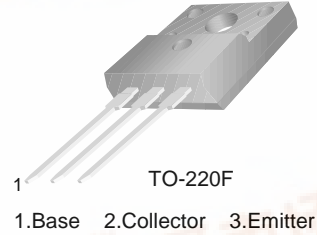


**FAIRCHILD**  
SEMICONDUCTOR™

## KSB1098

### Low Frequency Power Amplifier

- Low Speed Switchng Industrial Use
- Complement to KSD1589



### PNP Silicon Darlington Transistor

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	- 100	V
$V_{CEO}$	Collector-Emitter Voltage	- 100	V
$V_{EBO}$	Emitter-Base Voltage	- 7	V
$I_C$	Collector Current (DC)	- 5	A
$I_{CP}$	*Collector Current (Pulse)	- 8	A
$I_B$	Base Current	- 0.5	A
$P_C$	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	2	W
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	20	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

\*  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 10\%$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = - 100\text{V}, I_E = 0$			- 1	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = - 5\text{V}, I_C = 0$			- 3	mA
$h_{FE1}$ $h_{FE2}$	* DC Current Gain	$V_{CE} = - 2\text{V}, I_C = - 3\text{A}$ $V_{CE} = - 2\text{V}, I_C = - 5\text{A}$	2000 500		15K	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = - 3\text{A}, I_B = - 3\text{mA}$			- 1.5	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = - 3\text{A}, I_B = - 3\text{mA}$			- 2	V
$t_{ON}$	Turn ON Time	$V_{CC} = - 50\text{V}, I_C = - 3\text{A}$		0.5		$\mu\text{s}$
$t_{STG}$	Storage Time	$I_{B1} = - I_{B2} = - 3\text{mA}$		1		$\mu\text{s}$
$t_F$	Fall Time	$R_L = 17\Omega$		1		$\mu\text{s}$

