

NPN Transistor



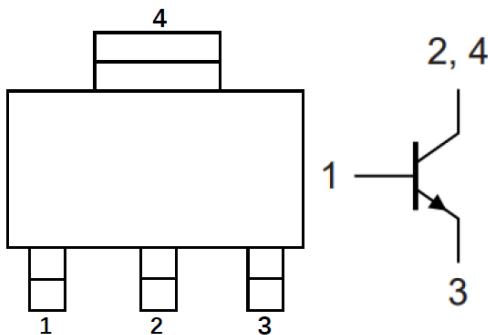
Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture Sensitivity Level 1

Mechanical Data

- **Package:** SOT-223
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** ZT5551

Equivalent circuit



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

Item	Symbol	Unit	Conditions	Value
Minimum Collector-Emitter Voltage	V_{CEO}	V	$I_C=1mA, I_B=0$	160
Minimum Collector-Base Voltage	V_{CBO}	V	$I_C=100\mu A, I_E=0$	180
Minimum Emitter-Base Voltage	V_{EBO}	V	$I_E=10\mu A, I_C=0$	6
Collector Current	I_C	A		0.6
Power Dissipation	P_D	W		1
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	°C/W		125
Operation Junction Temperature	T_J	°C		-55 to +150
Storage Temperature	T_{stg}	°C		-55 to +150

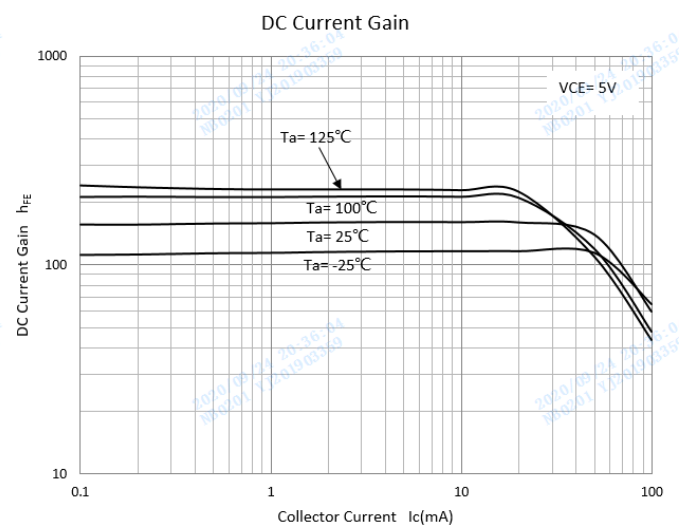
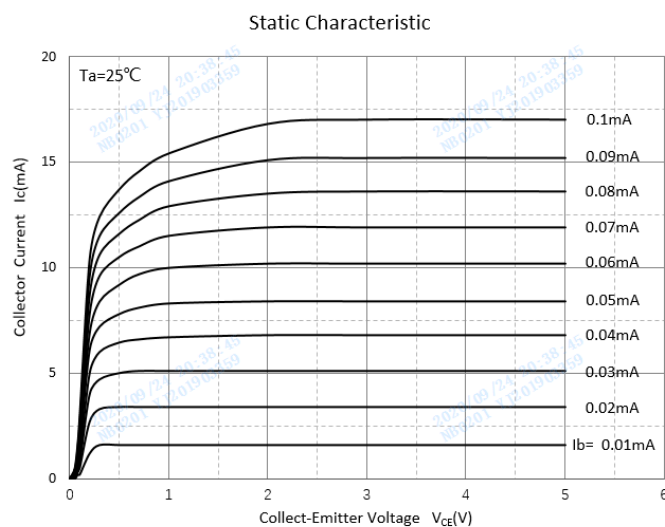
■Electrical Characteristics (Ta=25℃ unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Max
Collector-Emitter Voltage	V_{CEO}	V	$I_C=1mA_{dc}, I_B=0$	160	-
Collector-Base Voltage	V_{CBO}	V	$I_C=100\mu A_{dc}, I_E=0$	180	-
Emitter-Base Voltage	V_{EBO}	V	$I_E=10\mu A_{dc}, I_C=0$	6.0	-
Collector-base Cut-off Current	I_{CBO}	nA	$V_{CB}=120V_{dc}$	-	50
Emitter-base Cut-off Current	I_{EBO}	nA	$V_{EB}=4.0V_{dc}$	-	50
DC Current Gain	h_{FE}		$I_C=1.0mA, V_{CE}=5.0V_{dc}$	80	-
			$I_C=10mA, V_{CE}=5.0V_{dc}$	80	250
			$I_C=50mA, V_{CE}=5.0V_{dc}$	30	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	V	$I_C=10mA, I_B=1.0mA$	-	0.15
	$V_{CE(sat)2}$	V	$I_C=50mA, I_B=5.0mA$	-	0.2
Base-Emitter Saturation Voltage	$V_{BE(sat)1}$	V	$I_C=10mA, I_B=1.0mA$	-	1
	$V_{BE(sat)2}$	V	$I_C=50mA, I_B=5.0mA$	-	1
Output Capacitance	C_{ob}	pF	$V_{CB}=10V_{dc}, I_E=0, f=1MHz$	-	6
Transition frequency	f_T	MHz	$I_C=10mA_{dc}, V_{CE}=5.0V_{dc}, f=30MHz$	100	300

