

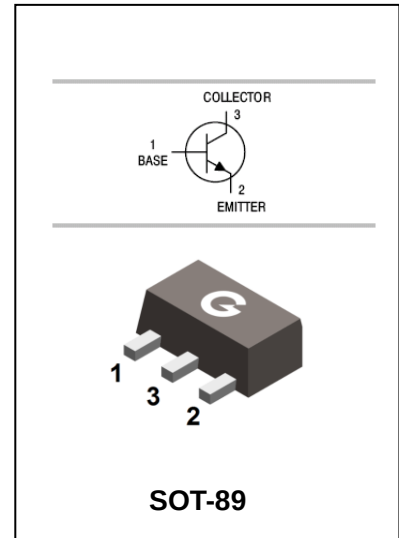
NPN SILICON EPITAXIAL TRANSISTOR POWER MINI MOLD

T2SC3357

FEATURES

HF

- Low Noise and High Gain
NF = 1.1 dB TYP., Ga = 8.0 dB TYP. @VCE = 10 V,
IC = 7 mA, f = 1.0 GHz
NF = 1.8 dB TYP., Ga = 9.0 dB TYP. @VCE = 10 V,
- Large PT in Small Package
- P_D : 2 W with 16 cm²* 0.7 mm Ceramic Substrate
- Halogen free
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards



APPLICATIONS

- The T2SC3357 is an NPN silicon epitaxial transistor designed For low noise amplifier at VHF, UHF and CATV band.
- It has large dynamic range and good current characteristic.

ORDERING INFORMATION

Type No.	Marking	Package Code
T2SC3357-H	RH	SOT-89
T2SC3357-F	RF	SOT-89
T2SC3357-E	RE	SOT-89

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	20	V
V _{CEO}	Collector-Emitter Voltage	12	V
V _{EBO}	Emitter-Base Voltage	3.0	V
I _C	Collector Current -Continuous	100	mA
P _D Note 1	Total Power Dissipation	1.2	W
R _{th(j-a)} Note 1	Thermal Resistance	62.5	°C/W
T _J	Junction Temperature	-65 to +150	°C
T _{STG}	Storage Temperature	-65 to +150	°C

Note 1: mounted on 16 cm² × 0.7 mm Ceramic Substrate

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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A$	20			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA$	12			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A$	3.0			V
Collector cut-off current	I_{CBO}	$V_{CB}=10V, I_E=0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=1.0V, I_C=0$			1	μA
DC current gain	h_{FE} Note 2	$V_{CE}=10V, I_C=20mA$	50	120	300	
Transition frequency	f_T	$V_{CE}=10V, I_C=20mA$		6.5		GHz
Feed-Back Capacitance	C_{re} Note 3	$V_{CB} = 10 V, I_C = 0 mA, f = 1.0 MHz$		0.65	1.0	pF
Insertion power gain	$ S_{21e} ^2$	$V_{CE}=10V, I_C=20mA, f=1GHz$		9		dB
Noise Figure	NF	$V_{CE}=10V, I_C=7mA, f=1GHz$		1.1		dB
Noise Figure	NF	$V_{CE}=10V, I_C=40mA, f=1GHz$		1.8	3.0	dB

Note 2: Pulse Measurement $PW \leq 350 \mu s$, Duty Cycle $\leq 2 \%$

Note 3: The emitter terminal and the case shall be connected to the guard terminal of the three-terminal capacitance bridge.

CLASSIFICATION OF h_{FE}

Rank	H	F	E
Range	50-100	80-160	125-250
MARKING	RH	RF	RE

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TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

