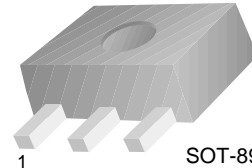


# KSB1121

KSB1121

## High Current Driver Applications

- Low Collector-Emitter Saturation Voltage
- Large Current Capacity and Wide SOA
- Fast Switching Speed
- Complement to KSD1621



SOT-89  
1. Base 2. Collector 3. Emitter

## PNP Epitaxial Planar Silicon Transistor

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

Symbol	Parameter	Ratings	Units
$V_{CBO}$	Collector-Base Voltage	-30	V
$V_{CEO}$	Collector-Emitter Voltage	-25	V
$V_{EBO}$	Emitter-Base Voltage	-6	V
$I_C$	Collector Current	-2	A
$P_C$	Collector Power Dissipation	500	mW
$P_C^*$		1.3	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

\* Mounted on Ceramic Board (250mm<sup>2</sup> x 0.8mm)

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

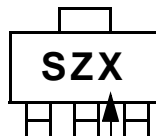
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C = -10\mu\text{A}, I_E = 0$	-30			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = -1\text{mA}, I_B = 0$	-25			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E = -10\mu\text{A}, I_C = 0$	-6			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -20\text{V}, I_E = 0$			-100	nA
$I_{EBO}$	Emitter Cut-off Current	$V_{BE} = -4\text{V}, I_C = 0$			-100	nA
$h_{FE1}$ $h_{FE2}$	DC Current Gain	$V_{CE} = -2\text{V}, I_C = -0.1\text{A}$ $V_{CE} = -2\text{V}, I_C = -1.5\text{A}$	100 65		560	
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C = -1.5\text{A}, I_B = -75\text{mA}$		-0.35	-0.6	V
$V_{BE}(\text{sat})$	Base-Emitter Saturation Voltage	$I_C = -1.5\text{A}, I_B = -75\text{mA}$		-0.85	-1.2	V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = -10\text{V}, I_C = -50\text{mA}$		150		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		32		pF
$t_{ON}$	* Turn On Time	$V_{CC} = -12\text{V}, V_{BE} = -5\text{V}$ $I_{B1} = -I_{B2} = -25\text{mA}$ $I_C = -500\text{mA}, R_L = 24\Omega$		60		ns
$t_{STG}$	* Storage Time			350		ns
$t_F$	* Fall time			25		ns

