

NPN Transistor

160V 2W SOT-223

PZT5551

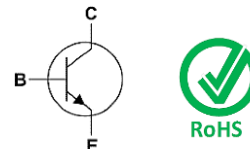
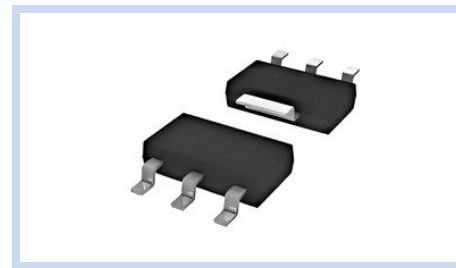
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FEATURES

- Low Collector-Emitter Saturation Voltage
- Capable of 2W Power Dissipation
- Excellent DC Current Gain Characteristics

APPLICATIONS

- High Voltage Switching Circuit
- Signal Amplification in Analog and Small-signal Circuit
- Driver Circuit in Relay, LED and Small Load Driver



MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	600	mA
Power Dissipation	P_{tot}	2	W
Typical Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}C/W$
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-65 ~ +150	$^{\circ}C$

ELECTRICAL CHARACTERISTICS

Parameter- ON Characteristic	Conditions	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain	$V_{CE}=5V, I_C=1mA$	h_{FE}	80	-	-	-
	$V_{CE}=5V, I_C=10mA$		80	160	400	
	$V_{CE}=5V, I_C=50mA$		80	-	-	
Collector-Emitter Saturation Voltage	$I_C=10mA, I_B=1mA$	$V_{CE(SAT)}$	-	-	0.15	V
	$I_C=50mA, I_B=5mA$		-	-	0.2	
Base-Emitter Saturation Voltage	$I_C=10mA, I_B=1mA$	$V_{BE(SAT)}$	-	-	1	V
	$I_C=50mA, I_B=5mA$		-	-	1	
Parameter- OFF Characteristics	Conditions	Symbol	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$I_C=100\mu A, I_E=0$	$V_{(BR)CBO}$	180	-	-	V
Collector-Emitter Breakdown Voltage	$I_C=1mA, I_B=0$	$V_{(BR)CEO}$	160	-	-	V
Emitter-Base Breakdown Voltage	$I_E=10\mu A, I_C=0$	$V_{(BR)EBO}$	6	-	-	V
Collector-Base Cut-Off Current	$V_{CB}=120V, I_E=0$	I_{CBO}	-	-	50	nA
Emitter-Base Cut-Off Current	$V_{EB}=4V, I_C=0$	I_{EBO}	-	-	50	nA
Output Capacitance	$V_{CB}=10V, I_E=0, f=1MHz$	C_{ob}	-	-	6	pF
Parameter-Small Signal	Conditions	Symbol	Min.	Typ.	Max.	Unit
Current-Gain – Bandwidth Product	$V_{CE}=10V, I_C=10mA, f=100MHz$	f_T	100	-	300	MHz
Noise Figure	$V_{CE}=5V, I_C=0.25mA, R_s=1K\Omega, f=10Hz\sim 15.7KHz$	NF	-	-	8	dB

Note:

1. $T_A=25^{\circ}C$ unless otherwise noted. 2. Pulse test: $P_W<300\mu s$, Duty cycle<2%.

CLASSIFICATION OF h_{FE}

Part Number	PZT5551A	PZT5551B	PZT5551C
Range	80~170	150~240	200~400

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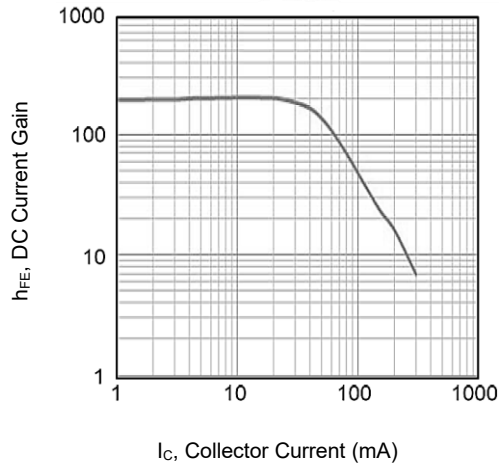
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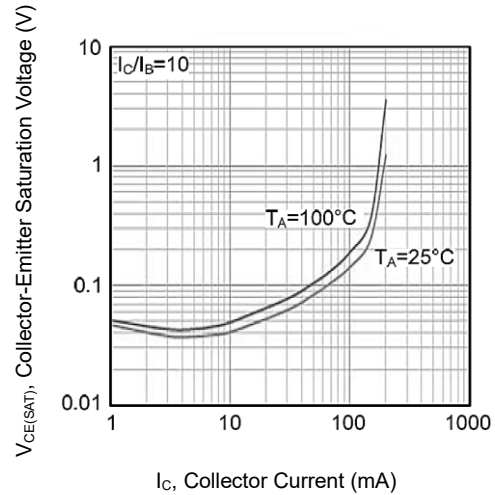
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CHARACTERISTIC CURVES