Fig.1 TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE

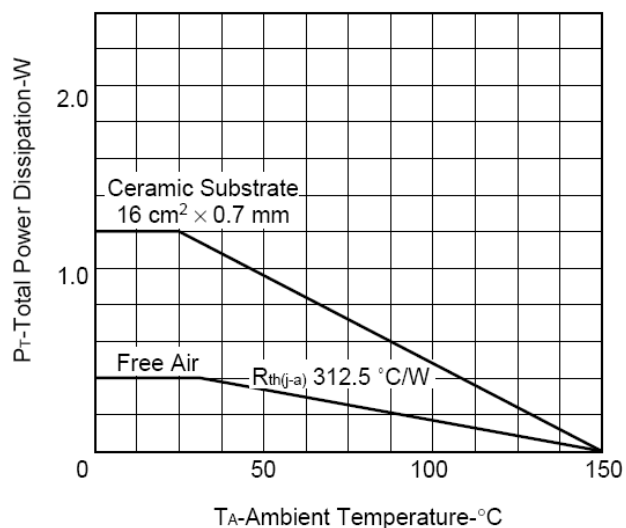


Fig.2 FEED-BACK CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE

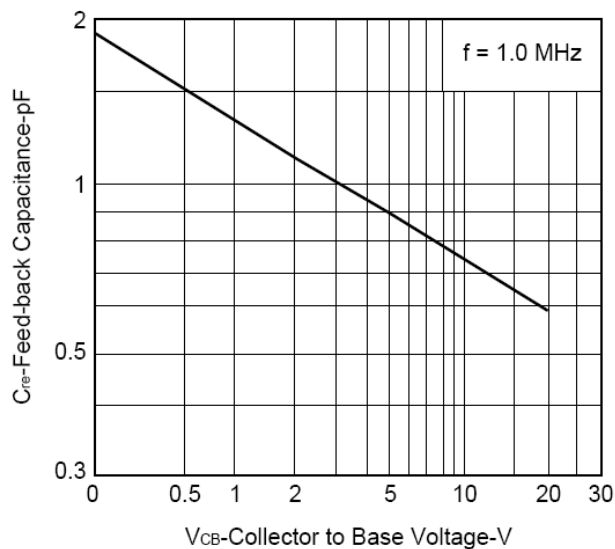


Fig.3 DC CURRENT GAIN vs. COLLECTOR CURRENT

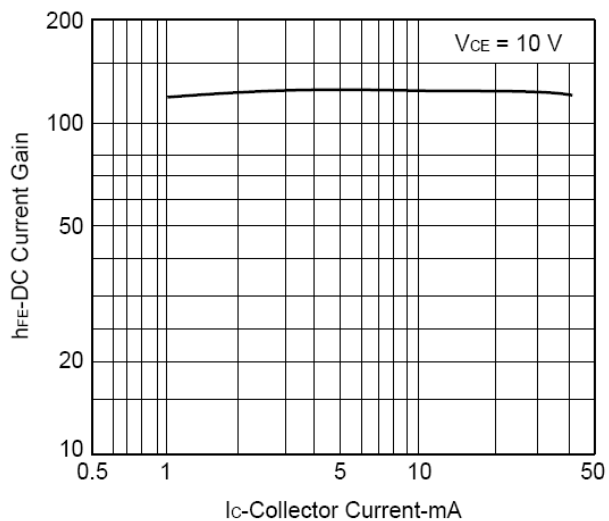
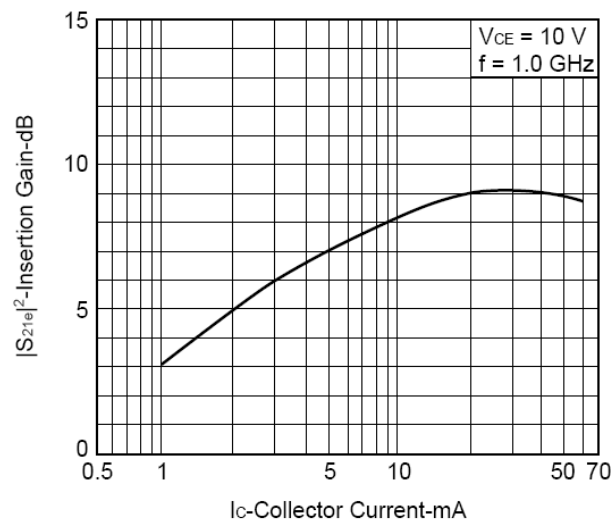


Fig.4 INSERTION GAIN vs. COLLECTOR CURRENT



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Fig.5 GAIN BANDWIDTH PROUDCT vs. COLLECTOR CURRENT

