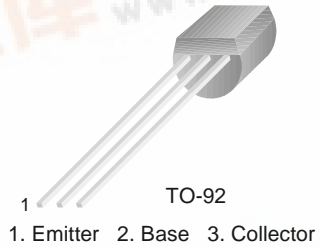


**FAIRCHILD**  
SEMICONDUCTOR®

## KSP8098/8099

### Amplifier Transistor

- Collector-Emitter Voltage:  $V_{CE0}$  = KSP8098: 60V  
KSP8099: 80V
- Collector Power Dissipation:  $P_C$  (max)=625mW
- Suffix “-C” means Center Collector (1. Emitter 2. Collector 3. Base)



### NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage		
	: KSP8098	60	V
	: KSP8099	80	V
$V_{CE0}$	Collector-Emitter Voltage		
	: KSP8098	60	V
	: KSP8099	80	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current	500	mA
$P_C$	Collector Power Dissipation	625	mW
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C=100\mu\text{A}, I_E=0$			
	: KSP8098		60		V
	: KSP8099		80		V
$BV_{CE0}$	* Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}, I_B=0$			
	: KSP8098		60		V
	: KSP8099		80		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=10\mu\text{A}, I_C=0$	6		V
$I_{CBO}$	Collector Cut-off Current				
	: KSP8098	$V_{CB}=60\text{V}, I_E=0$		100	nA
	: KSP8099	$V_{CB}=80\text{V}, I_E=0$		100	nA
$I_{CEO}$	Collector Cut-off Current	$V_{CE}=60\text{V}, I_B=0$		100	nA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=6\text{V}, I_C=0$		100	nA
$h_{FE}$	DC Current Gain	$V_{CE}=5\text{V}, I_C=1\text{mA}$	100	300	
		$V_{CE}=5\text{V}, I_C=10\text{mA}$	100		
		$V_{CE}=5\text{V}, I_C=100\text{mA}$	75		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=100\text{mA}, I_B=5\text{mA}$		0.4	V
		$I_C=100\text{mA}, I_B=10\text{mA}$		0.3	V
$V_{BE(on)}$	* Base-Emitter On Voltage				
	: KSP8098	$V_{CE}=5\text{V}, I_C=1\text{mA}$	0.5	0.7	V
	: KSP8099	$V_{CE}=5\text{V}, I_C=10\text{mA}$	0.6	0.8	V
$f_T$	Current Gain Bandwidth Product	$V_{CE}=5\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$	150		MHz
$C_{ob}$	Output Capacitance	$V_{CB}=5\text{V}, I_E=0$ $f=1\text{MHz}$		6	pF

