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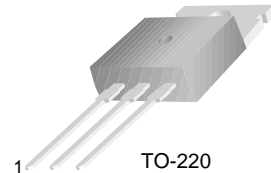
sales@integrated-circuit.com



KSB601

Low Frequency Power Amplifier

- Medium Speed Switching Industrial Use
- Complement to KSD560



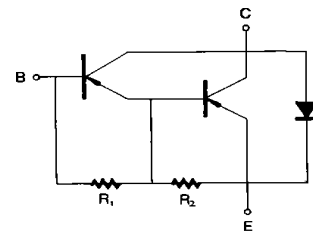
TO-220
1.Base 2.Collector 3.Emitter

PNP Epitaxial Silicon Darlington Transistor

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

Symbol	Parameter	Value	Units
V_{CB0}	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 ($T_a=25^\circ\text{C}$)	1.5	W
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	30	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

* $PW \leq 10\text{ms}$, Duty Cycle $\leq 50\%$



$R_1 = 3\text{k}\Omega$
 $R_2 = 300\Omega$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$V_{CEO(sus)}$	Collector-Emitter Sustaining Voltage	$I_C = -3A, I_{B1} = -3mA,$ $L = 1mH$	- 100			V
$V_{CEX(sus)1}$	Collector-Emitter Sustaining Voltage	$I_C = -3A, I_{B1} = -I_{B2} = -3mA$ $V_{BE(off)} = 5V, L = 180\mu H$ Clamped	- 100			V
$V_{CEX(sus)2}$	Collector-Emitter Sustaining Voltage	$I_C = -6A, I_{B1} = -12mA$ $I_{B2} = 3mA, V_{BE(off)} = 5V$ $L = 180\mu H, \text{Clamped}$	- 100			V
I_{CBO}	Collector Cut-off Current	$V_{CB} = -100V, I_E = 0$			-10	μA
I_{CER}	Collector Cut-off Current	$V_{CE} = -100V, R_{BE} = 51\Omega$ $T_C = 125^\circ C$			-1	mA
I_{CEX1}	Collector Cut-off Current	$V_{CE} = -100V, V_{BE(off)} = 1.5V$			-10	μA
I_{CEX2}	Collector Cut-off Current	$V_{CE} = -100V, V_{BE(off)} = 1.5V$ $T_C = 125^\circ C$			-1	mA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = -5V, I_C = 0$			-3	mA
h_{FE1} h_{FE2}	*DC Current Gain	$V_{CE} = -2V, I_C = -3A$ $V_{CE} = -2V, I_C = -5A$	2000 500		15000	
$V_{CE(sat)}$	* Collector-Emitter Saturation Voltage	$I_C = -3A, I_B = -3mA$			-1.5	V
$V_{BE(sat)}$	* Base-Emitter Saturation Voltage	$I_C = -3A, I_B = -3mA$			-2	V
t_{ON}	Turn ON Time	$V_{CC} = -50V, I_C = -3A$		0.5		μs
t_S	Storage	$I_{B1} = -I_{B2} = -3mA$		1		μs
t_F	Fall time	$R_L = 17\Omega$		1		μs

 * Pulse Test: $PW \leq 350\mu s$, Duty Cycle $\leq 2\%$
 h_{FE} Classification

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

Typical Characteristics

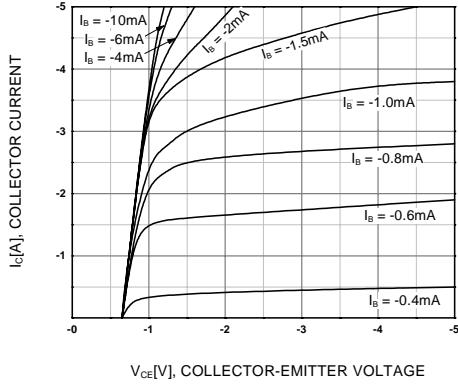


Figure 1. Static Characteristic

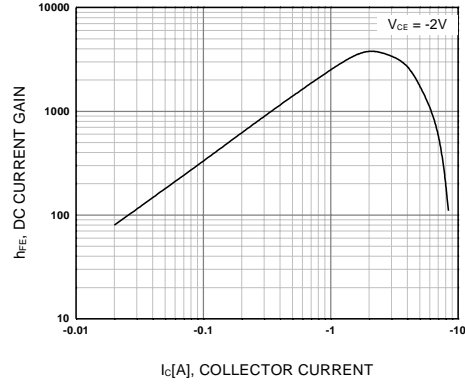
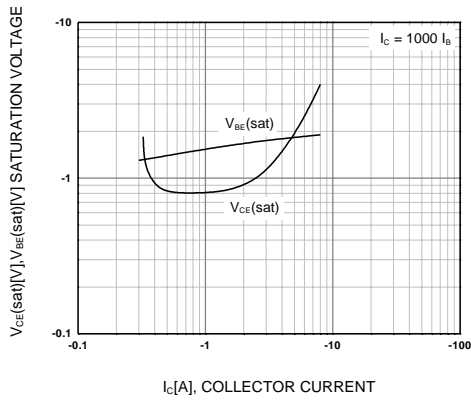