\* Pulse Test:  $PW \leq 350\mu\text{s}$ , Duty Cycle  $\leq 2\%$  Pulsed

### $h_{FE}$ Classification

Classification	R	O	Y
$h_{FE1}$	2000 ~ 5000	3000 ~ 7000	5000 ~ 15000



# Typical Characteristics

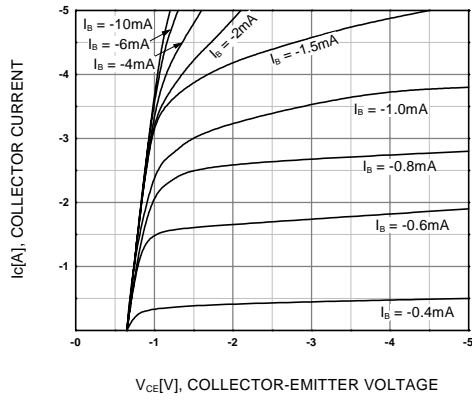


Figure 1. DC current Gain

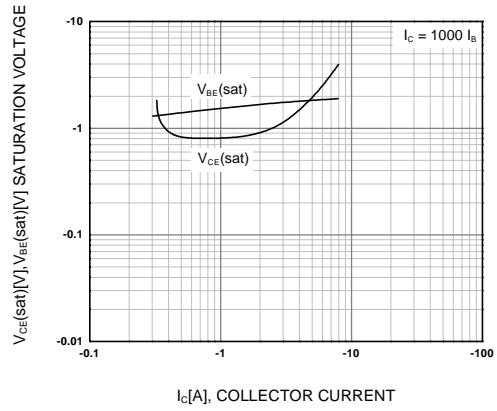


Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

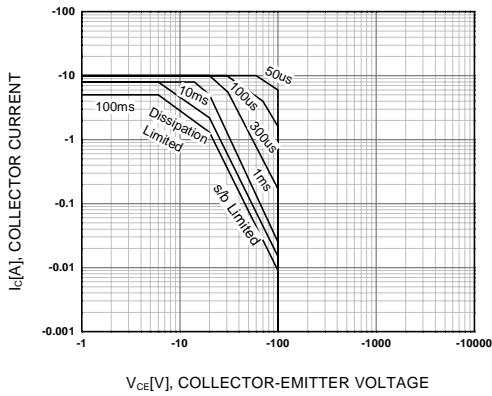


Figure 3. Safe Operating Area

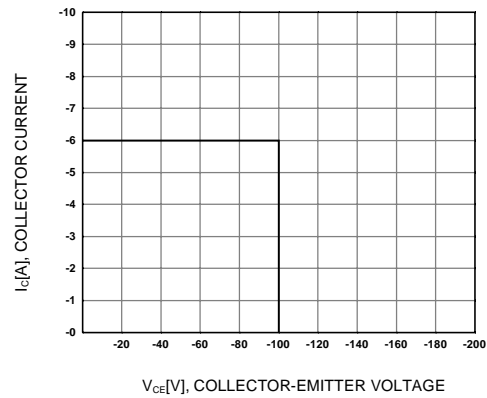


Figure 4. Reverse Bias Safe Operating Area

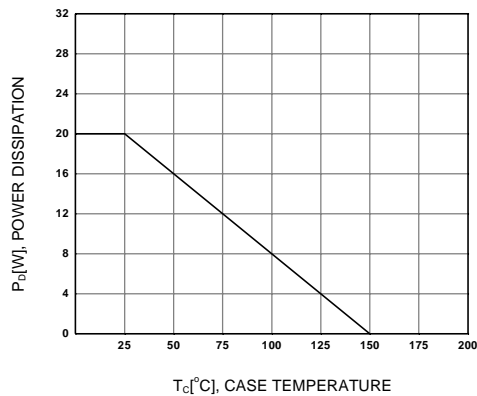
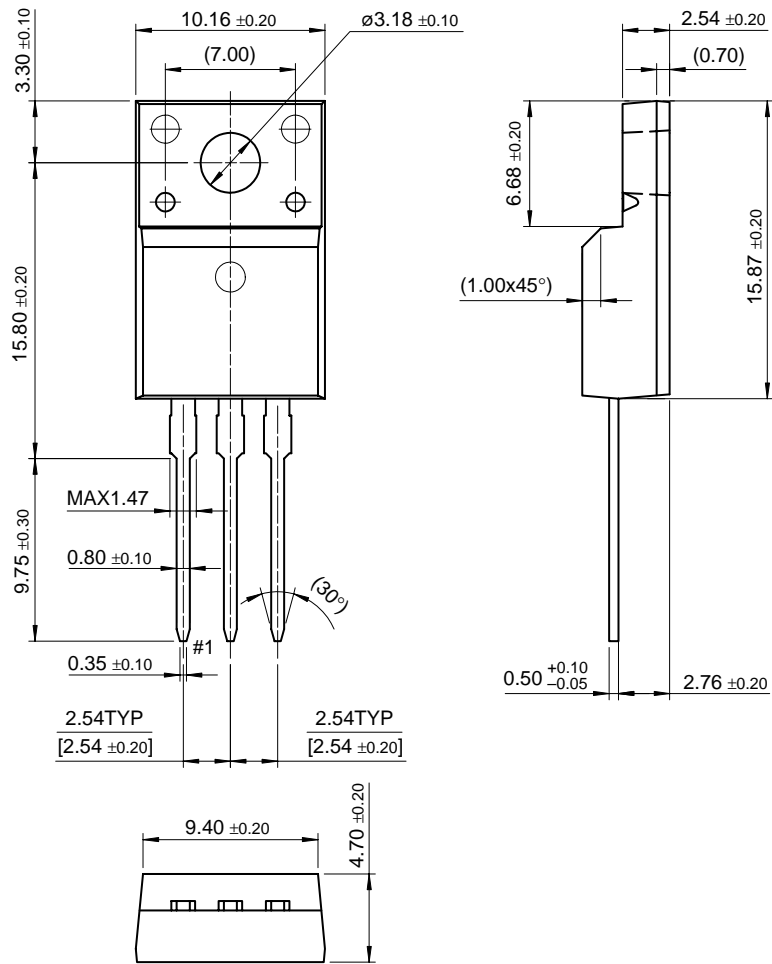


Figure 5. Power Derating

# Package Dimensions

KSB1098

## TO-220F



Dimensions in Millimeters

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CROSSVOLT™	POPT™	UHC™
E <sup>2</sup> CMOS™	PowerTrench®	VCX™
FACT™	QFET™	
FACT Quiet Series™	QST™	
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