

# KSC838

## FM Radio RF AMP, MIX, CONV, OSC, IF AMP

- High Current Gain Bandwidth Product :  $f_T=250\text{MHz}$  (TYP.)
- Suffix "-C" means Center Collector (1. Emitter 2. Collector 3. Base)



## NPN Epitaxial Silicon Transistor

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

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	35	V
$V_{CEO}$	Collector-Emitter Voltage	30	V
$V_{EBO}$	Emitter-Base Voltage	4	V
$I_C$	Collector Current	30	mA
$P_C$	Collector Power Dissipation	250	mW
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	$I_C=100\mu\text{A}$ , $I_E=0$	35			V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=5\text{mA}$ , $I_B=0$	30			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=10\mu\text{A}$ , $I_C=0$	4			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=30\text{V}$ , $I_E=0$			0.1	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=4\text{V}$ , $I_C=0$			0.1	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$V_{CE}=12\text{V}$ , $I_C=2\text{mA}$	40		240	
$V_{BE}(\text{on})$	Base-Emitter On Voltage	$V_{CE}=6\text{V}$ , $I_C=1\text{mA}$	0.65	0.70	0.75	V
$V_{CE}(\text{sat})$	Collector-Emitter Saturation Voltage	$I_C=10\text{mA}$ , $I_B=1\text{mA}$		0.1	0.4	V
$f_T$	Current Gain Bandwidth Product	$V_{CE}=10\text{V}$ , $I_C=1\text{mA}$	100	250		MHz
$C_{ob}$	Output Capacitance	$V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$		2.0	3.2	pF