Figure 2. DC current Gain



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

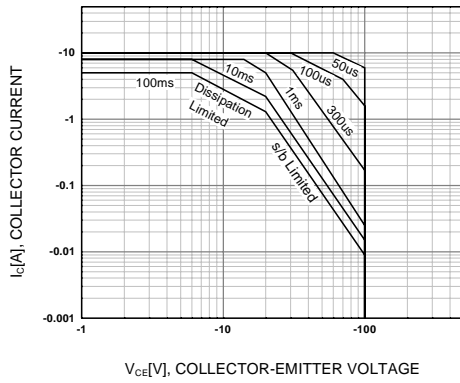


Figure 4. Safe Operating Area

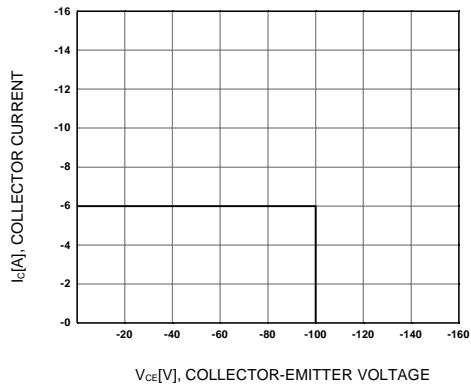


Figure 5. Reverse Bias Safe Operating Areas

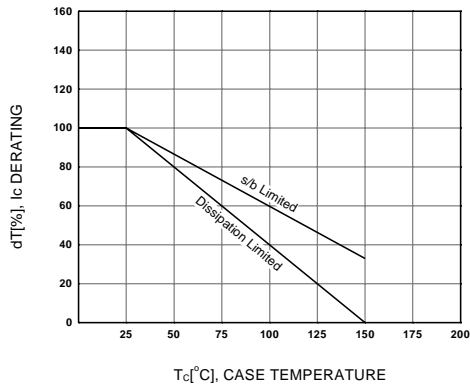


Figure 6. Derating Curve of Safe Operating Areas

Typical Characteristics (Continued)

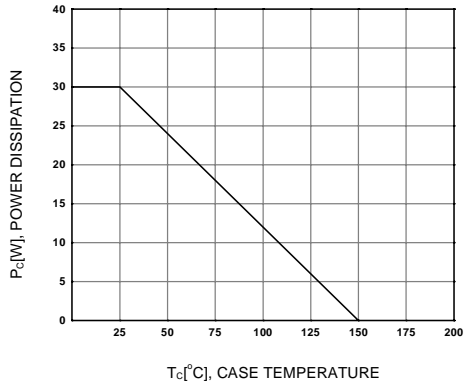
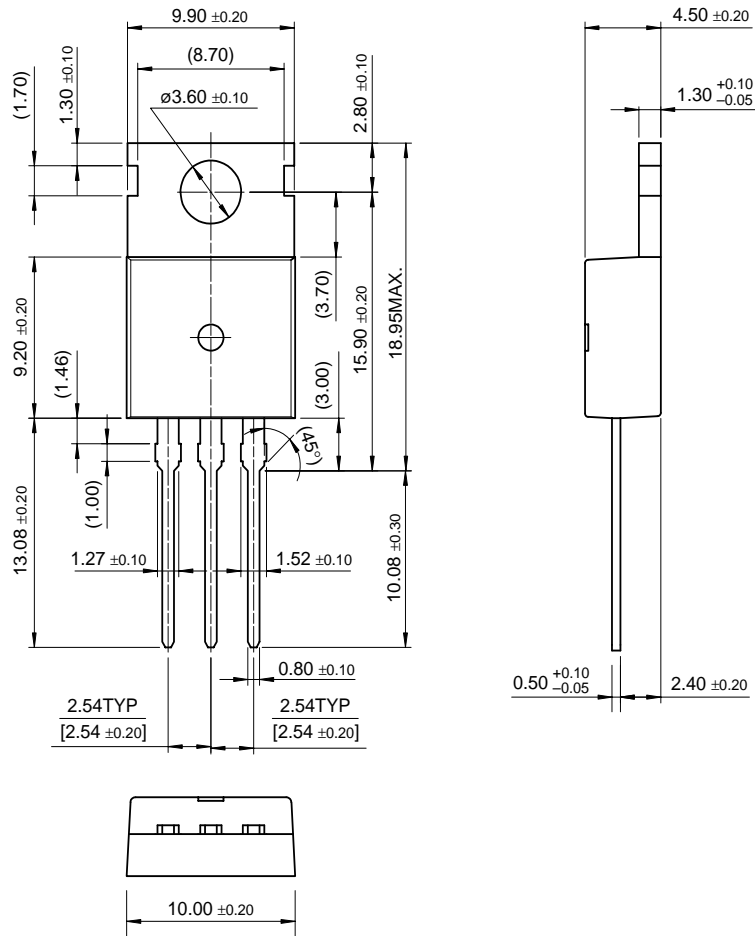


Figure 7. Power Derating

Package Dimensions

TO-220



Dimensions in Millimeters

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E ² CMOS™	PowerTrench®	VCX™
FACT™	QFET™	
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