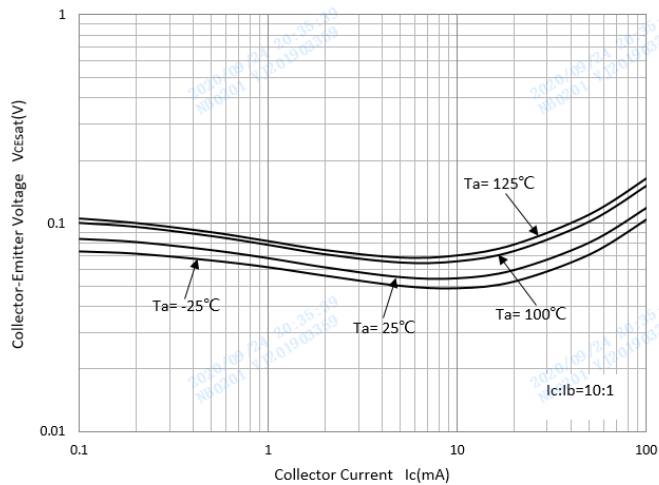
■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
PZT5551	F2	Approximate 0.11	2500	5000	25000	13" reel

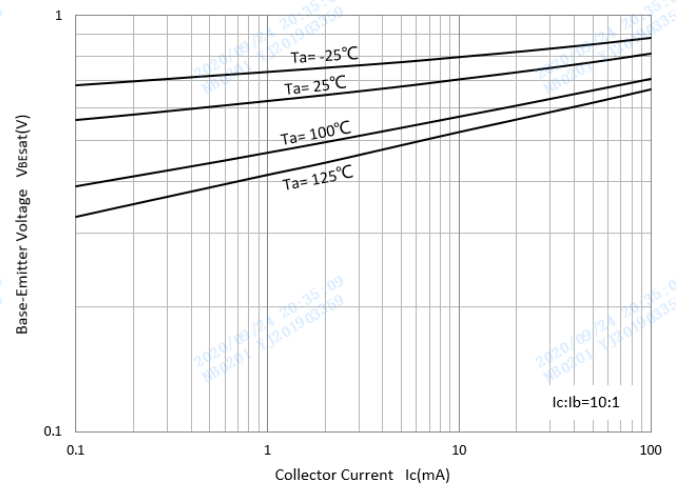
■Characteristics (Typical)



