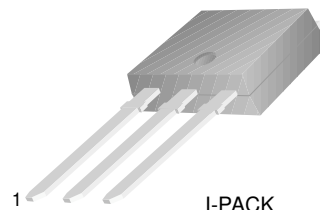


KSD1221

Low Frequency Power Amplifier

- Low Collector-Emitter Saturation Voltage
- Complement to KSB906



I-PACK
1. Base 2. Collector 3. Emitter

NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	60	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current	3	A
I_B	Base Current	0.5	A
P_C	Collector Dissipation ($T_C=25^\circ\text{C}$)	20	W
P_C	Collector Dissipation ($T_a=25^\circ\text{C}$)	1	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	- 55 ~ 150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 50\text{mA}, I_B = 0$	60			V
I_{CBO}	Collector Cut-off Current	$V_{CB} = 60\text{V}, I_E = 0$			100	μA
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 7\text{V}, I_C = 0$			100	μA
h_{FE1} h_{FE2}	DC Current Gain	$V_{CE} = 5\text{V}, I_C = 0.5\text{A}$ $V_{CE} = 5\text{V}, I_C = 3\text{A}$	60 20		300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 3\text{A}, I_B = 0.3\text{A}$		0.4	1	V
$V_{BE(on)}$	Base-Emitter ON Voltage	$I_C = 5\text{A}, I_C = 0.5\text{A}$		0.7	1	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 5\text{V}, I_C = 0.5\text{A}$		3		MHz
C_{ob}	Output Capacitance	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		70		pF
t_{ON}	Turn ON Time	$V_{CC} = 30\text{V}, I_C = 1\text{A}$ $I_{B1} = -I_{B2} = 0.2\text{A}$ $R_L = 30\Omega$		0.8		μs
t_{STG}	Storage Time			1.5		μs
t_F	Fall Time			0.8		μs

