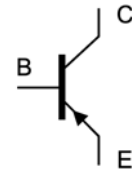
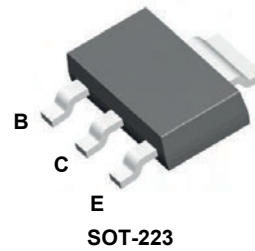


### Features

- High voltage
- High voltage amplifier application



Schematic Diagram

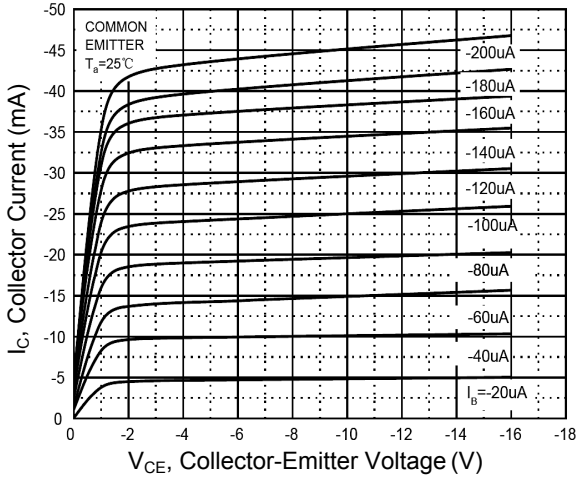
### Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	-160	V
Collector-Emitter Voltage	$V_{CEO}$	-150	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-600	mA
Collector Power Dissipation	$P_C$	1	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	125	$^\circ\text{C}/\text{W}$
Operation Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

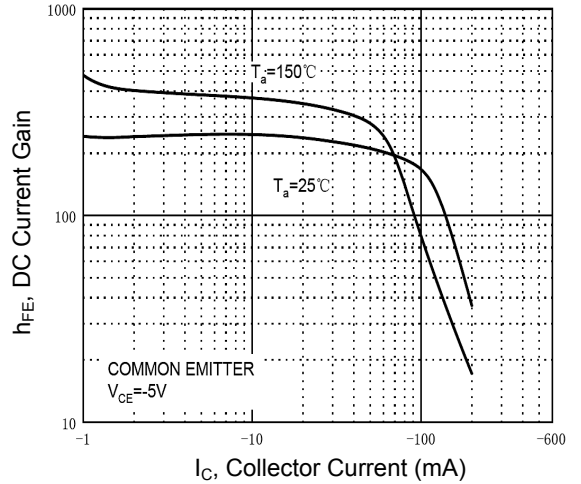
### Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-0.1\text{mA}, I_E=0$	-160	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, I_B=0$	-150	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-0.01\text{mA}, I_C=0$	-5	-	-	V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=-120\text{V}, I_E=0$	-	-	-50	nA
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=-3\text{V}, I_C=0$	-	-	-50	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-5\text{V}, I_C=-1\text{mA}$	50	-	-	-
	$h_{FE(2)}$	$V_{CE}=-5\text{V}, I_C=-10\text{mA}$	100	-	300	
	$h_{FE(3)}$	$V_{CE}=-5\text{V}, I_C=-50\text{mA}$	50	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$	-	-	-0.2	V
		$I_C=-50\text{mA}, I_B=-5\text{mA}$	-	-	-0.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$	-	-	-1	V
		$I_C=-50\text{mA}, I_B=-5\text{mA}$	-	-	-1	V
Transition Frequency	$f_T$	$V_{CE}=-10\text{V}, I_C=-10\text{mA}, F=100\text{MHz}$	100	-	300	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=-10\text{V}, I_E=0, F=1\text{MHz}$	-	-	6	pF

