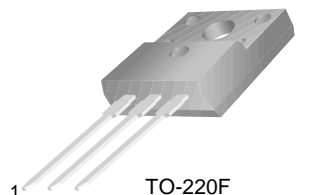


# KSD2058

KSD2058

## Low Frequency Power Amplifier



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	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 ( $T_a=25^\circ\text{C}$ )	1.5	W
$P_C$	Collector Dissipation ( $T_C=25^\circ\text{C}$ )	25	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
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = 60\text{V}, I_E = 0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB} = 7\text{V}, I_C = 0$			1	mA
$V_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 50\text{mA}, I_B = 0$	60			V
$h_{FE}$	DC Current Gain	$V_{CE} = 5\text{V}, I_C = 0.5\text{A}$	8			
$V_{CE}(\text{Sat})$	Collector-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 0.2\text{A}$			1.5	V
$V_{BE}(\text{on})$	Base-Emitter ON Voltage	$V_{CE} = 5\text{V}, I_C = 0.5\text{A}$		3		V
$f_T$	Current Gain Bandwidth Product	$V_{CE} = 5\text{V}, I_C = 0.5\text{A}$			0.4	MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		35		pF
$t_{ON}$	Turn ON Time	$V_{CC} = 30\text{V}, I_C = 2\text{A}$		0.65		$\mu\text{s}$
$t_{STG}$	Storage Time	$I_{B1} = - I_{B2} = 0.2\text{A}$		1.3		$\mu\text{s}$
$t_F$	Fall Time	$R_L = 15\Omega$		0.65		$\mu\text{s}$

### $h_{FE}$ Classification

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

# Typical Characteristics

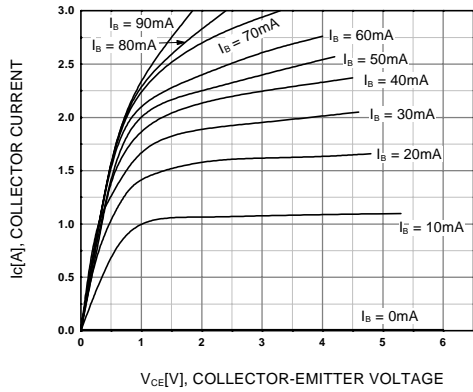


Figure 1. Static Characteristic

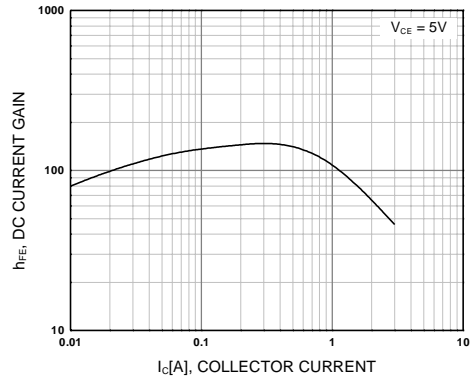


Figure 2. DC current Gain

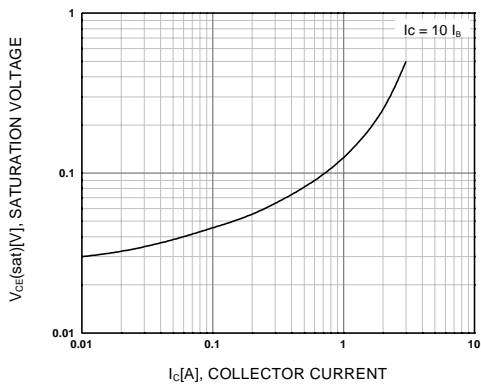


Figure 3. Collector Output Capacitance

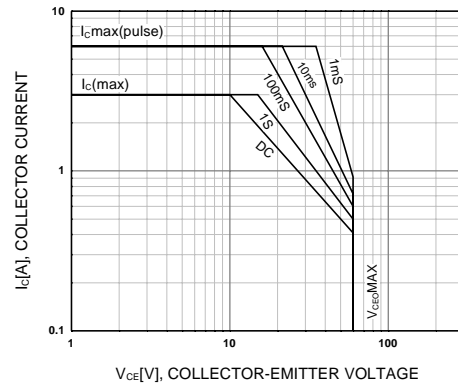


Figure 4. Safe Operating Area

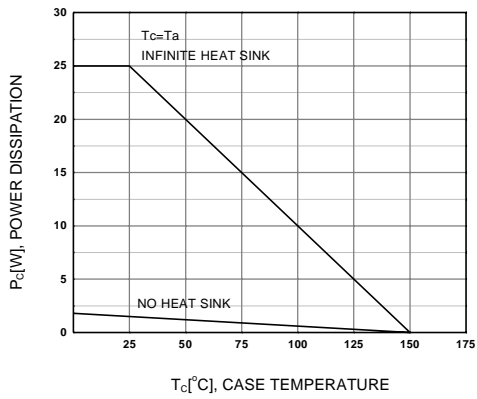


Figure 5. Power Derating

# Package Dimensions

KSD2058

## TO-220F



Dimensions in Millimeters

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E <sup>2</sup> CMOS™	PowerTrench®	VCX™
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