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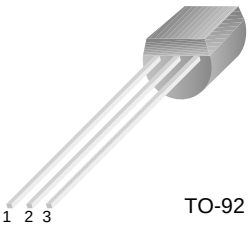
FAIRCHILD SEMICONDUCTOR®

July 2006

KSP2222A
NPN General Purpose Amplifier

Features

- Collector-Emitter Voltage: V_{CEO}= 40V
- Collector Power Dissipation: P_C (max)=625mW
- Available as PN2222A



TO-92

1 2 3

1. Emitter 2. Base 3. Collector

Absolute Maximum Ratings * T_a = 25°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	°C
T_{stg}	Storage Temperature	-55 ~ +150	°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°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	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	°C/W

Electrical Characteristics * T_a = 25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 10μA, 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 = 10μA, I_C = 0	6.0			V
I_{CBO}	Collector Cutoff Current	V_{CB} = 60V, I_E = 0			0.01	μA
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 = 100μA, V_{CE}= 10V, R_S= 1KΩ , f = 1.0KHz			4	dB

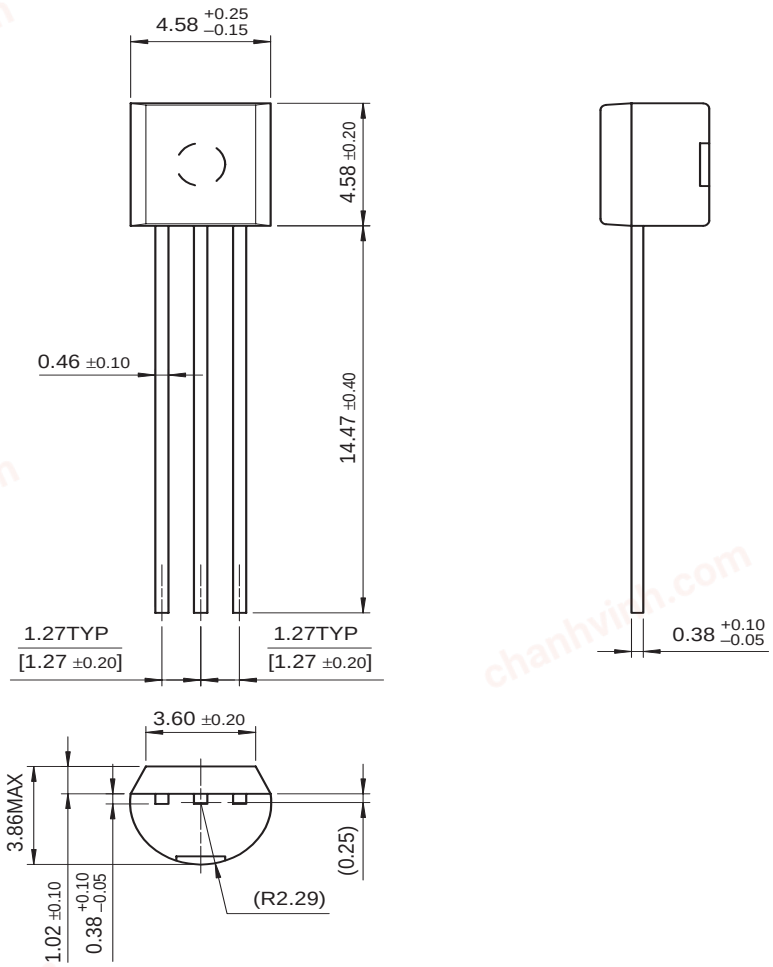
* DC Item are tested by Pulse Test : Pulse Width≤300us, Duty Cycle≤2%

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Package Dimensions

TO-92



Dimensions in Millimeters

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FASTr™	MicroPak™	QT Optoelectronics™	TinyPWM™	
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