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



# Typical Characteristics

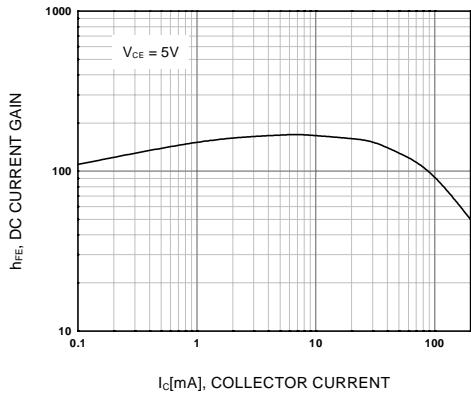


Figure 1. DC current Gain

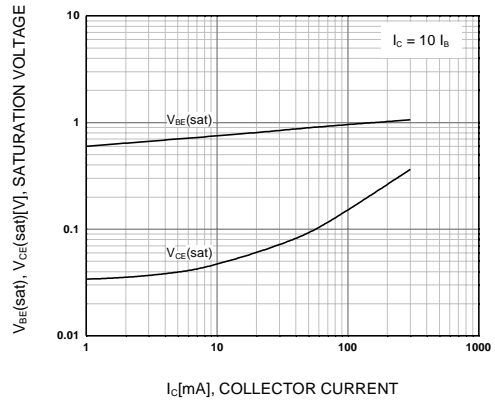


Figure 2. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

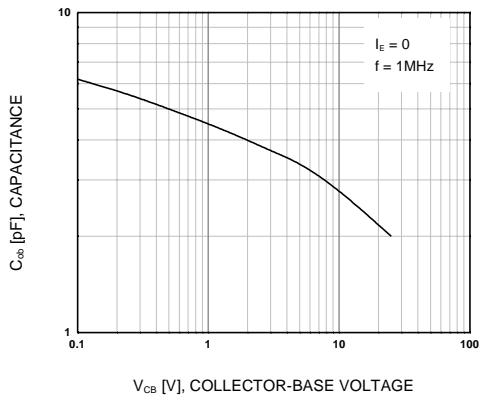


Figure 3. Output Capacitance

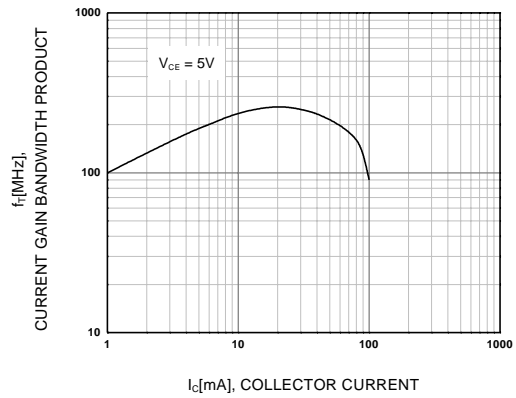
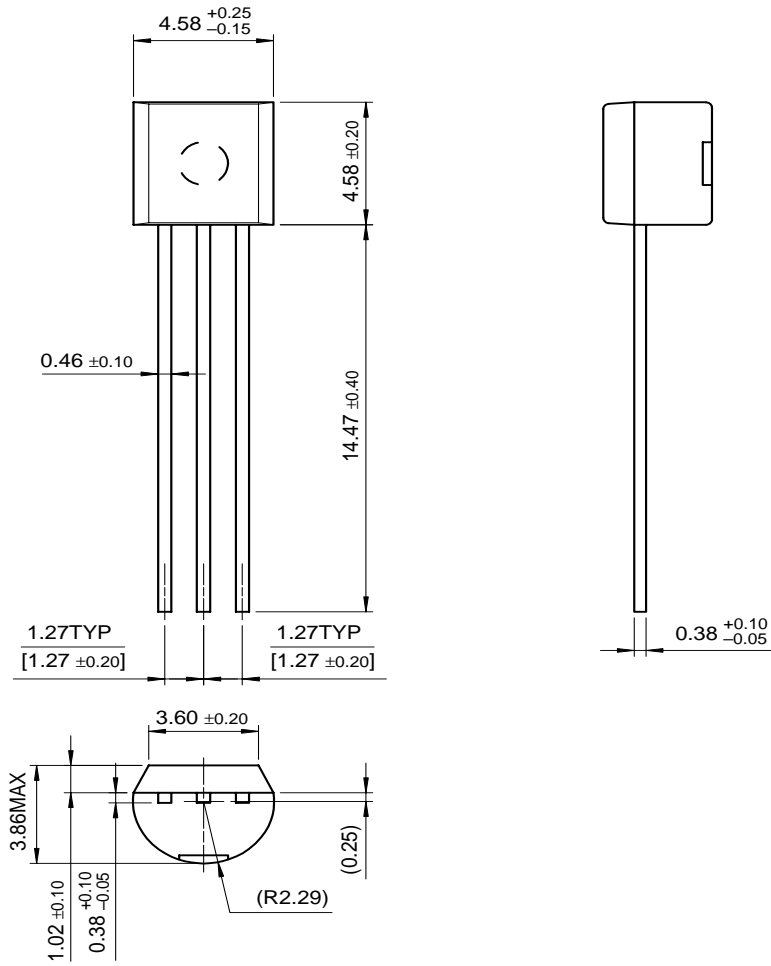


Figure 4. Current Gain Bandwidth Product

# Package Dimensions

## TO-92

KSP8098/8099



Dimensions in Millimeters

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## PRODUCT STATUS DEFINITIONS

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