\* Pulse Test:  $PW \leq 20\mu\text{s}$ , Duty Cycle  $\leq 1\%$

## $h_{FE}$ Classification

Classification	R	S	T	U
$h_{FE1}$	100 ~ 200	140 ~ 280	200 ~ 400	280 ~ 560

Marking



$h_{FE}$  Grade

# Typical Characteristics

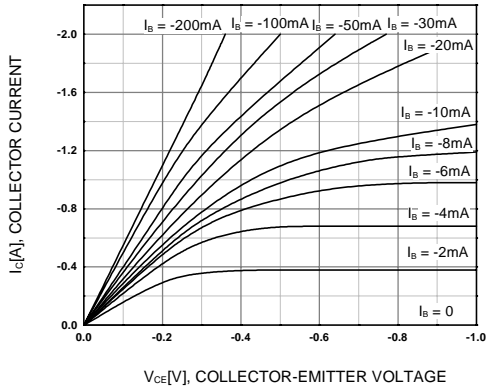


Figure 1. Static Characteristic

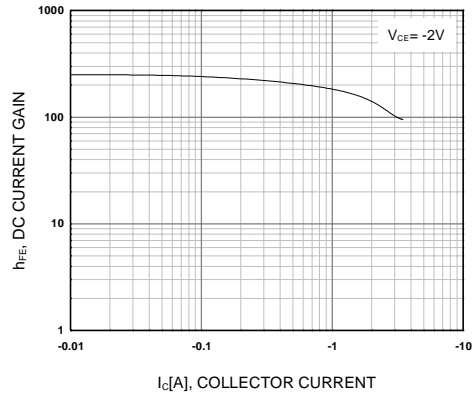


Figure 2. DC current Gain

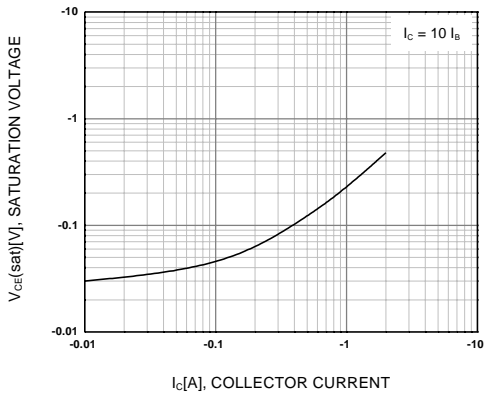


Figure 3. Collector-Emitter Saturation Voltage

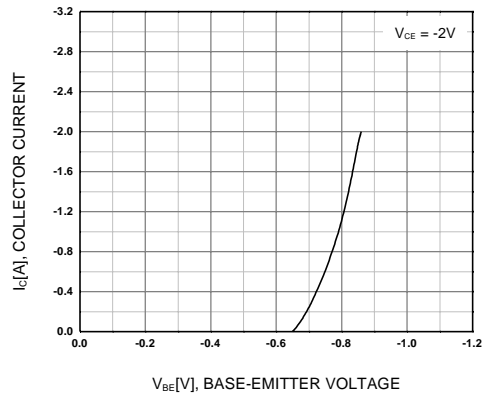


Figure 4. Base-Emitter On Voltage

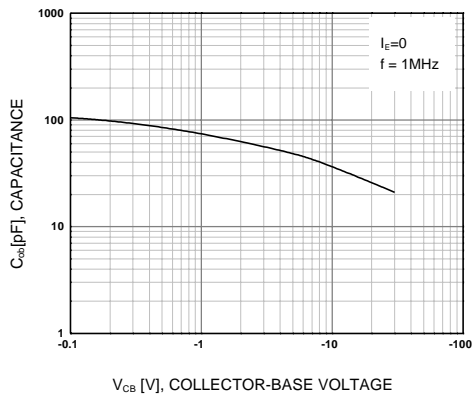


Figure 5. Collector Output Capacitance

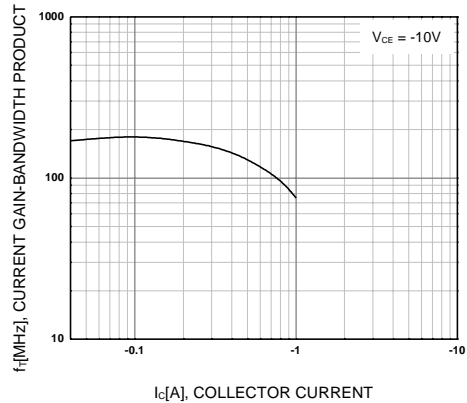
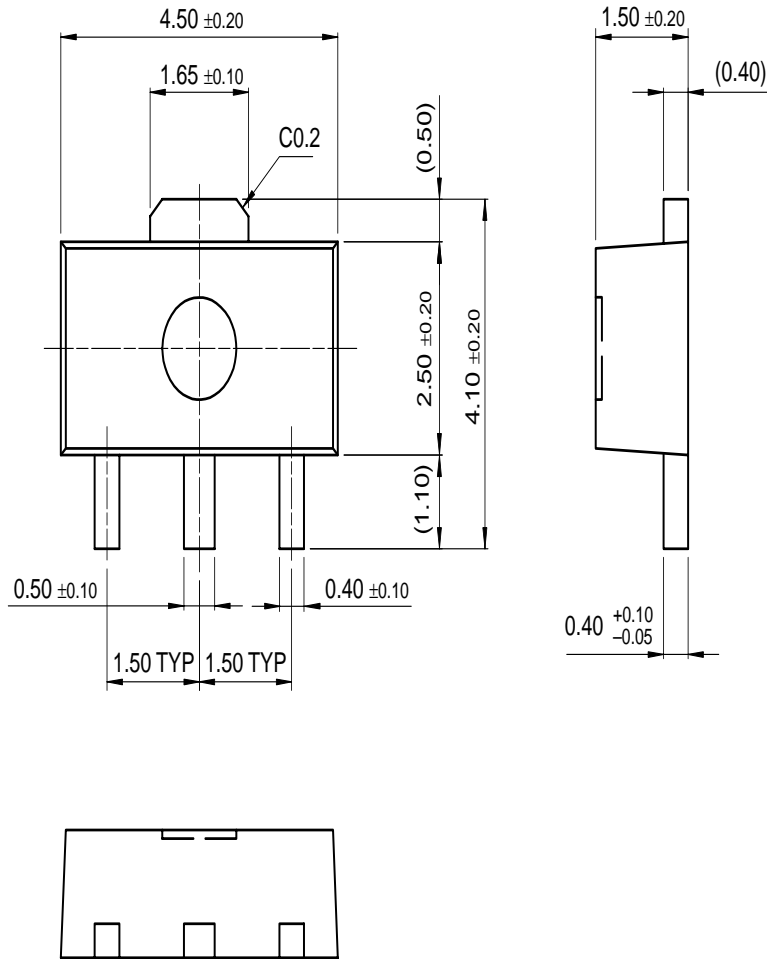


Figure 6. Current Gain Bandwidth Product

# Package Dimensions

## SOT-89



Dimensions in Millimeters

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EcoSPARK™	ISOPLANAR™	QS™	TruTranslation™
E <sup>2</sup> CMOS™	LittleFET™	QT Optoelectronics™	TinyLogic™
EnSigna™	MicroFET™	Quiet Series™	UHC™
FACT™	MICROWIRE™	SLIENT SWITCHER®	UltraFET®
FACT Quiet Series™	OPTOLOGIC™	SMART START™	VCX™

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