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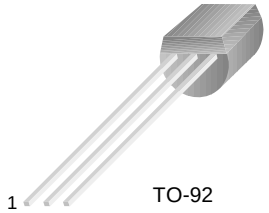
KSC2753

Low Noise Amplifier for VHF/UHF

- High Current Gain Bandwidth Product : f_T=5GHz
- NF=1.5dB, $|S_{21e}|^2$ = 16dB at f=500MHz
- NF=1.7dB, $|S_{21e}|^2$ = 10.5dB at f=1000MHz



TO-92

1. Base 2. Emitter 3. Collector

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_a=25°C unless otherwise noted

Symbol	Parameter	Ratings	Units
V_{CBO}	Collector-Base Voltage	17	V
V_{CEO}	Collector-Emitter Voltage	12	V
V_{EBO}	Emitter-Base Voltage	3	V
I_C	Collector Current	70	mA
I_B	Base Current	30	mA
P_C	Collector Power Dissipation	300	mW
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C

Electrical Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
I_{CBO}	Collector Cut-off Current	V_{CB}=10V, I_E=0			1	μA
I_{EBO}	Emitter Cut-off Current	V_{EB}=1V, I_C=0			1	μA
h_{FE}	DC Current Gain	V_{CE}=10, I_C=20mA	30		180	
f_T	Current Gain Bandwidth Product	V_{CE}=10V, I_C=20mA		5		GHz
C_{ob}	Output Capacitance	V_{CB}=10V, I_E=0, f=1MHz		1.1		pF
C_{RE}	Reverse Transfer Capacitance	V_{CB}=10V, I_E=0, f=1MHz		0.65		pF
$\|S_{21e}\|^2$ (1)	Insertion Gain	V_{CE}=10V, I_C=20mA, f=500MHz		16		dB
$\|S_{21e}\|^2$ (2)		V_{CE}=10V, I_C=20mA f=1000MHz		10.5		dB
NF(1)	Noise Figure	V_{CE}=10V, I_C =5mA, f=500MHz		1.5		dB
NF(2)		V_{CE}=10V, I_C=5mA, f=1000MHz		1.7		dB