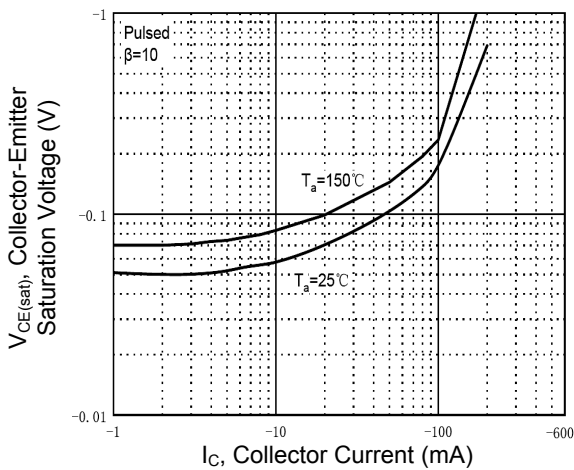
**Typical Characteristic Curves**



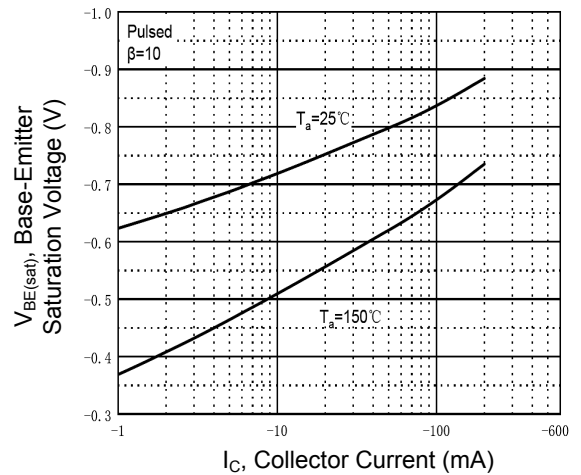
**Figure 1. Static Characteristic**



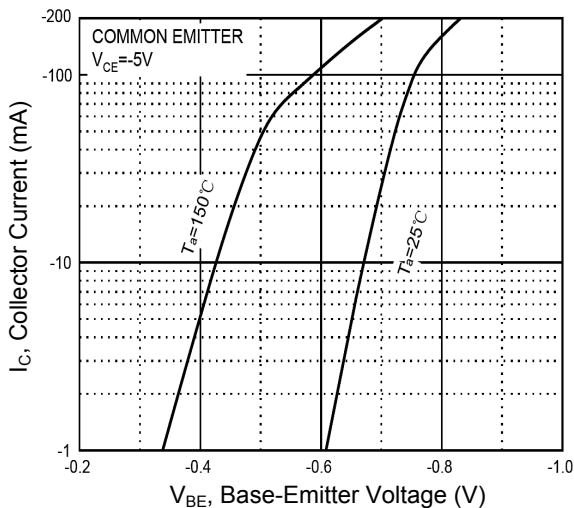
**Figure 2. DC Current Gain vs. Collector Current**



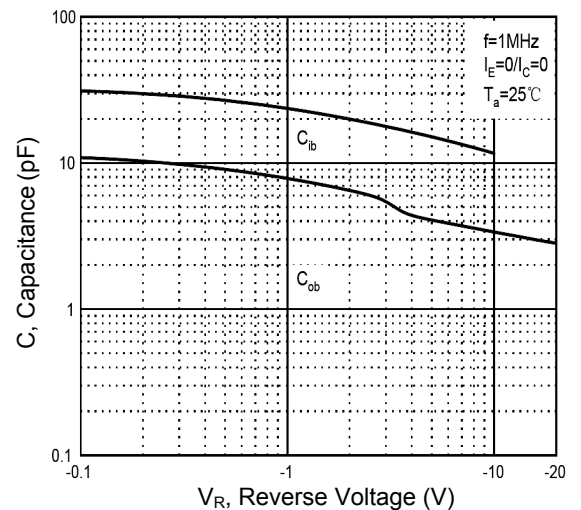
**Figure 3. Collector-Emitter Saturation Voltage vs. Collector Current**



**Figure 4. Base-Emitter Saturation Voltage vs. Collector Current**

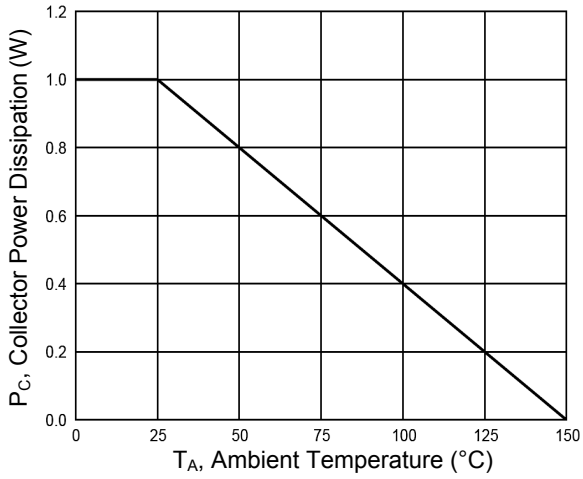


**Figure 5. Collector Current vs. Base-Emitter Voltage**



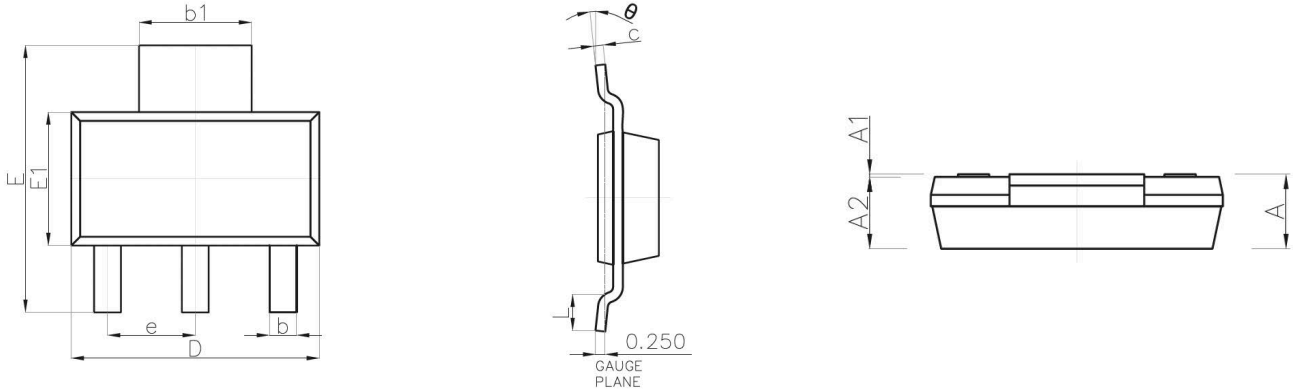
**Figure 6. Capacitance Characteristics**

### Typical Characteristic Curves



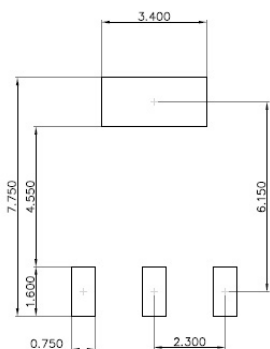
**Figure 7. Collector Power Dissipation vs. Ambient Temperature**

**Package Outline Dimensions (SOT-223)**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	-	1.800	-	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300 (BSC)		0.091 (BSC)	
L	0.750	-	0.030	-
θ	0°	10°	0°	10°

**Recommended Pad Layout**



Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

**Order Information**

Device	Package	Marking	Packaging	SPQ
PZT5401	SOT-223	ZT5401	Tape & Reel	2,500 Pcs / Reel