h_{FE} Classification

Classification	O	Y	G
h_{FE1}	60 ~ 120	100 ~ 200	150 ~ 300

Typical Characteristics

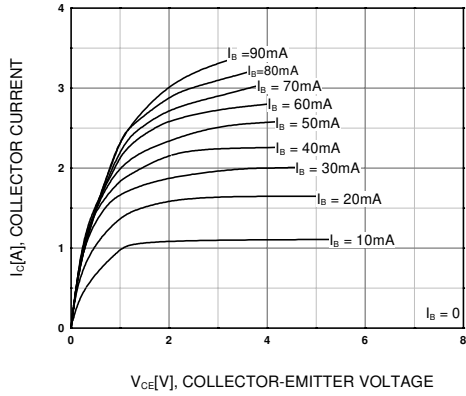


Figure 1. Static Characteristic

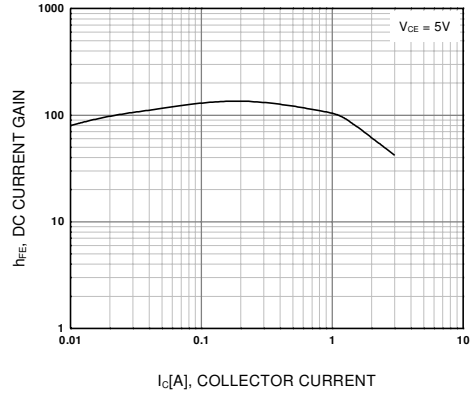


Figure 2. DC current Gain

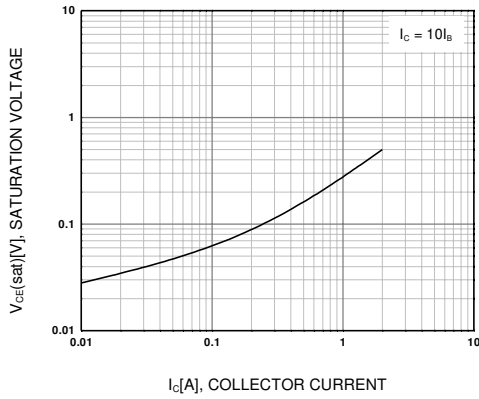


Figure 3. Collector-Emitter Saturation Voltage

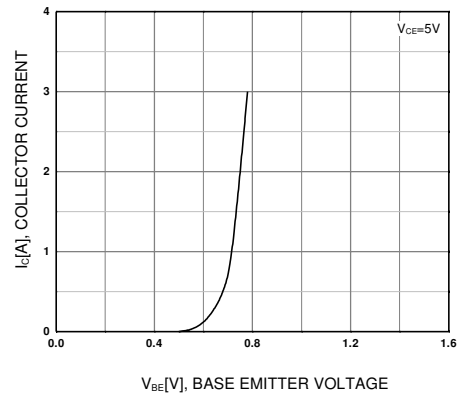


Figure 4. Base-Emitter On Voltage

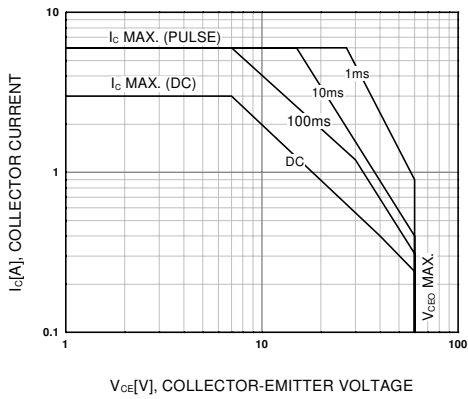


Figure 5. Safe Operating Area

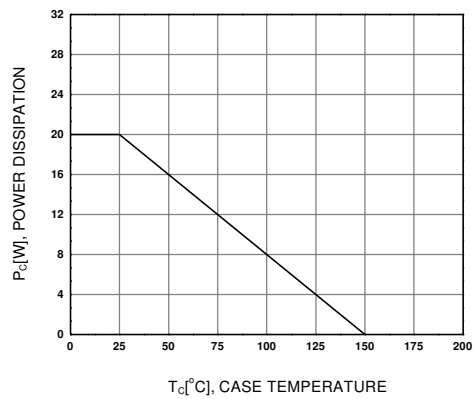
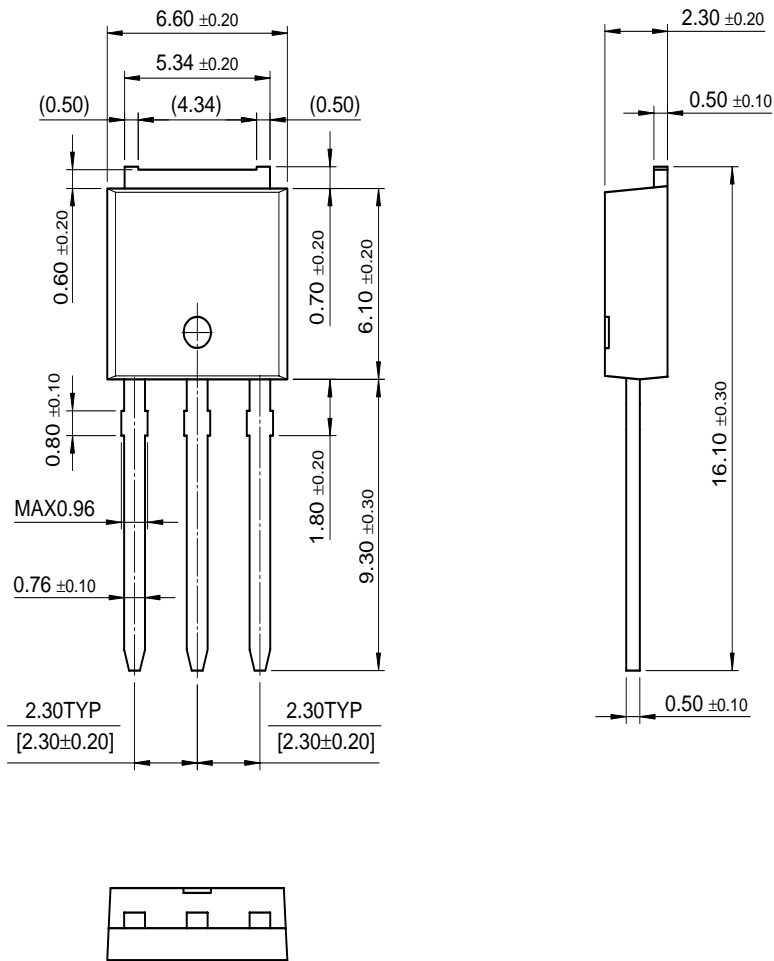


Figure 6. Power Derating

Package Dimensions

I-PAK



Dimensions in Millimeters

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