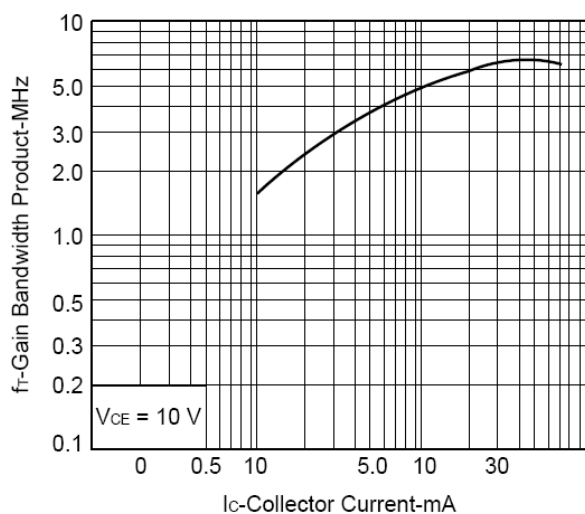


Fig.6 INSERTION GAIN, MAXIMUM GAIN vs. FREQUENCY

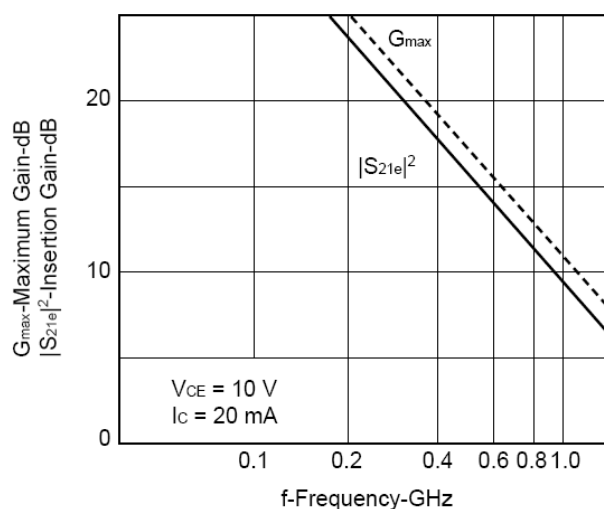


Fig.7 NOISE FIGURE vs. COLLECTOR CURRENT

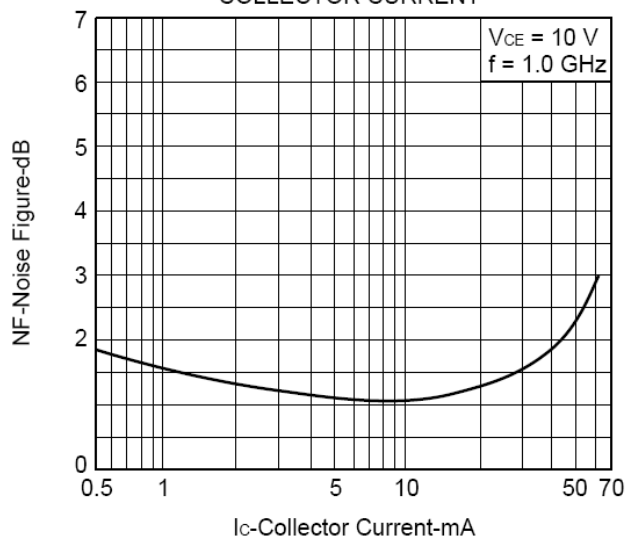
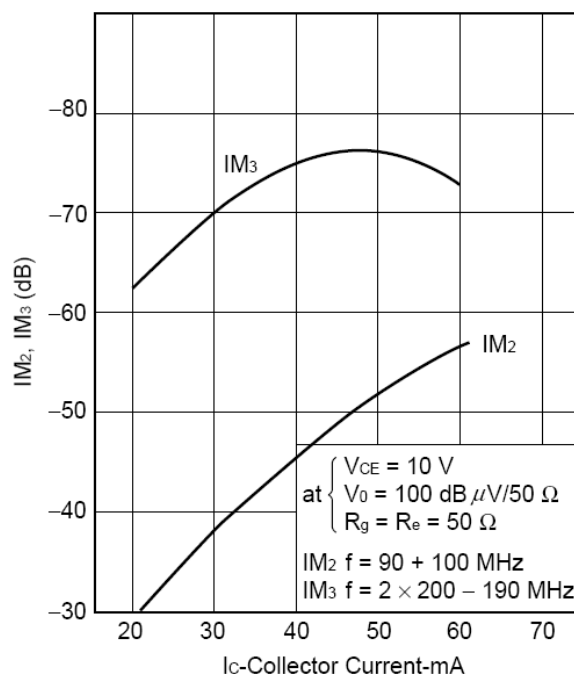


