



# PZT651

## NPN SILICON TRANSISTOR

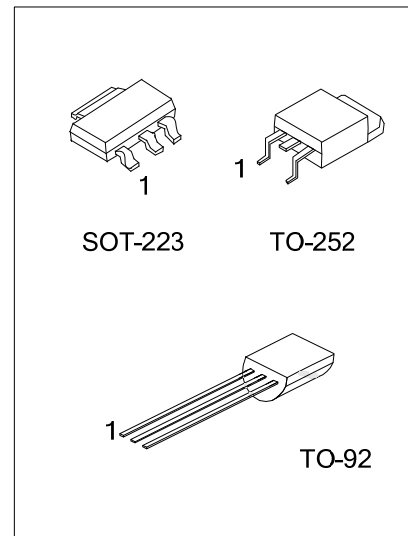
### NPN CURRENT DRIVER TRANSISTOR

■ DESCRIPTION

The UTC **PZT651** is designed for power amplifier, regulator, and switching circuits where speed is important.

■ FEATURES

- \* Collector-Emitter voltage:  
 $V_{CE0} = -80V$
- \* Collector Dissipation:  
 $P_{D(MAX)} = 1.2W$
- \* Low collector-Emitter saturation voltage
- \* Complementary of PNP PZT751



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
PZT651L-AA3-R	PZT651G-AA3-R	SOT-223	B	C	E	Tape Reel
PZT651L-TN3-R	PZT651G-TN3-R	TO-252	B	C	E	Tape Reel
PZT651L-T92-B	PZT651G-T92-B	TO-92	E	B	C	Tape Box
PZT651L-T92-K	PZT651G-T92-K	TO-92	E	B	C	Bulk

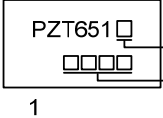
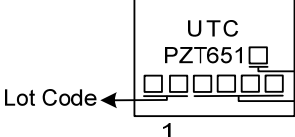
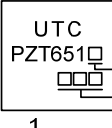
Note: Pin Assignment: B: Base C: Case E: Emitter

<p>PZT651G-AA3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel, B: Tape Box, K: Bulk</p> <p>(2) AA3: SOT-223, TN3: TO-252, T92: TO-92</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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# PZT651

## NPN SILICON TRANSISTOR

### MARKING

PACKAGE	MARKING
SOT-223	 <p>1</p> <p>L: Lead Free G: Halogen Free Date Code</p>
TO-252	 <p>1</p> <p>UTC PZT651 Lot Code L: Lead Free G: Halogen Free Date Code</p>
TO-92	 <p>1</p> <p>UTC PZT651 L: Lead Free G: Halogen Free Date Code</p>

### ■ ABSOLUTE MAXIMUM RATINGS (NOTE 2, 3)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A=25^\circ\text{C}$ , unless otherwise specified

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	5	V
DC Collector Current	$I_C$	4	A
Power Dissipation (Note 4)	SOT-223	1.2	W
	TO-252	1.56	W
	TO-92	0.6	W
Operating Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. These ratings are based on a maximum junction temperature of  $150^\circ\text{C}$ .

