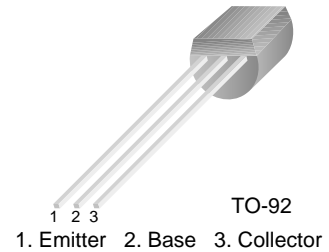


# KSP2222A

## NPN General Purpose Amplifier

### Features

- Collector-Emitter Voltage:  $V_{CE0} = 40V$
- Collector Power Dissipation:  $P_c(\text{max}) = 625mW$
- Available as PN2222A



### Absolute Maximum Ratings \* $T_a = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	75	V
$V_{CEO}$	Collector-Emitter Voltage	40	V
$V_{EBO}$	Emitter-Base Voltage	6.0	V
$I_C$	Collector current	600	mA
$T_J$	Junction Temperature	+150	$^\circ C$
$T_{stg}$	Storage Temperature	-55 ~ +150	$^\circ C$

- \* 1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.  
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Thermal Characteristics $T_a = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Max	Units
$P_C$	Collector Power Dissipation, by $R_{\theta JA}$	625	mW
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3	$^\circ C/W$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	$^\circ C/W$

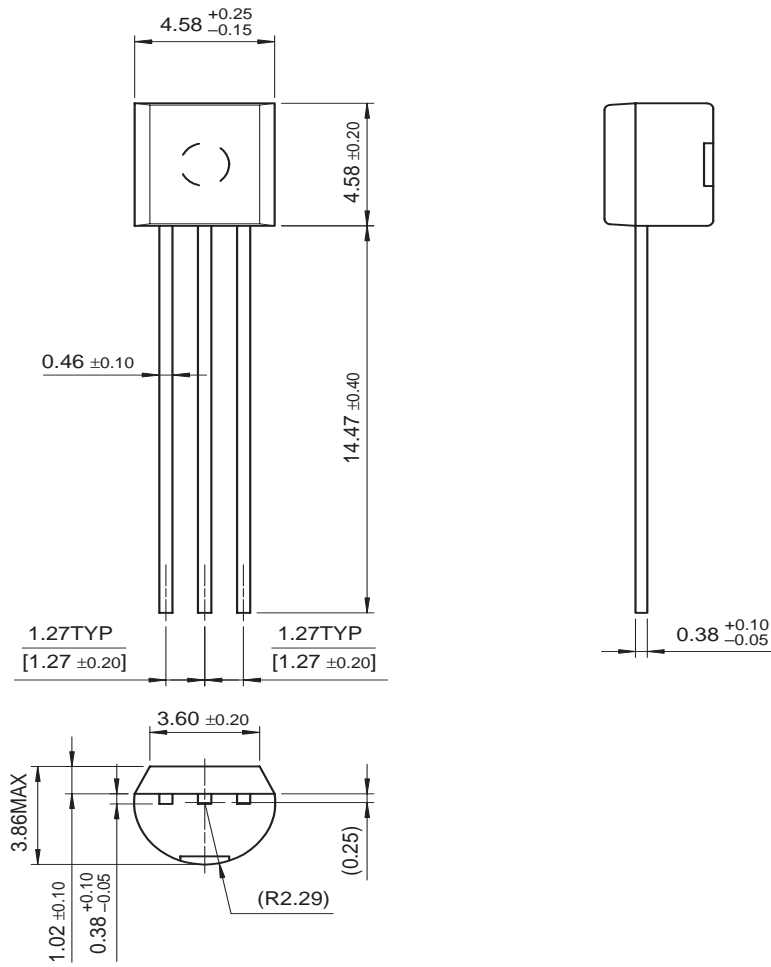
### Electrical Characteristics \* $T_a = 25^\circ C$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10\mu A, I_E = 0$	75			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 10mA, I_B = 0$	40			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu A, I_C = 0$	6.0			V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 60V, I_E = 0$			0.01	$\mu A$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 3.0V, I_C = 0$			10	nA
$h_{FE}$	DC Current Gain	$V_{CE} = 10V, I_C = 0.1mA,$ $V_{CE} = 10V, I_C = 1mA,$ $V_{CE} = 10V, I_C = 10mA,$ $V_{CE} = 10V, I_C = 150mA,$ $V_{CE} = 10V, I_C = 500mA,$	35 50 75 100 40		300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 150mA, I_B = 15mA$ $I_C = 500mA, I_B = 50mA$			0.3 1	V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 150mA, I_B = 15mA$ $I_C = 500mA, I_B = 50mA$		0.6	1.2 2.0	V V
$f_T$	Current Gain Bandwidth Product	$I_C = 20mA, V_{CE} = 20V, f = 100MHz$	300			MHz
$C_{obo}$	Output Capacitance	$V_{CB} = 10V, I_E = 0, f = 1.0MHz$			8	pF
$t_{ON}$	Turn On Time	$V_{CC} = 30V, I_C = 150mA,$ $I_{B1} = 15mA, V_{BE(off)} = 0.5V$			35	ns
$t_{OFF}$	Turn Off Time	$V_{CC} = 30V, I_C = 150mA,$ $I_{B1} = I_{B1} = 15mA$			285	ns
NF	Noise Figure	$I_C = 100\mu A, V_{CE} = 10V,$ $R_S = 1K\Omega, f = 1.0KHz$			4	dB

\* DC Item are tested by Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$

# Package Dimensions

## TO-92



Dimensions in Millimeters

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