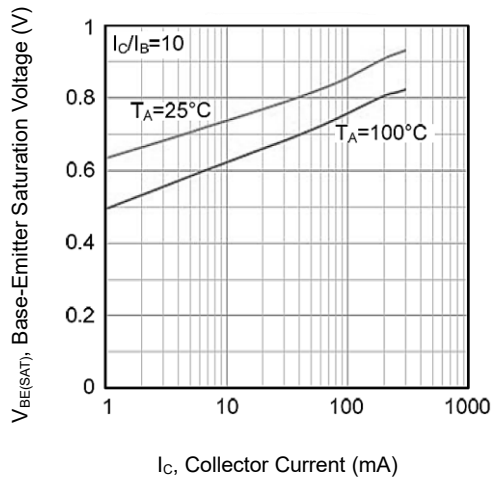
DC Current Gain



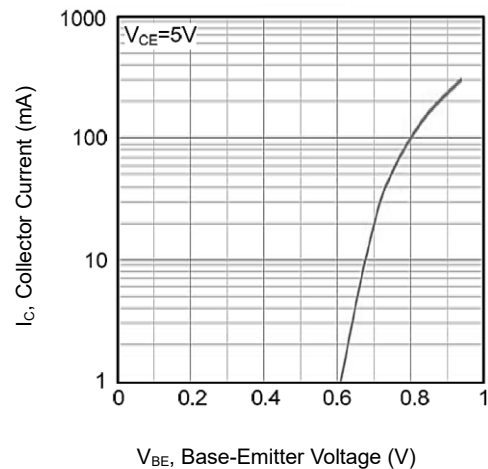
Collector-Emitter Saturation Voltage



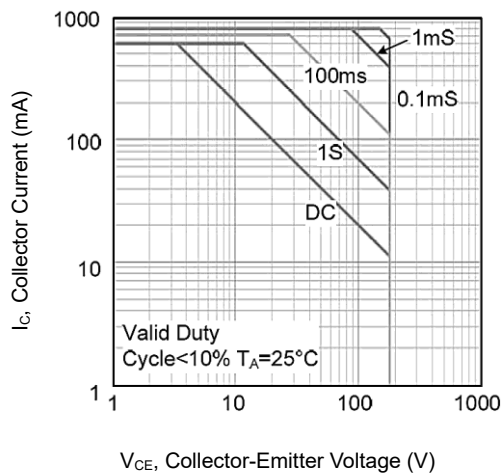
Base-Emitter Saturation Voltage



Collector Current vs. Base-Emitter Voltage



Safe Operating Areas



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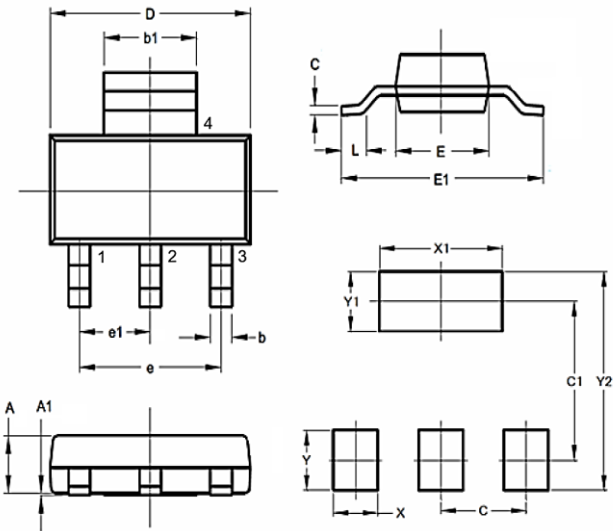
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DIMENSIONS

Item	Min (mm)	Max (mm)
A	1.50	1.70
A1	0.00	0.10
b	0.60	0.82
b1	2.90	3.15
C	0.24	0.35
D	6.15	6.65
e	4.50	4.70
e1	2.30	
E	3.30	3.70
E1	6.70	7.30
L	0.75	--
X	1.50	
X1	3.80	
Y	2.00	
Y1	2.00	
Y2	8.02	
c	2.30	
c1	6.02	

Note: 1: Base, 2,4: Collector, 3: Emitter



*Specifications subject to change without notice.