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## KSA931

### Low Frequency Amplifier & Medium Speed Switching

- Complement to KSC2331
- Collector-Base Voltage :  $V_{CBO} = -80V$
- Collector Power Dissipation :  $P_C = 1W$



### PNP Epitaxial Silicon Transistor

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

Symbol	Parameter	Ratings	Units
$V_{CBO}$	Collector-Base Voltage	-80	V
$V_{CEO}$	Collector-Emitter Voltage	-60	V
$V_{EBO}$	Emitter-Base Voltage	-8	V
$I_C$	Collector Current	-700	mA
$P_C$	Collector Power Dissipation	1	W
$T_J$	Junction Temperature	150	$^\circ C$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ C$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -100\mu A, I_E = 0$	-80			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -10mA, I_B = 0$	-60			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -100\mu A, I_C = 0$	-8			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -60V, I_E = 0$			-0.1	$\mu A$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = -5V, I_C = 0$			-0.1	$\mu A$
$h_{FE}$	* DC Current Gain	$V_{CE} = -2V, I_C = -50mA$	40		240	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = -500mA, I_B = -50mA$		-0.3	-0.7	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = -500mA, I_B = -50mA$		-0.9	-1.2	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -10V, I_C = -50mA$		100		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -10V, I_E = 0, f = 1MHz$		13		pF

