

# KSD1588

KSD1588

## Low Frequency Power Amplifier

- Low Speed Switching
- Complement to KSB1097



TO-220F  
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	100	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current (DC)	7	A
$I_{CP}$	*Collector Current (Pulse)	15	A
$I_B$	Base Current	3.5	A
$P_C$	Collector Dissipation ( $T_a=25^\circ\text{C}$ )	2	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	$^\circ\text{C}$

\*  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 10\%$

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

Symbol	Parameter	Test Condition	Min.	Max.	Units
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = 80\text{V}$ , $I_E = 0$		10	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 5\text{V}$ , $I_C = 0$		10	$\mu\text{A}$
$h_{FE1}$	*DC Current Gain	$V_{CE} = 1\text{V}$ , $I_C = 3\text{A}$	40	200	
$h_{FE2}$		$V_{CE} = 1\text{V}$ , $I_C = 5\text{A}$	20		
$V_{CE(sat)}$	*Collector-Emitter Saturation Voltage	$I_C = 5\text{A}$ , $I_B = 0.5\text{A}$		0.5	V
$V_{BE(sat)}$	*Base-Emitter Saturation Voltage	$I_C = 5\text{A}$ , $I_B = 0.5\text{A}$		1.5	V

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

### $h_{FE1}$ Classification

Classification	R	O	Y
$h_{FE1}$	40 ~ 80	80 ~ 120	100 ~ 200

# Typical Characteristics

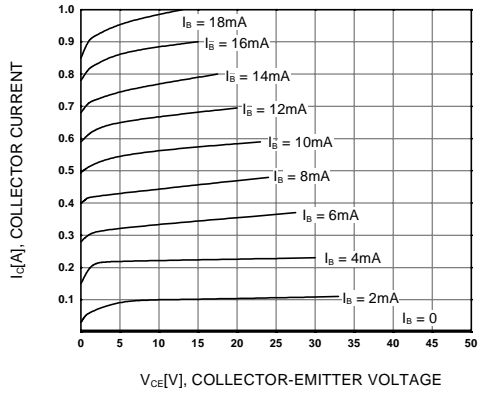


Figure 1. Static Characteristic

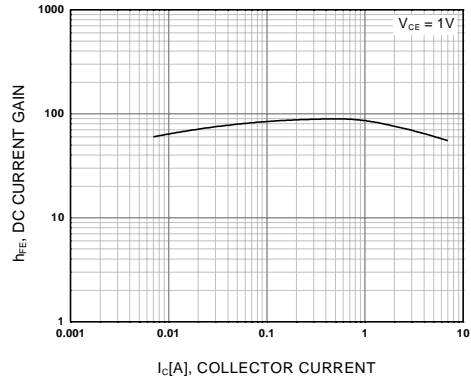


Figure 2. DC current Gain

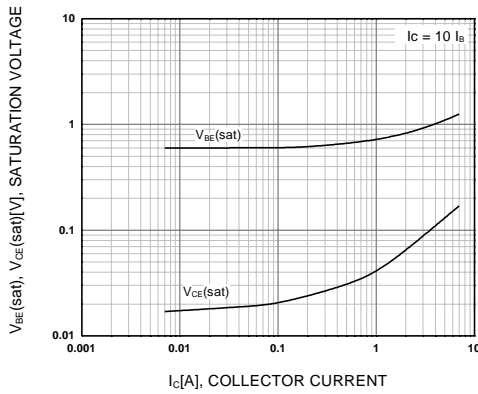


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

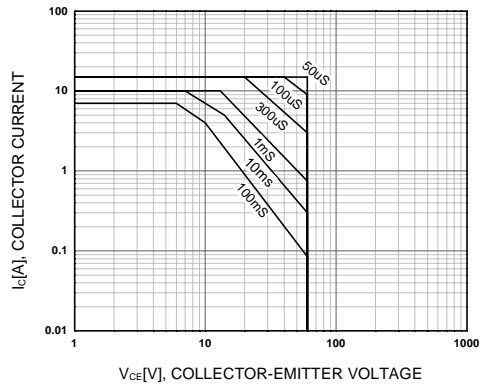


Figure 4. Safe Operating Area

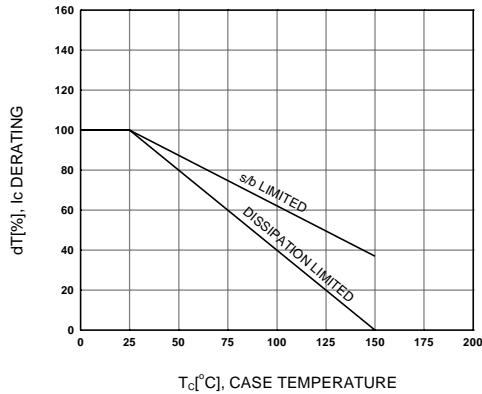


Figure 5. Derating Curve Safe Operating Area

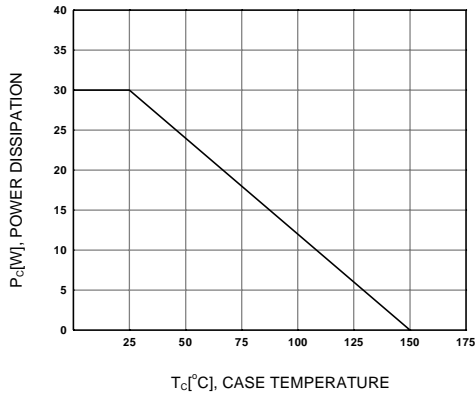
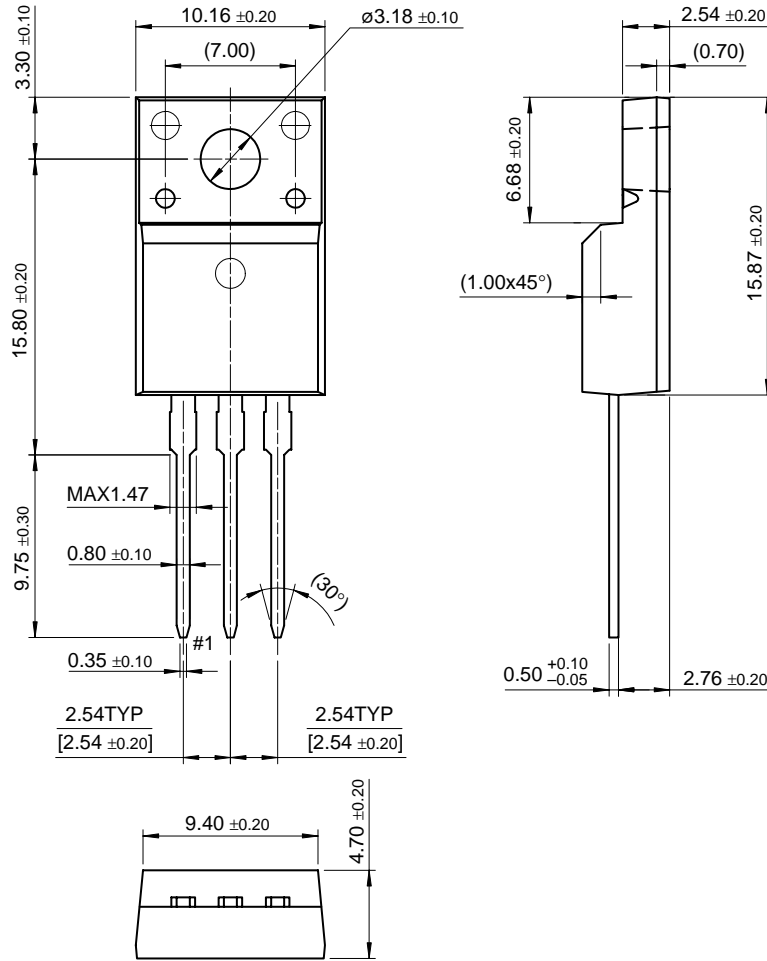


Figure 6. Power Derating

# Package Dimensions

KSD1588

## TO-220F



Dimensions in Millimeters

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