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Typical Characteristics

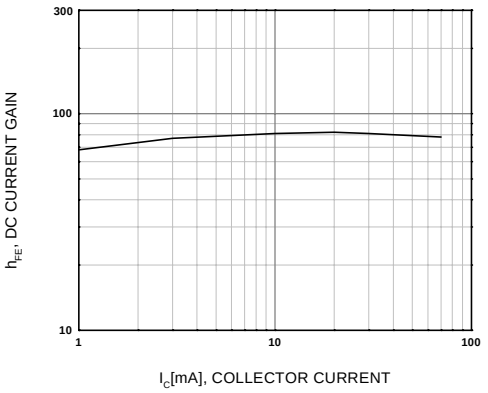

Figure 1. DC Current Gain

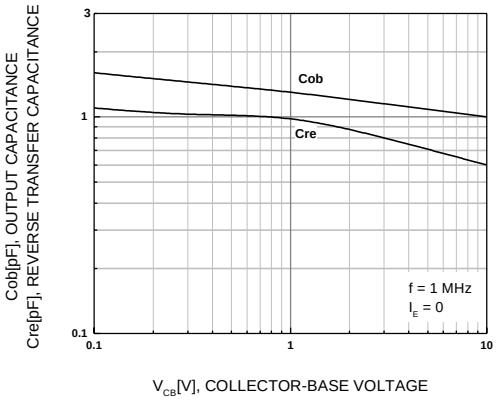

Figure 2. Cob, Cre - V_{CB}

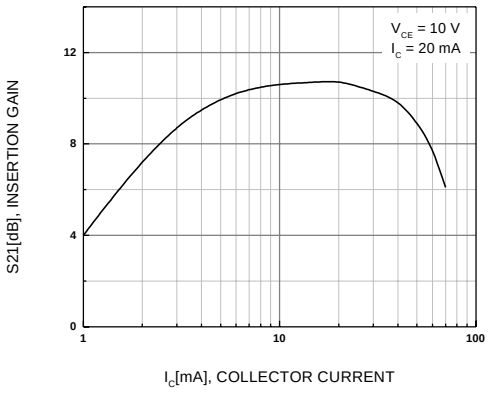

Figure 3. Insertion Gain

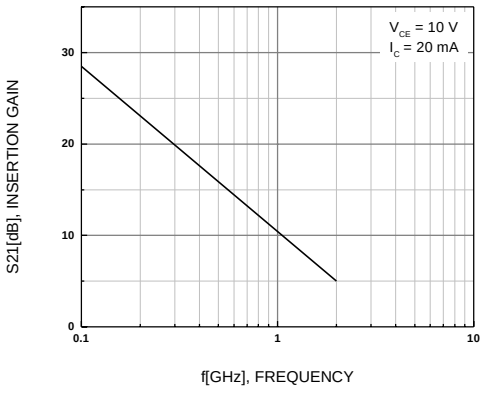

Figure 4. $|S_{21e}|^2$ - f

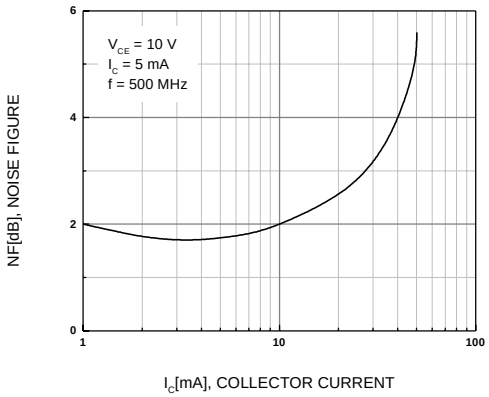

Figure 5. Noise Figure

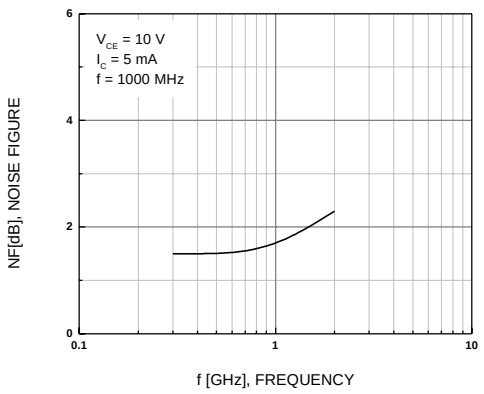

Figure 6. NF - f

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Typical Characteristics (Continued)