### $h_{FE}$ Classification

Classification	R	O	Y
$h_{FE}$	40 ~ 80	70 ~ 140	120 ~ 240

# Typical Characteristics

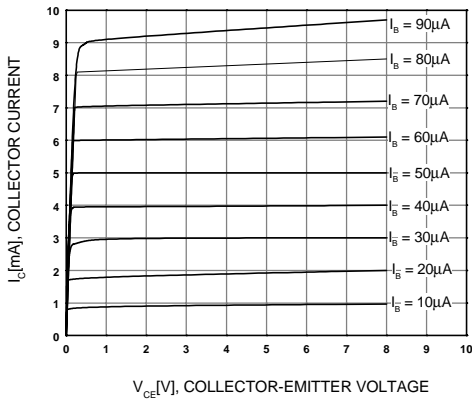


Figure 1. Static Characteristic

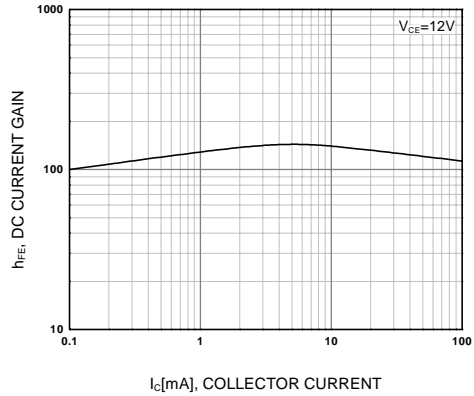


Figure 2. DC current Gain

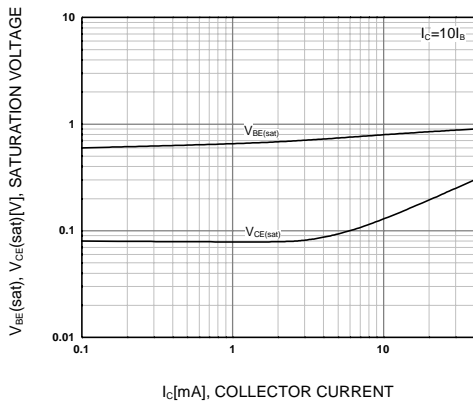


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

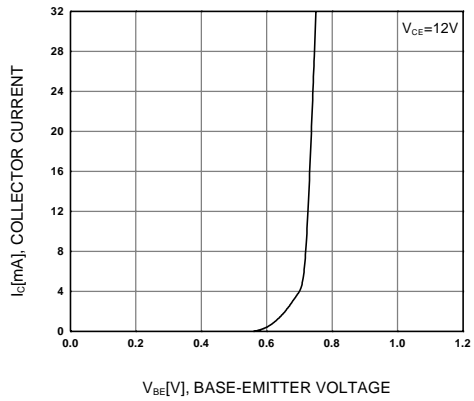


Figure 4. Base-Emitter On Voltage

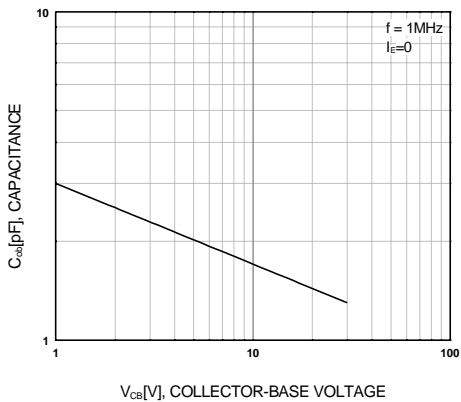


Figure 5. Collector Output Capacitance

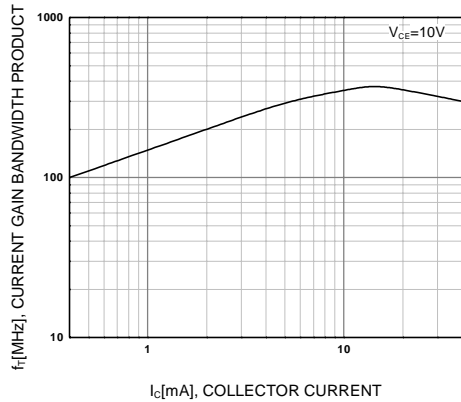
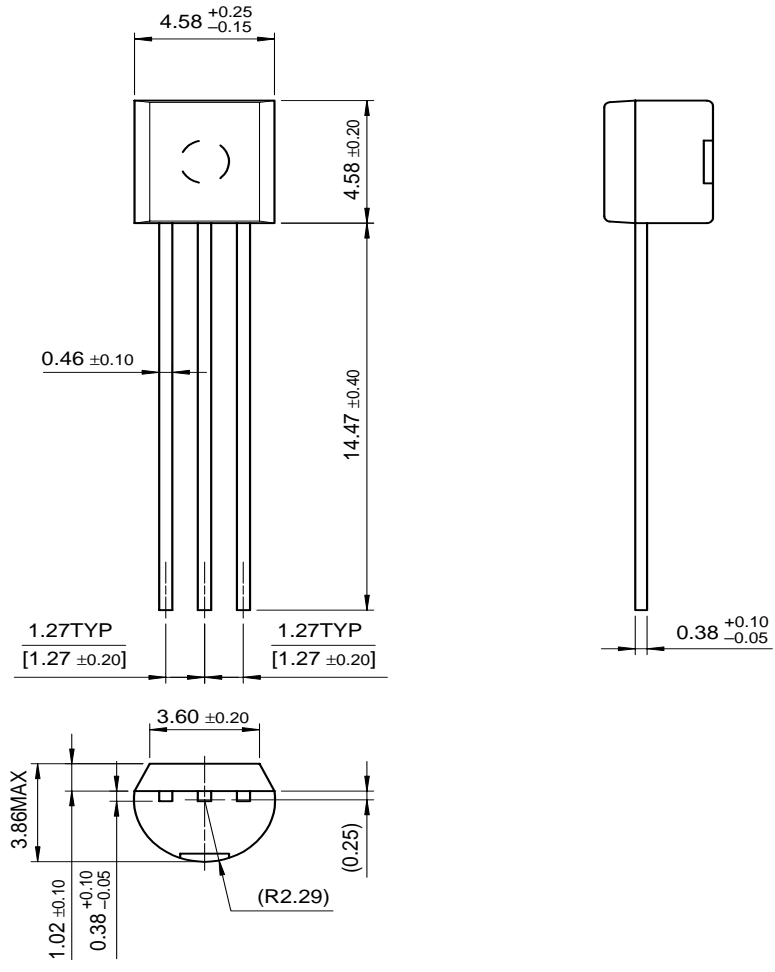


Figure 6. Current Gain Bandwidth Product

# Package Dimensions

## TO-92



Dimensions in Millimeters

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