{CE} = 5V, I_C = 50mA	30			
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_C = 10mA,I_B = 1mA			0.15	V
		I_C = 50mA,I_B = 5mA			0.20	V
$V_{BE(sat)}$	Base-emitter saturation voltage	I_C = 10mA,I_B = 1mA			1.0	V
		I_C = 50mA,I_B = 5mA			1.0	V
C_{obo}	Output Capacitance	V_{CB} = 10V, f = 1.0MHz, I_E = 0			6.0	pF
h_{fe}	Small Signal Current Gain	V_{CE}=10V,I_C=1.0mA,f=1.0kHz	50		200	pF
f_T	Transition frequency	V_{CE}=10V,I_C=10mA,f=1.0kHz	100		300	MHz
NF	Noise Figure	V_{CE} = 5.0V, I_C = 200μA, R_S = 1.0kΩ, f = 1.0kHz			8	dB

Typical Characteristics

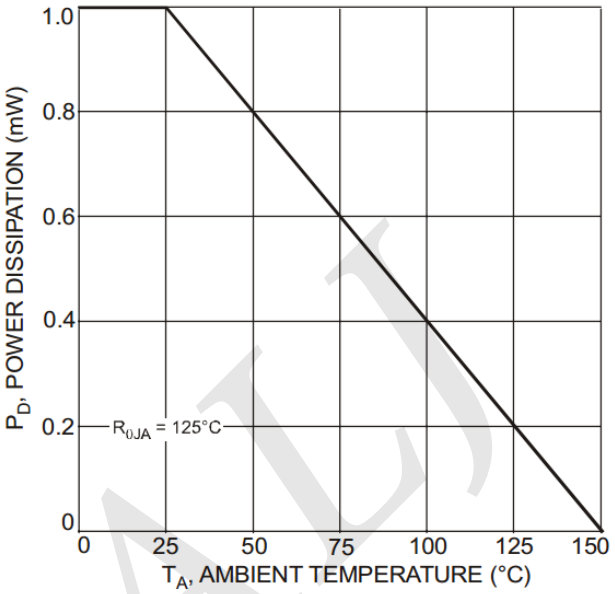


Fig. 1 Max Power Dissipation vs. Ambient Temperature

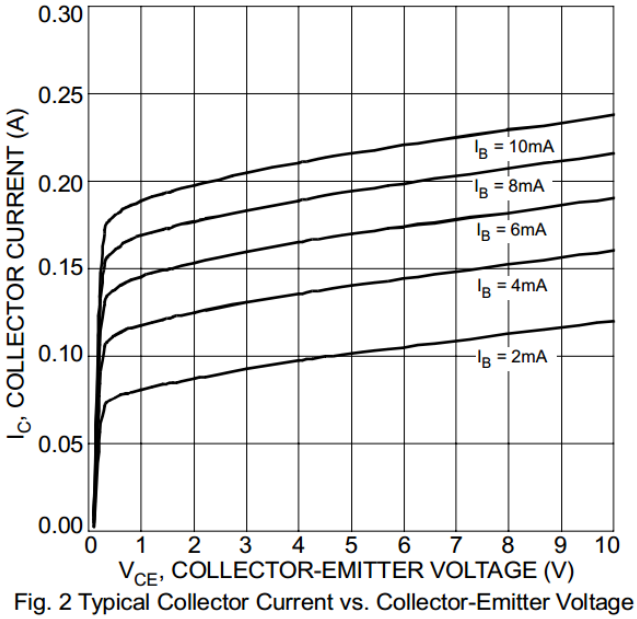