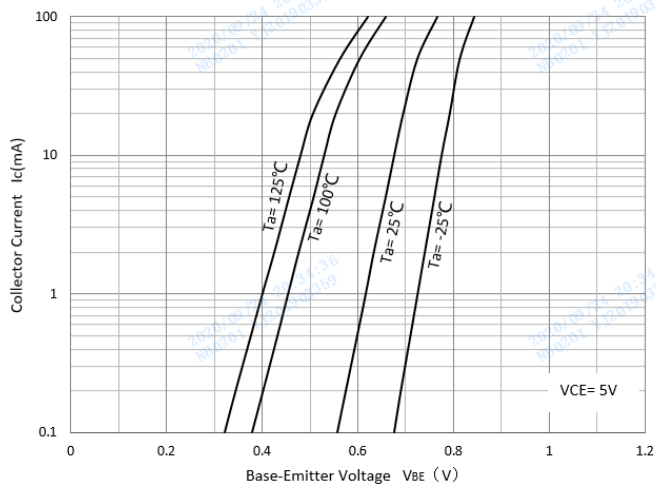
Collector-Emitter Saturation Voltage



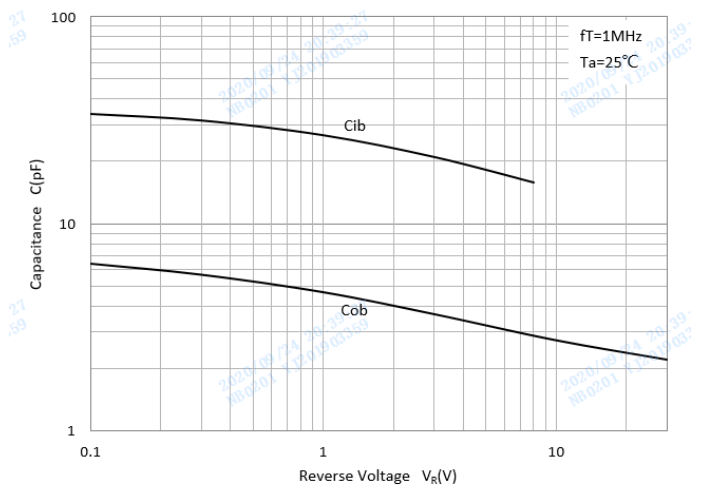
Base-Emitter Saturation Voltage



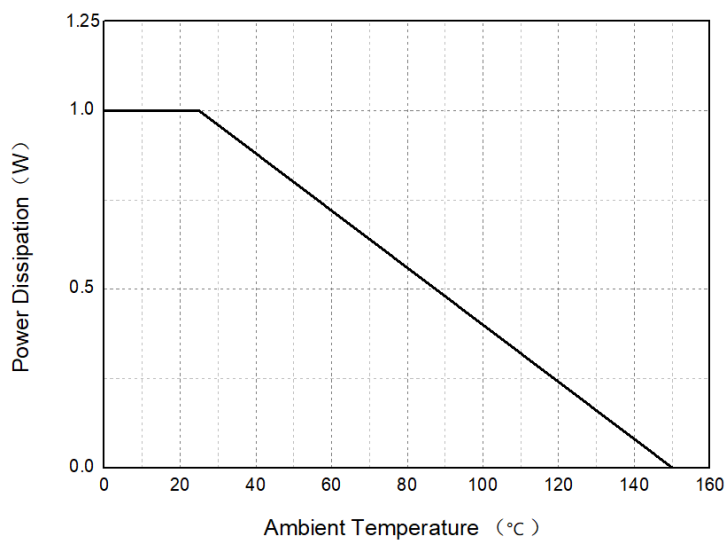
Base-Emitter On Voltage



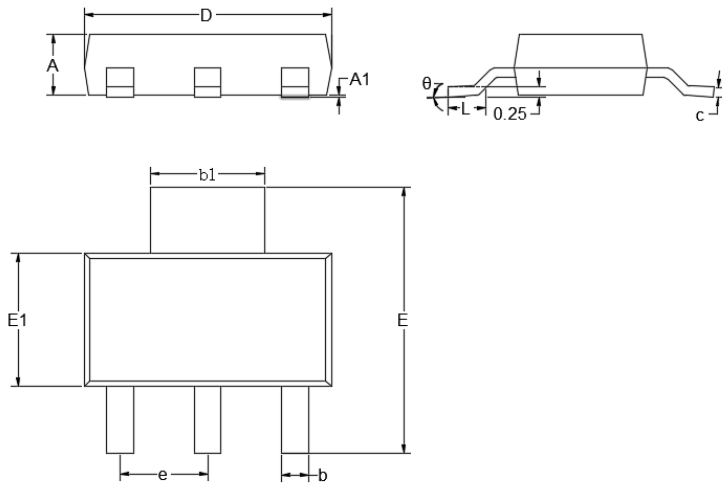
$C_{ob}/C_{ib}-V_{CB}/V_{EB}$



Power Derating Curve

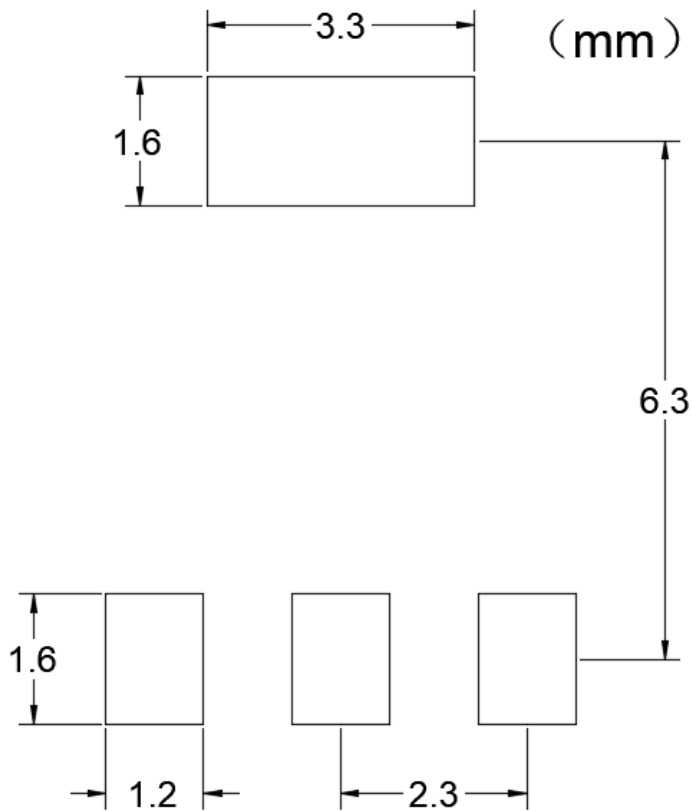


■SOT-223 Package Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.0591	0.0670	1.5000	1.7000
A1	0.0008	0.0039	0.0200	0.1000
b	0.0259	0.0330	0.6600	0.8400
b1	0.1140	0.1220	2.9000	3.1000
c	0.0090	0.0138	0.2300	0.3500
D	0.2480	0.2640	6.3000	6.7000
E	0.2637	0.2874	6.7000	7.3000
E1	0.1290	0.1460	3.3000	3.7000
e	0.0866	0.0945	2.2000	2.4000
L	0.0295	0.0492	0.7500	1.2500
θ	0°	10°	0°	10°

■SOT-223 Suggested Pad Layout



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