3. These are steady-state limits.

4. Device is mounted on FR-4 PCB 36mm×18mm×1.5mm; mounting pad for the collector lead minimum 6cm<sup>2</sup>.

### ■ THERMAL DATA ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

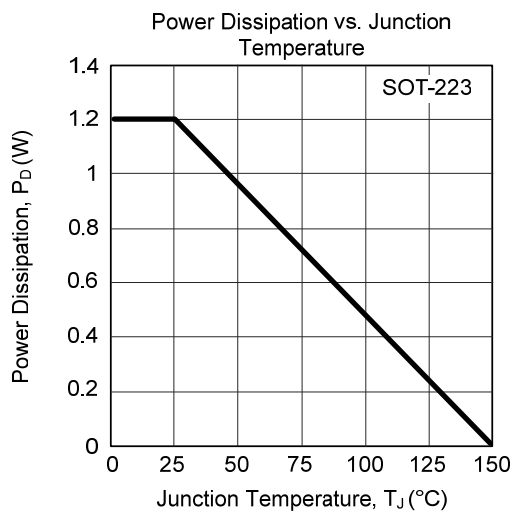
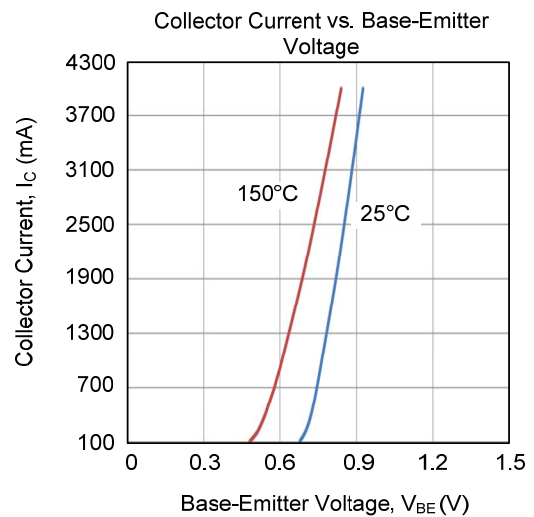
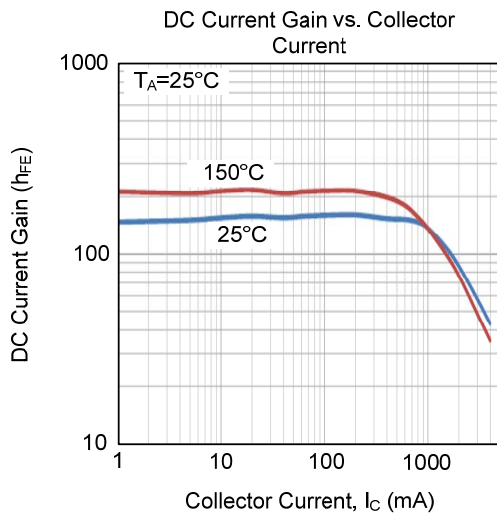
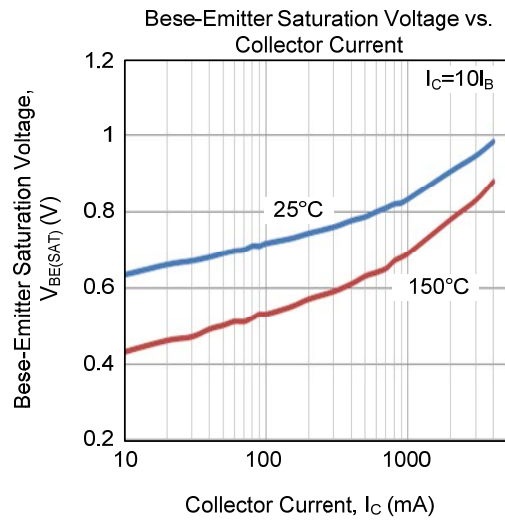
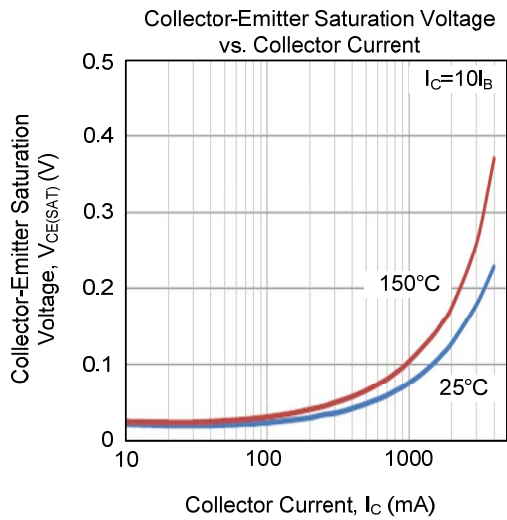
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	103	$^\circ\text{C/W}$
	TO-252	80	$^\circ\text{C/W}$
	TO-92	208	$^\circ\text{C/W}$

### ■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=100\mu\text{A}, I_E=0$	80			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=10\text{mA}, I_B=0$	60			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=80\text{V}, I_E=0$			100	nA
Emitter Cut-off Current	$I_{EBO}$	$V_{BE}=4\text{V}, I_C=0$			0.1	$\mu\text{A}$
DC Current Gain (Note)	$h_{FE}$	$V_{CE}=2\text{V}, I_C=50\text{mA}$	75			
		$V_{CE}=2\text{V}, I_C=500\text{mA}$	75			
		$V_{CE}=2\text{V}, I_C=1\text{A}$	75			
		$V_{CE}=2\text{V}, I_C=2\text{A}$	40			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=1\text{A}, I_B=100\text{mA}$			0.3	V
		$I_C=2\text{A}, I_B=200\text{mA}$			0.5	V
Base-Emitter Saturation Voltage (Note)	$V_{BE(SAT)}$	$I_C=1\text{A}, I_B=100\text{mA}$			1.2	V
Base Emitter On Voltage (Note)	$V_{BE(ON)}$	$I_C=1\text{A}, V_{CE}=2\text{V}$			1	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=5\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	75			MHz

Note: Pulse test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

## TYPICAL CHARACTERISTICS



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