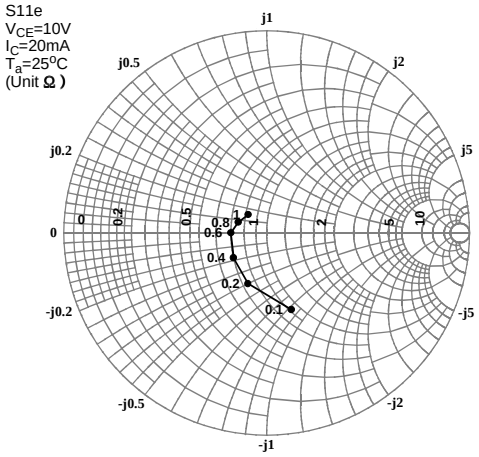

Figure 7. S11

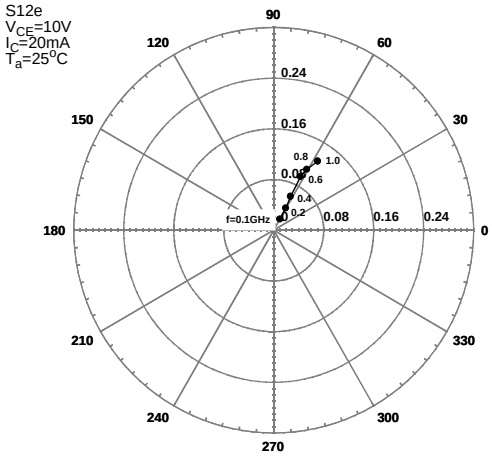

Figure 8. S12

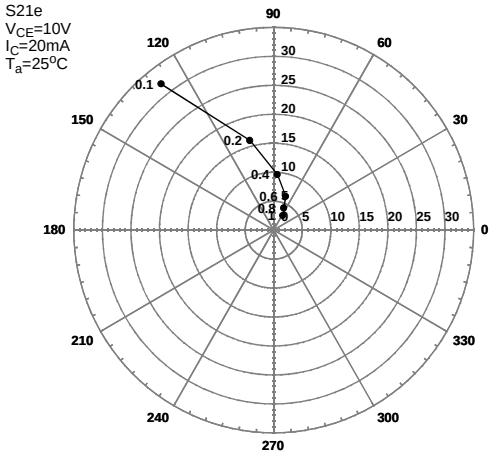

Figure 9. S21

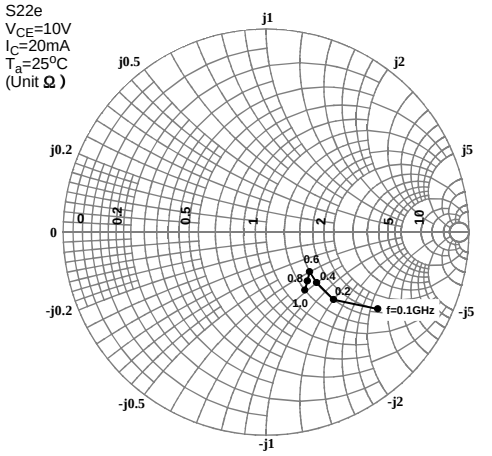

Figure 10. S22

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Package Demensions

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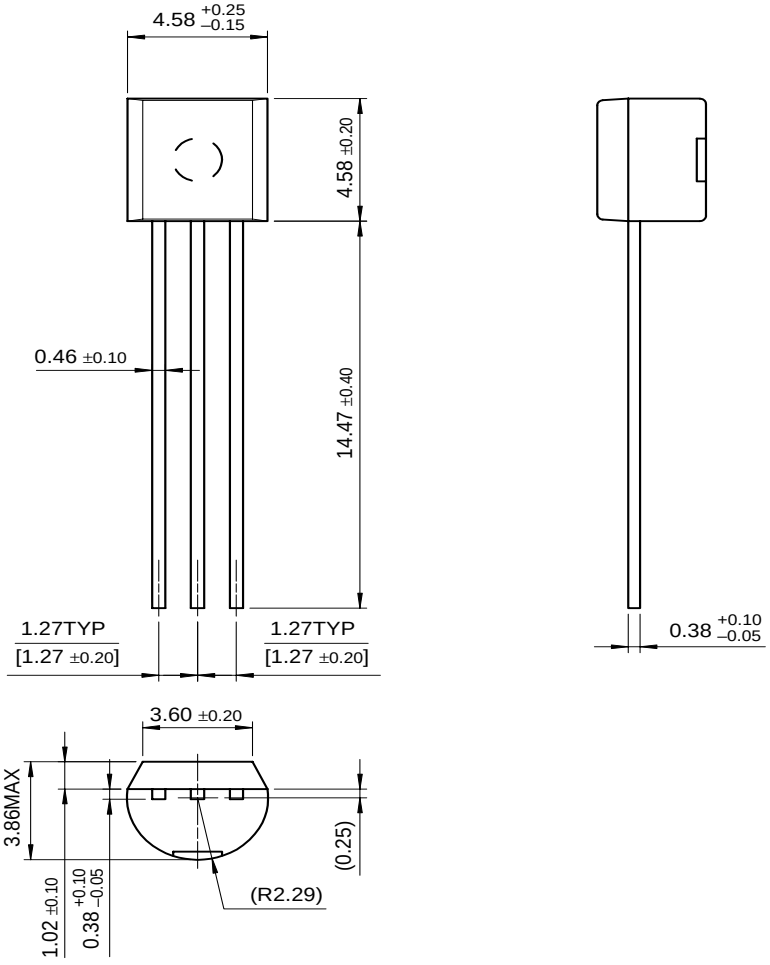

Dimensions in Millimeters

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