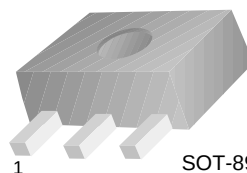


KSD1621

KSD1621

High Current Driver Applications

- Low Collector-Emitter Saturation Voltage
- Large Current Capacity and Wide SOA
- Fast Switching Speed
- Complement to KSB1121



1. Base 2. Collector 3. Emitter

NPN Epitaxial 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 (250mm²x0.8mm)

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

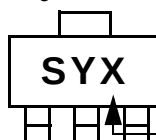
Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C=10\mu\text{A}$, $I_E=0$	30			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}$, $I_B=0$	25			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E=10\mu\text{A}$, $I_C=0$	6			V
I_{CBO}	Collector 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	$I_C=1.5\text{A}$, $I_B=75\text{mA}$		0.18	0.4	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	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$		19		pF
t_{ON}	* Turn On Time	$V_{CC}=12\text{V}$, $V_{BE}=5\text{V}$ $I_{B1}=-I_{B2}=25\text{mA}$ $I_C=0.5\text{A}$, $R_L=25\Omega$		60		ns
t_{STG}	* Storage Time			500		ns
t_F	* Fall Time			25		ns

* Pulse Width=20 μs , Duty Cycle $\leq$ 1%

h_{FE} Classification

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

Marking



h_{FE} grade

Typical Characteristics

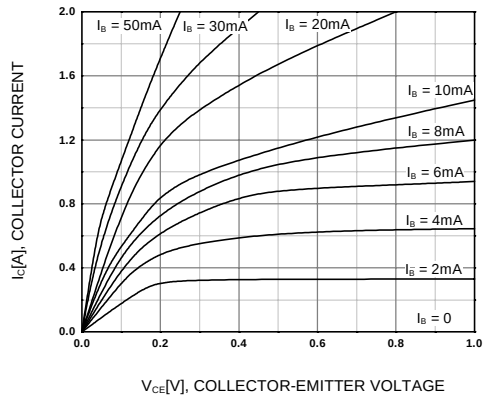


Figure 1. Static Characteristic

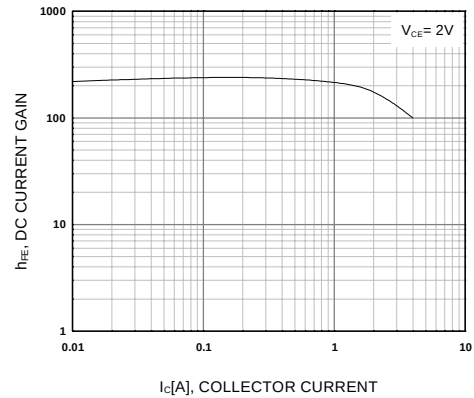


Figure 2. DC current Gain

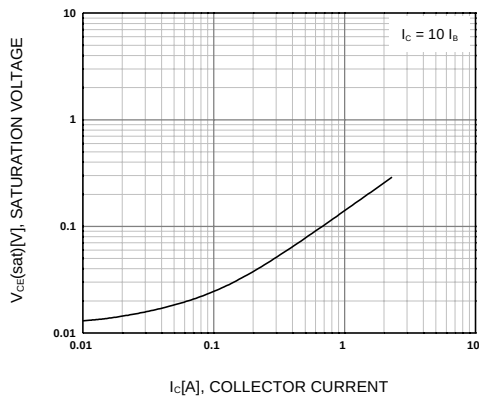


Figure 3. Collector-Emitter Saturation Voltage

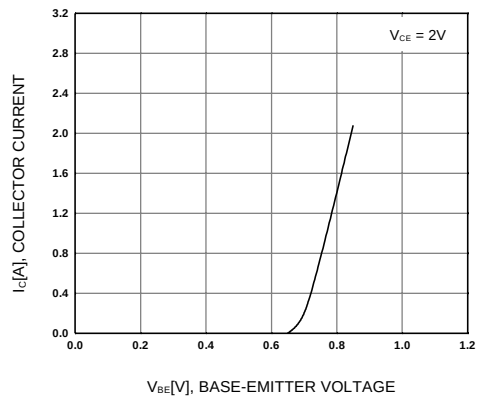


Figure 4. Base-Emitter On Voltage

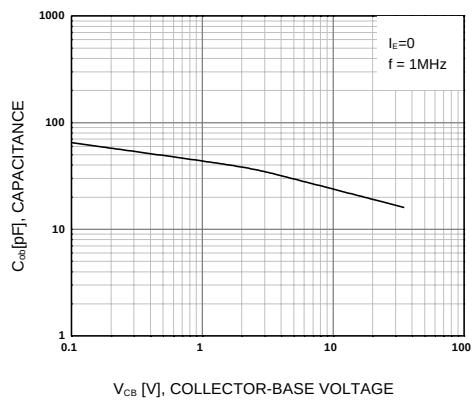


Figure 5. Collector Output Capacitance

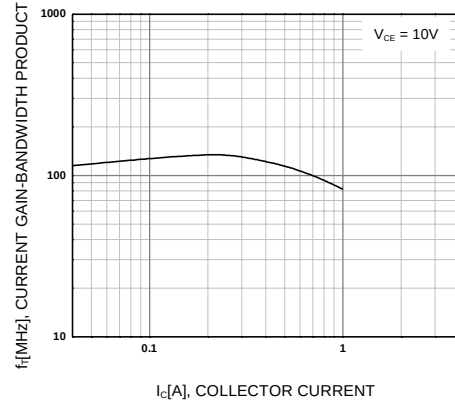


Figure 6. Current Gain Bandwidth Product

Typical Characteristics (Continued)

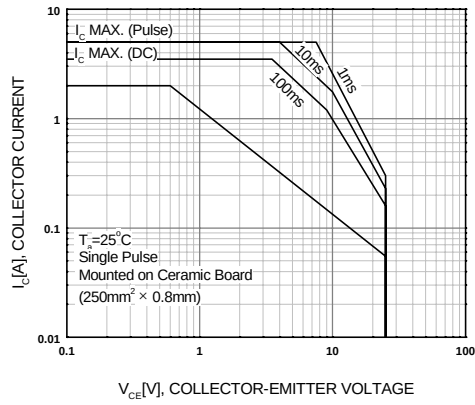


Figure 7. Safe Operating Area

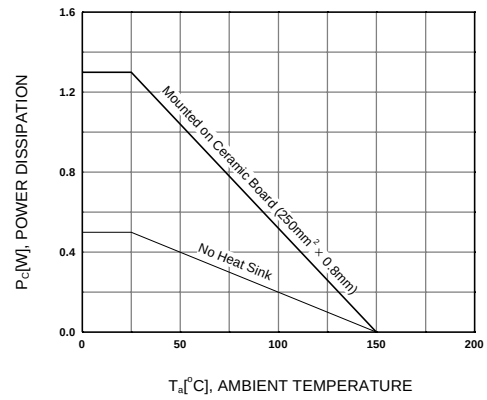
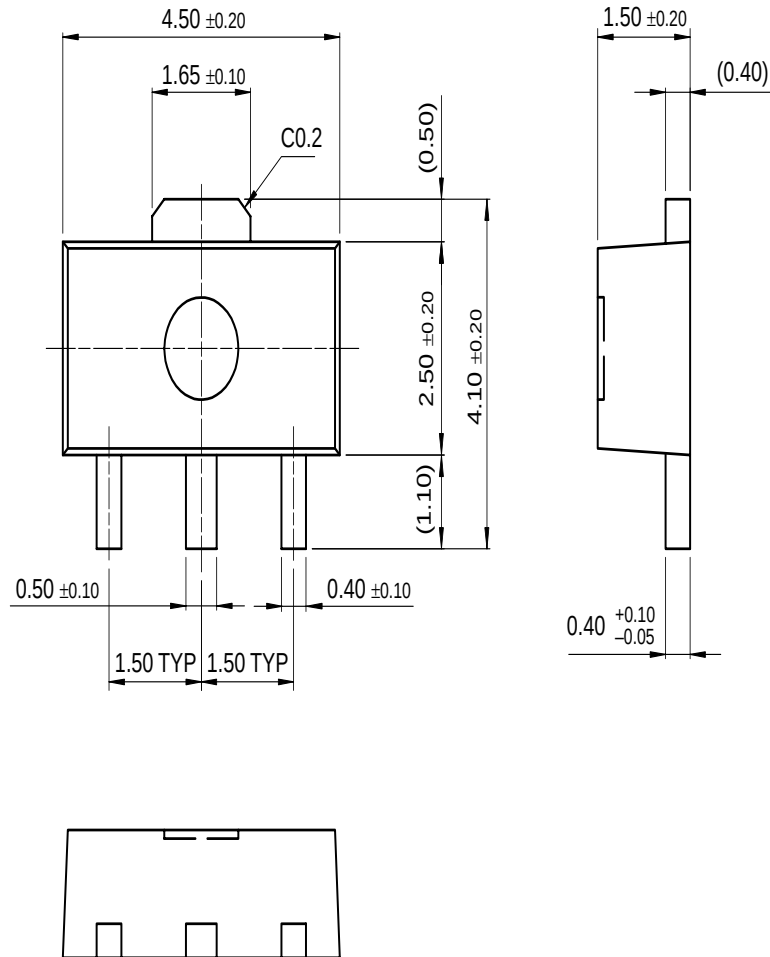


Figure 8. Power Derating

Package Dimensions

SOT-89



Dimensions in Millimeters

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