\* Pulse Test:  $PW \leq 350\mu s$ , Duty cycle  $\leq 2\%$

#### $h_{FE}$ Classification

Classification	R	O	Y
$h_{FE}$	40 ~ 80	70 ~ 140	120 ~ 240

# Typical Characteristics

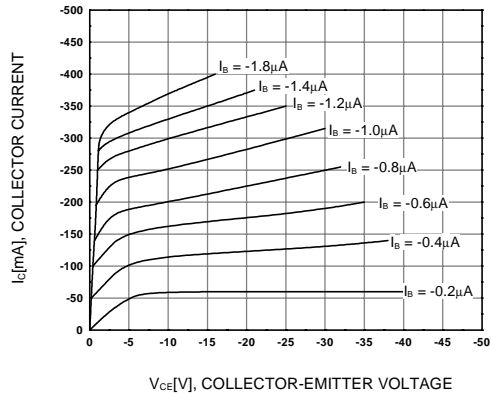


Figure 1. Static Characteristic

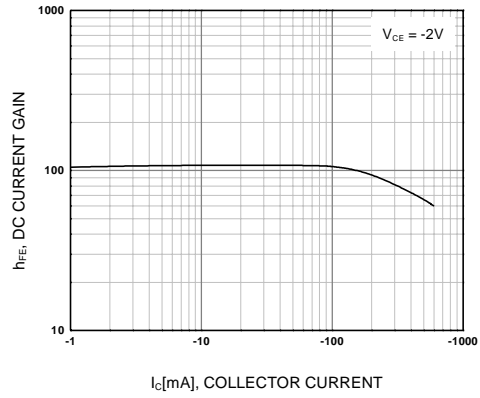


Figure 2. DC current Gain

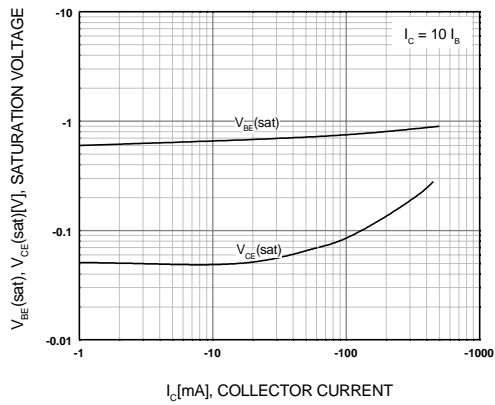


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emmitter Saturation Voltage

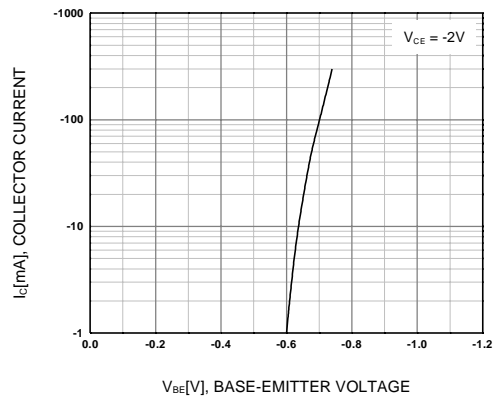


Figure 4. Base-Emitter On Voltage

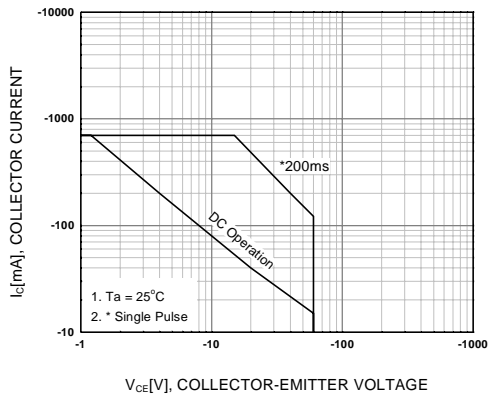


Figure 5. Safe Operating Area

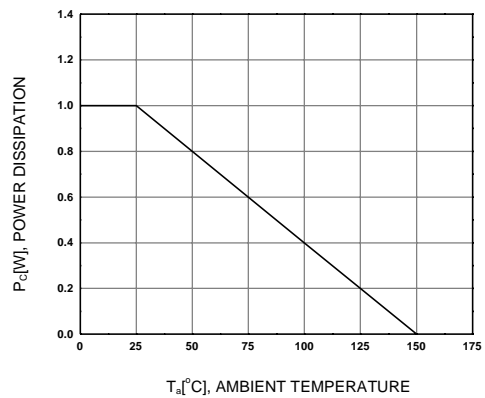
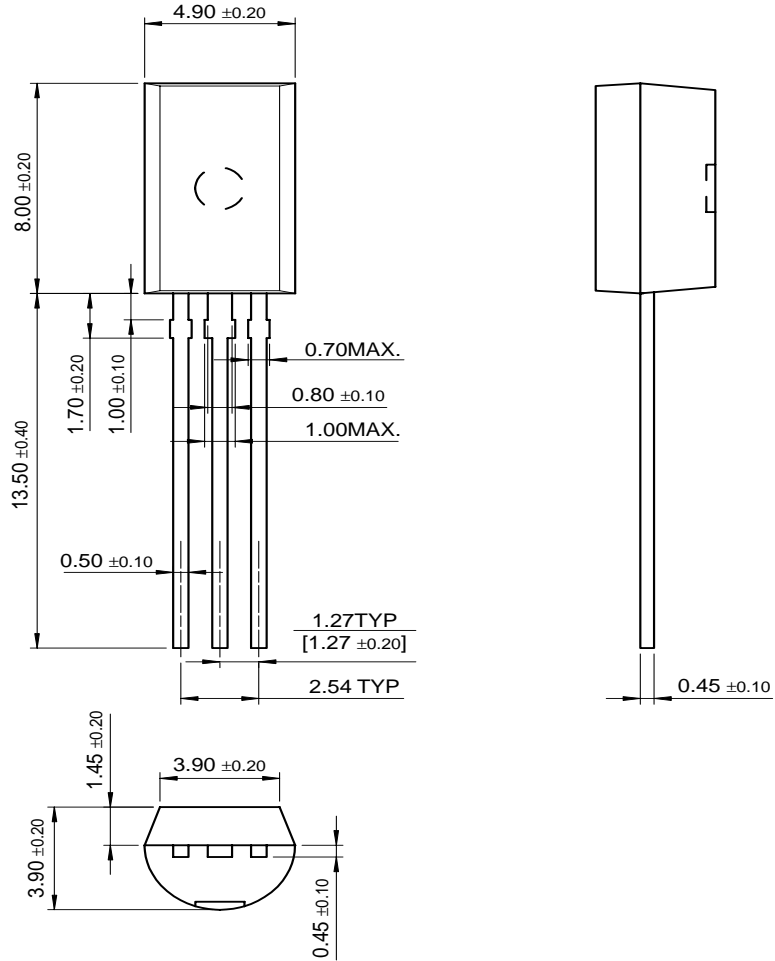


Figure 6. Power Derating

# Package Dimensions

## TO-92L



Dimensions in Millimeters

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