

# NPN Epitaxial Silicon Transistor

## General Purpose Transistor

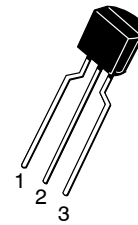
### PN2222

- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

#### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	600	mA
Collector Power Dissipation	P <sub>C</sub>	625	mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 to 150	°C

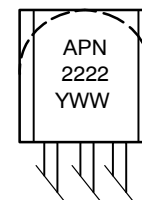
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.



TO-92-3  
CASE 135AR

1. Emitter
2. Base
3. Collector

#### MARKING DIAGRAM



- PN2222 = Specific Device Code  
 A = Assembly Location  
 Y = Year  
 WW = Work Week

#### ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

## PN2222

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

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$V_{CBO}$	Collector-Base Breakdown Voltage	$I_C = 10 \mu\text{A}, I_E = 0$	60			V
$V_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10 \text{ mA}, I_B = 0$	30			V
$V_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10 \mu\text{A}, I_C = 0$	5			V
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = 50 \text{ V}, I_E = 0$			0.01	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-Off Current	$V_{EB} = 3 \text{ V}, I_C = 0$			10	nA
$h_{FE}$	DC Current Gain	$V_{CE} = 10 \text{ V}, I_C = 0.1 \text{ mA}$	35			
		$V_{CE} = 10 \text{ V}, I_C = 150 \text{ mA}^*$	100		300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage*	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$			1	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage*	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$			2	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 20 \text{ V}, I_C = 20 \text{ mA}, f = 100 \text{ MHz}$	300			MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$			8	pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

\*Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , Duty Cycle  $\leq 2\%$

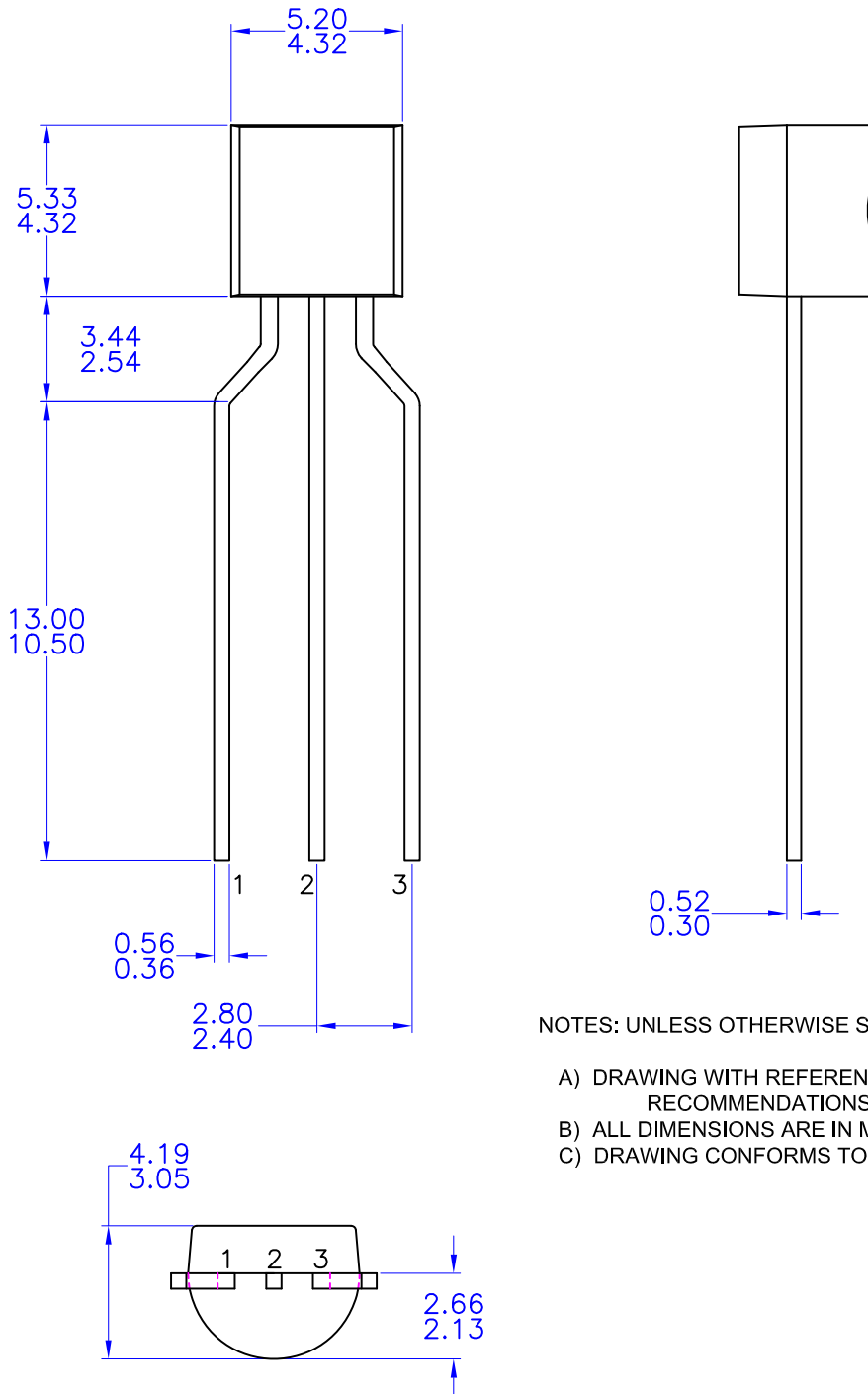
### ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping <sup>†</sup>
PN2222TA	PN2222	TO-92-3 (Pb-Free)	2,000 Units/ Fan-Fold
PN2222TF	PN2222	TO-92-3 (Pb-Free)	2,000 Units/ Tape & Reel

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

**TO-92 3 4.83x4.76 LEADFORMED**  
**CASE 135AR**  
**ISSUE O**

DATE 30 SEP 2016



NOTES: UNLESS OTHERWISE SPECIFIED

- A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DRAWING CONFORMS TO ASME Y14.5M-1994

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