Fig.8 INTERMODULATION DISTORTION vs. COLLECTOR CURRENT



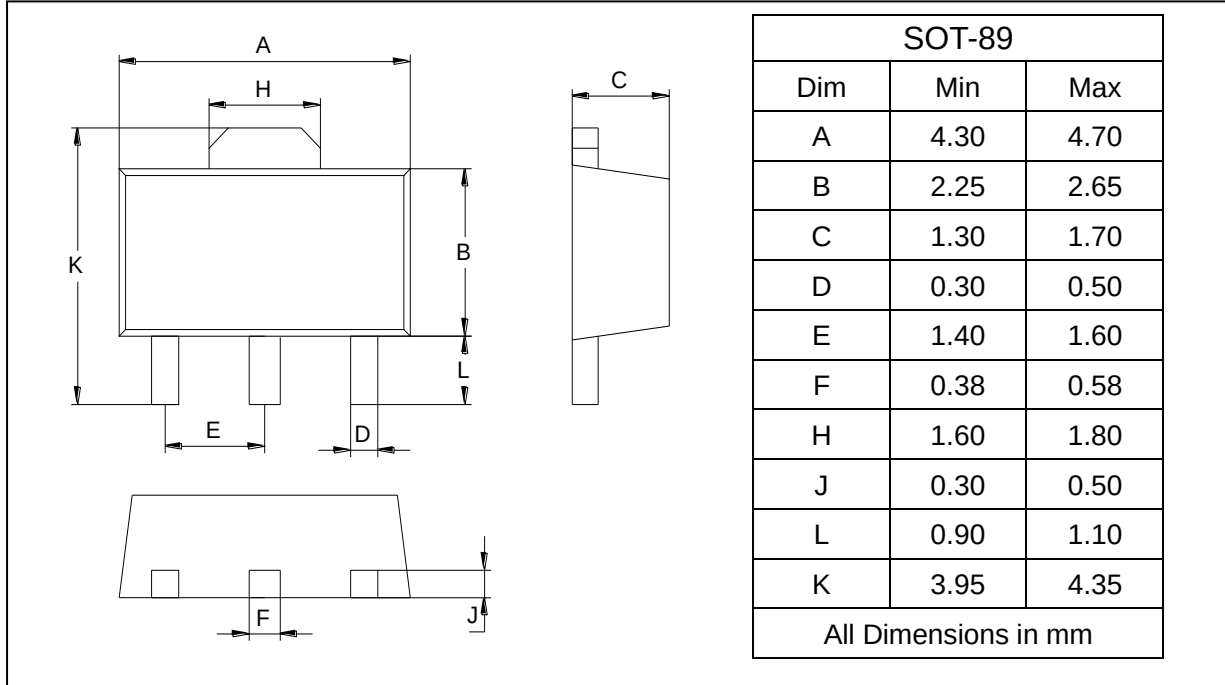
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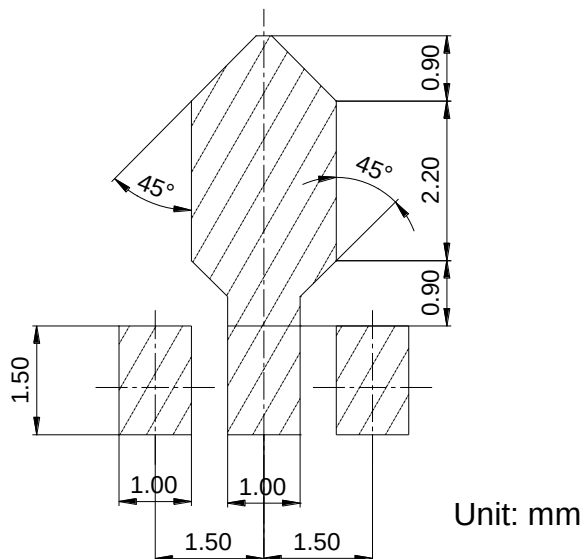
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
T2SC3357	SOT-89	1000 pcs / Tape & Reel