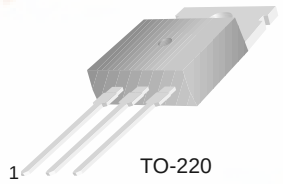
FAIRCHILD SEMICONDUCTOR TM

KSB601

Low Frequency Power Amplifier

- Medium Speed Switching Industrial Use
- Complement to KSD560



TO-220

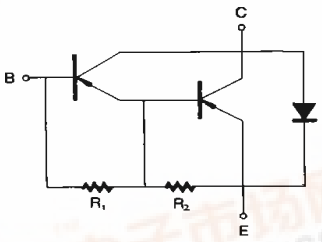
1.Base 2.Collector 3.Emitter

PNP Epitaxial Silicon Darlington Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	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°C)	1.5	W
P_C	Collector Dissipation (T_C=25°C)	30	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 55 ~ 150	°C

* PW≤10ms, Duty Cycle≤50%



R_1≒3kΩ
R_2≒300Ω

Electrical Characteristics T_C=25°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 =180μH 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 = 180uH, 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} = 51Ω T_C= 125°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°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 I_{B1} = - I_{B2} = - 3mA R_L = 17Ω		0.5		μs
t_S	Storage			1		μs
t_F	Fall time			1		μs

* Pulse Test: PW≤350μs, Duty Cycle≤2%

h_{FE} Classification

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

Typical Characteristics

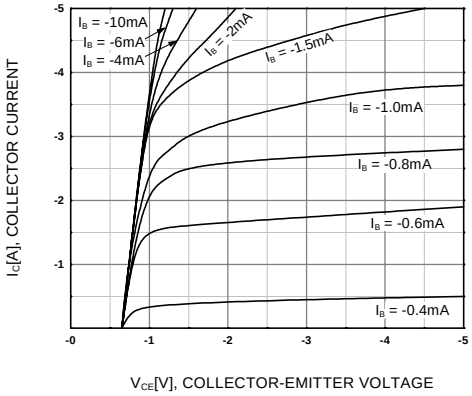


Figure 1. Static Characteristic

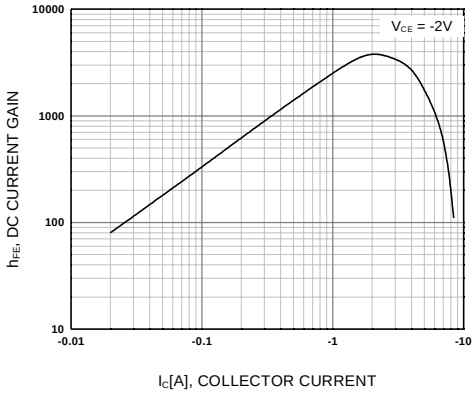


Figure 2. DC current Gain

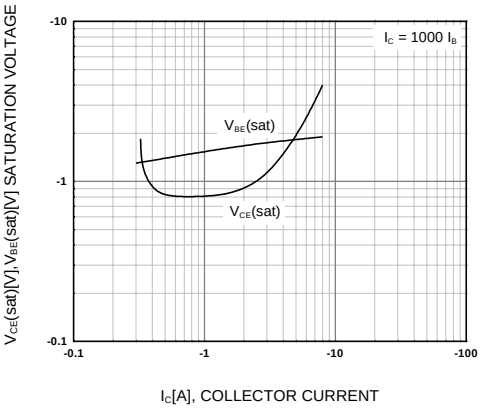


Figure 3. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

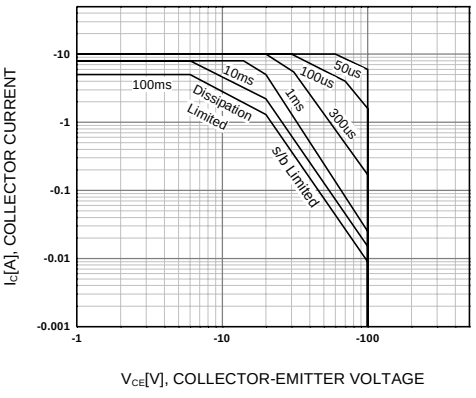


Figure 4. Safe Operating Area

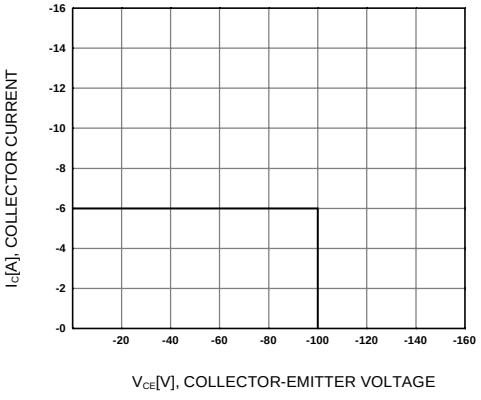


Figure 5. Reverse Bias Safe Operating Areas

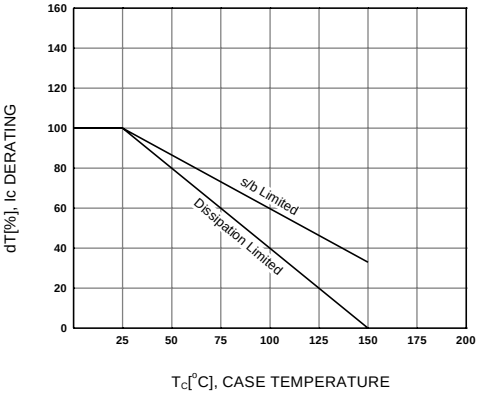


Figure 6. Derating Curve of Safe Operating Areas

Typical Characteristics (Continued)

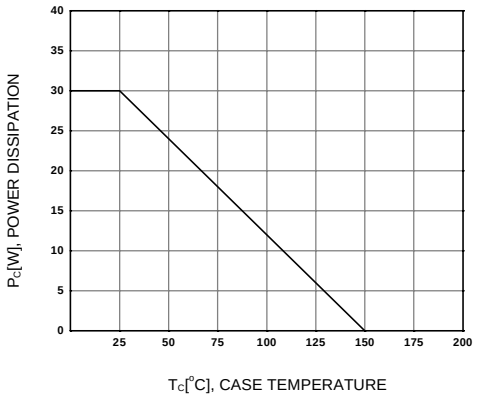
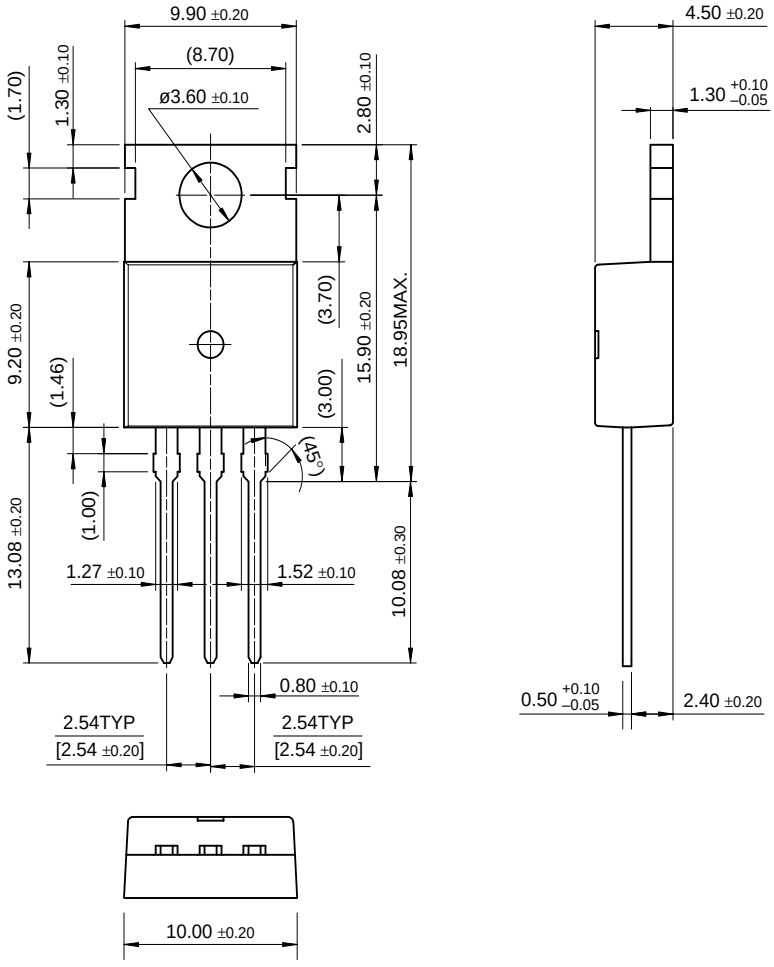


Figure 7. Power Derating

Package Demensions

TO-220



Dimensions in Millimeters

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