

### KSD1406

# Low Frequency Power Amplifier • Low Collector-Emitter Saturation Voltage

- Complement to KSB1015



## **NPN Epitaxial Silicon Transistor**

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

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current	3	Α
I <sub>B</sub>	Base Current	0.5	Α
P <sub>C</sub>	Collector Dissipation (T <sub>C</sub> =25°C)	25	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	- 55 ~ 150	°C

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

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Units
BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	$I_C = 50 \text{mA}, I_B = 0$	60			V
I <sub>CBO</sub>	Collector Cut-off Current	$V_{CB} = 60V, I_{E} = 0$			100	μΑ
I <sub>EBO</sub>	Emitter Cut-off Current	$V_{EB} = 7V, I_{C} = 0$			100	μΑ
h <sub>FE1</sub>	DC Current Gain	$V_{CE} = 5V, I_{C} = 0.5A$	60		300	
h <sub>FE2</sub>		$V_{CE} = 5V, I_{C} = 3A$	20			
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage	$I_C = 3A, I_B = 0.3A$		0.4	1	V
V <sub>BE</sub> (on)	Base-Emitter ON Voltage	$V_{CE} = 5V, I_{C} = 0.5A$		0.7	1	V
f <sub>T</sub>	Current Gain Bandwidth Product	$V_{CE} = 5V, I_{C} = 0.5A$		3		MHz
C <sub>ob</sub>	Output Capacitance	V <sub>CB</sub> = 10V, f = 1MHz		70		pF
t <sub>ON</sub>	Turn ON Time	$V_{CC} = 30V, I_{C} = 1A$		0.8		μs
t <sub>STG</sub>	Storage Time	$I_{B1} = -I_{B2} = 0.2A$		1.5		μs
t <sub>F</sub>	Fall Time	$R_L = 30\Omega$		0.8		μs

### h<sub>FE1</sub> Classification

Classification	0	Y	G	
h <sub>FE1</sub>	60 ~ 120	100 ~ 200	150 ~ 300	

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# **Typical Characteristics**

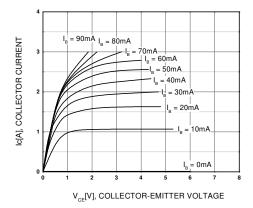


Figure 1. Static Characteristic

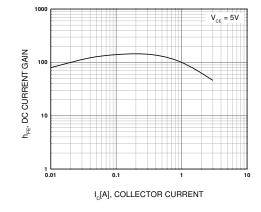


Figure 2. DC current Gain

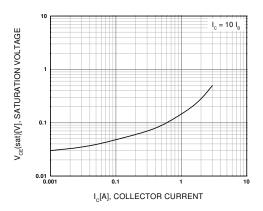


Figure 3. Collector-Emitter Saturation Voltage

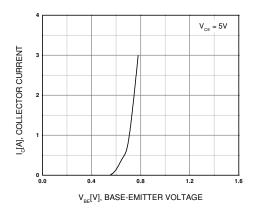


Figure 4. Base-Emitter Voltage

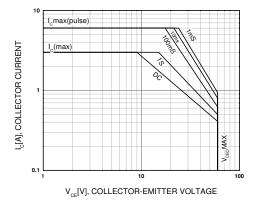


Figure 5. Safe Operating Area

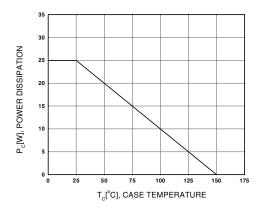
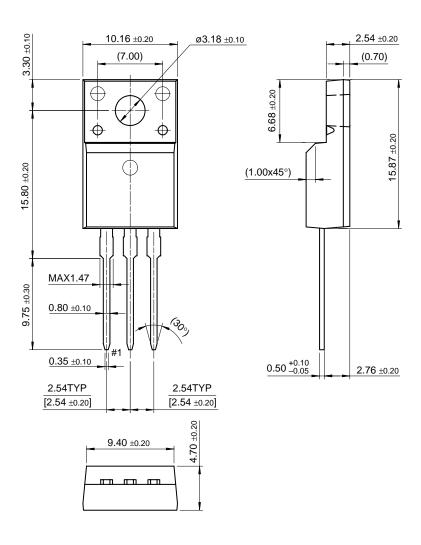


Figure 6. Power Derating

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# **Package Demensions**

# TO-220F



Dimensions in Millimeters

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