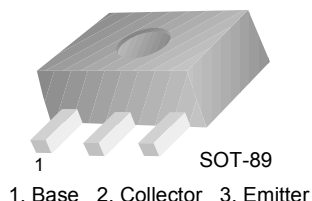


KSB1121

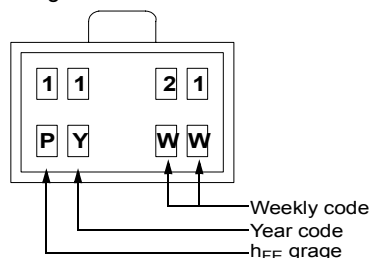
PNP Epitaxial Planar Silicon Transistor

High Current Driver Applications

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



Marking



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 P_C^*	Collector Power Dissipation	500 1.3	mW W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

* Mounted on Ceramic Board (250mm² 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

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
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

 h_{FE} Classification

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

Package Marking and Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
1121	KSB1121	SOT-89	13"	--	4,000

Typical Performance Characteristics

Figure 1. Static Characteristic

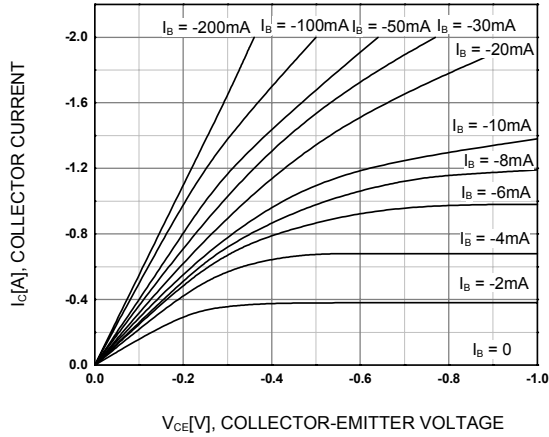


Figure 2. DC Current Gain

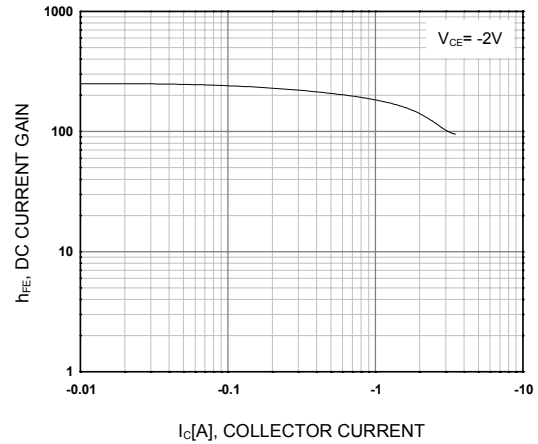


Figure 3. Collector-Emitter Saturation Voltage

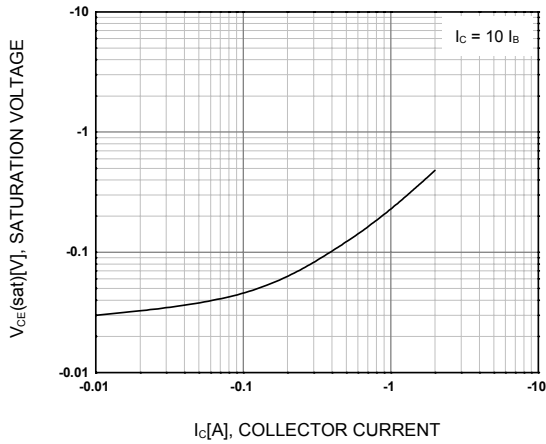


Figure 4. Base-Emitter On Voltage

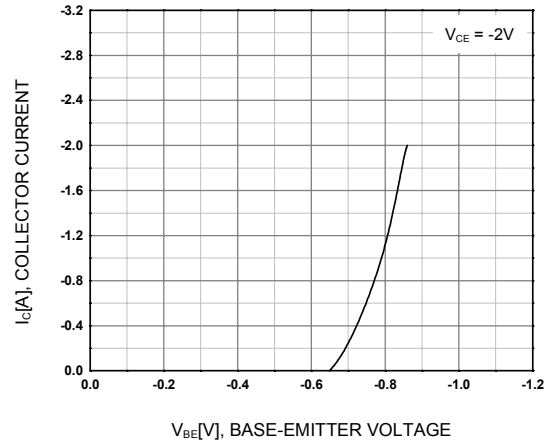


Figure 5. Collector Output Capacitance

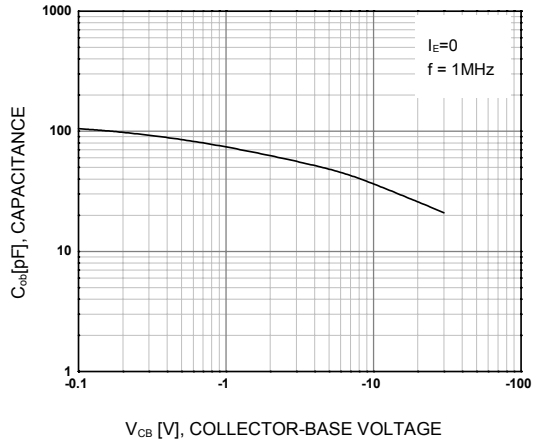
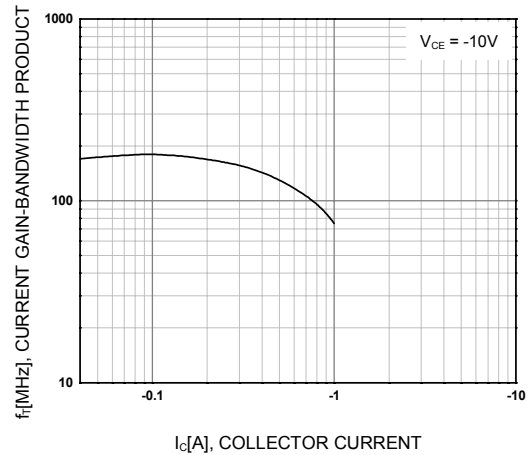


Figure 6. Current Gain Bandwidth Product



Technical drawing of a mechanical part showing three views: front, side, and top.

Front View Dimensions:

- Overall width: 4.50 ± 0.20
- Top feature width: 1.65 ± 0.10
- Top feature height: 0.50 (indicated as (0.50))
- Central hole diameter: 2.50 ± 0.20
- Overall height: 4.10 ± 0.20
- Bottom feature height: 1.10 (indicated as (1.10))
- Bottom feature width (left): 0.50 ± 0.10
- Bottom feature width (right): 0.40 ± 0.10
- Bottom feature spacing (left): 1.50 TYP
- Bottom feature spacing (right): 1.50 TYP
- Surface finish: $C0.2$

Side View Dimensions:

- Overall width: 1.50 ± 0.20
- Top feature width: 0.40 (indicated as (0.40))
- Bottom feature width: 0.40 with tolerances $+0.10$ and -0.05

Top View:

- Shows the top surface of the part, including the central hole and the bottom features.

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