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage

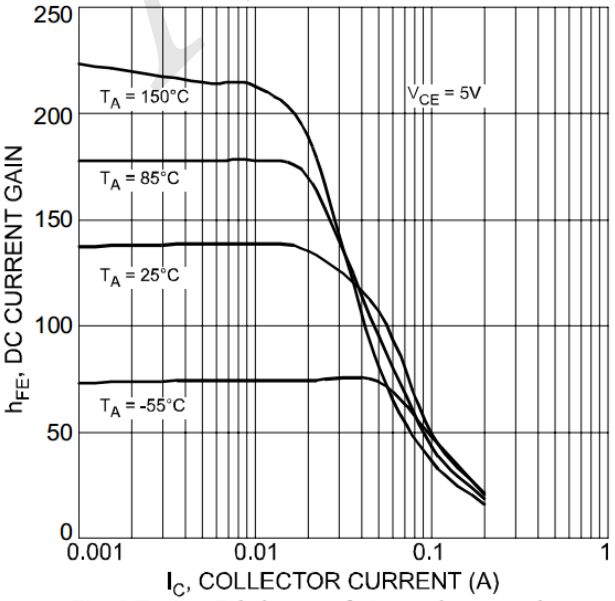


Fig. 3 Typical DC Current Gain vs. Collector Current

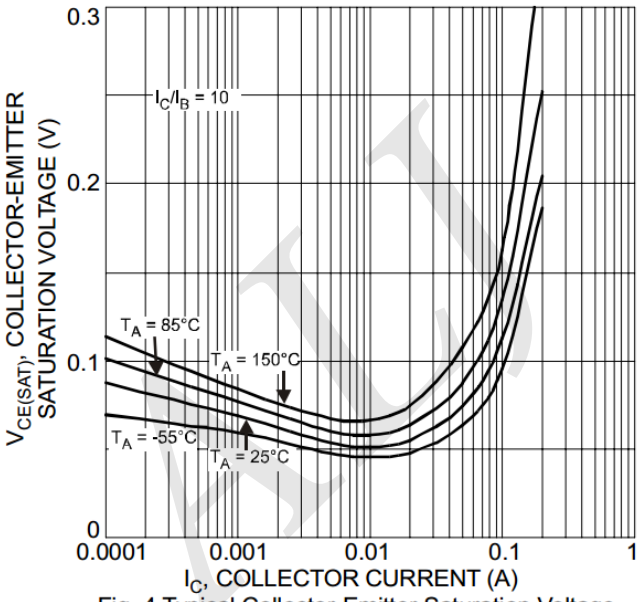


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

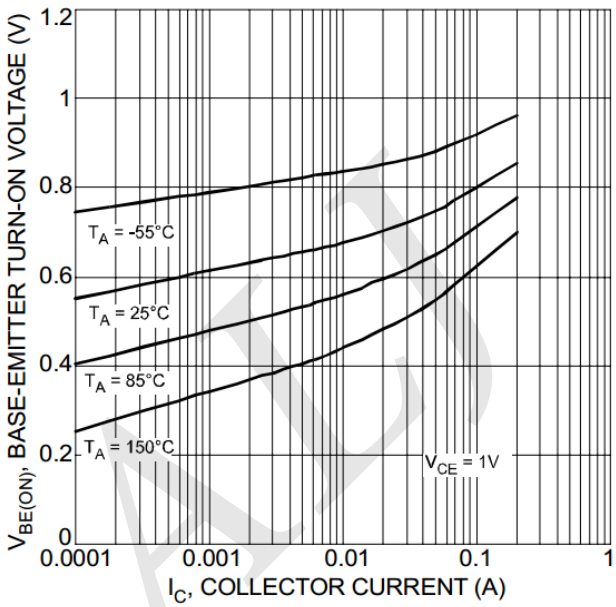


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

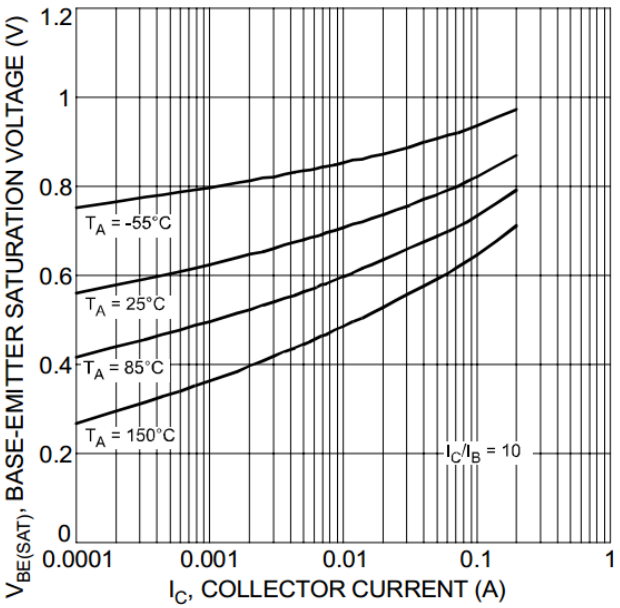


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

Typical Characteristics (Cont.)

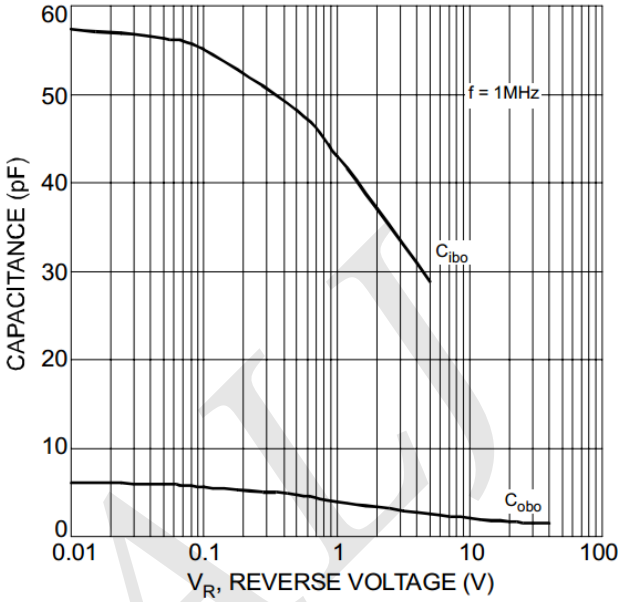


Fig. 7 Typical Capacitance Characteristics

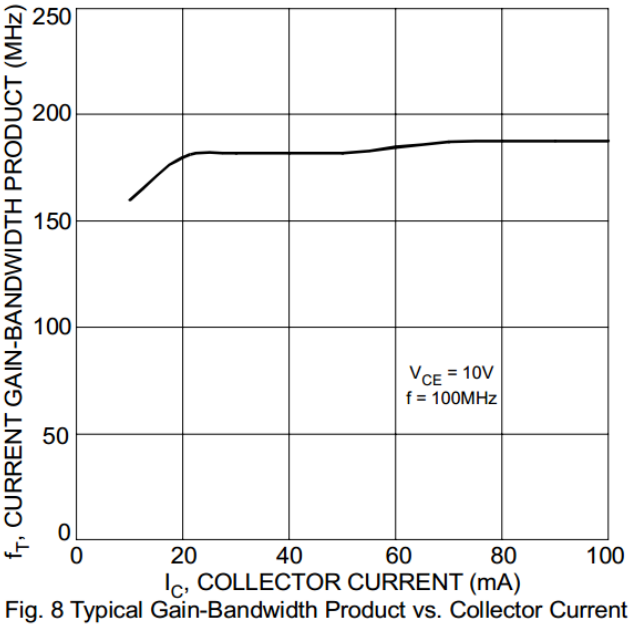


Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current