

DATA SHEET

NEC

SILICON TRANSISTOR 2SC2954

NPN SILICON EPITAXIAL TRANSISTOR POWER MINI MOLD

DESCRIPTION

The 2SC2954 is an NPN epitaxial silicon transistor designed for low noise wide band amplifier and buffer amplifier of OSC, for VHF and CATV band.

FEATURES

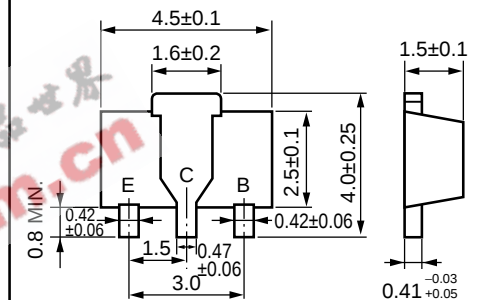
- Low Noise and High Gain.
 $f = 200 \text{ MHz}, 500 \text{ MHz}$
 $NF: 2.3 \text{ dB}, 2.4 \text{ dB}$
 $|S_{21e}|: 20 \text{ dB}, 12.5 \text{ dB}$
- Large P_T in Small Package.
 $P_T: 2 \text{ W}$ with $16 \text{ cm}^2 \times 0.7 \text{ mm}$ Ceramic Substrate.

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CBO}	35	V
Collector to Emitter Voltage	V_{CEO}	18	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	150	mA
Total Power Dissipation	P_T^*	2.0	W
Thermal Resistance	$R_{th(j-a)}^*$	62.5	$^\circ\text{C/W}$
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-65 to +150	$^\circ\text{C}$

* With $16 \text{ cm}^2 \times 0.7 \text{ mm}$
Ceramic Substrate

PACKAGE DIMENSIONS (Unit: mm)



Term, Connection

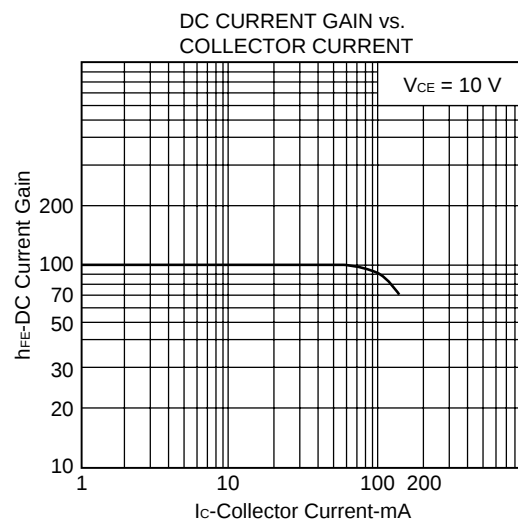
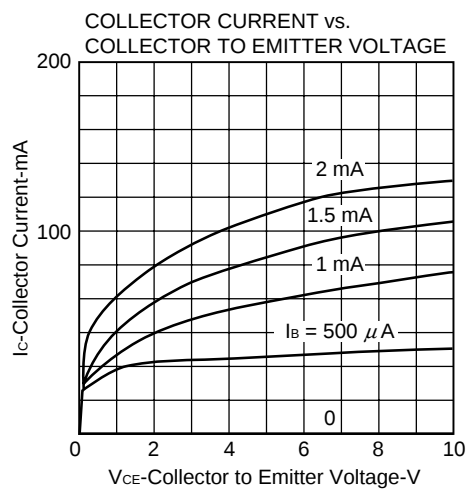
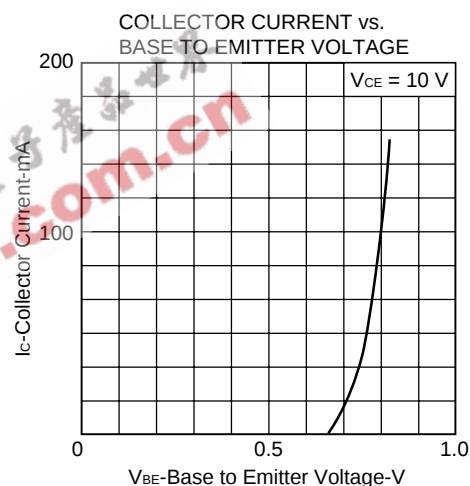
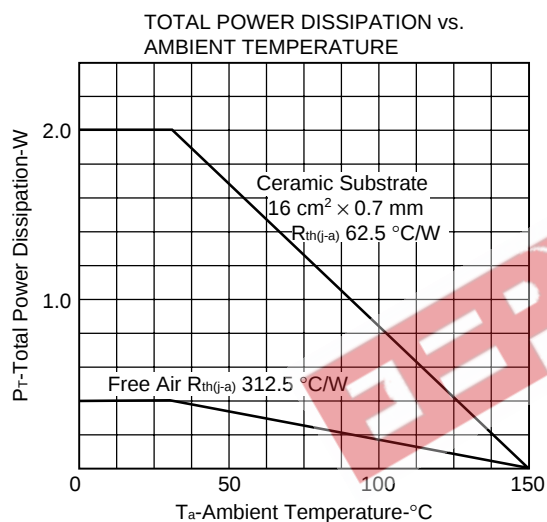
E : Emitter
 C : Collector (Fin)
 B : Base
 (SOT-89)

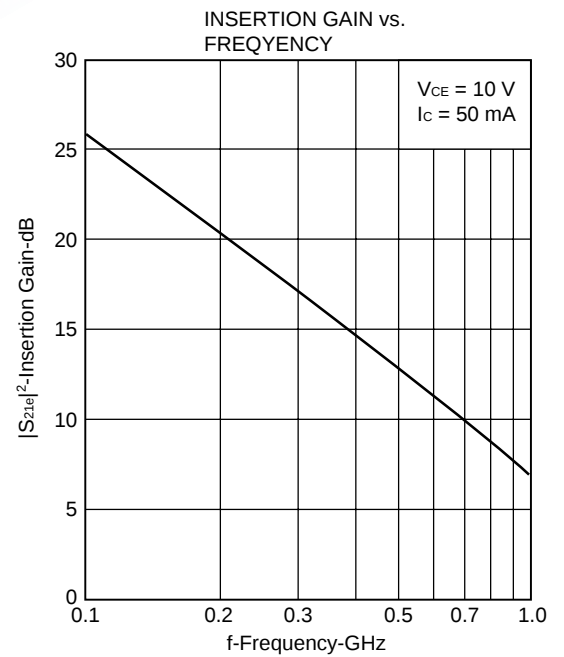
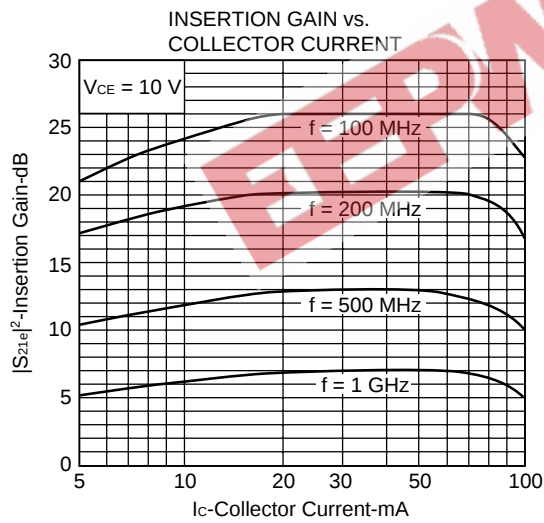
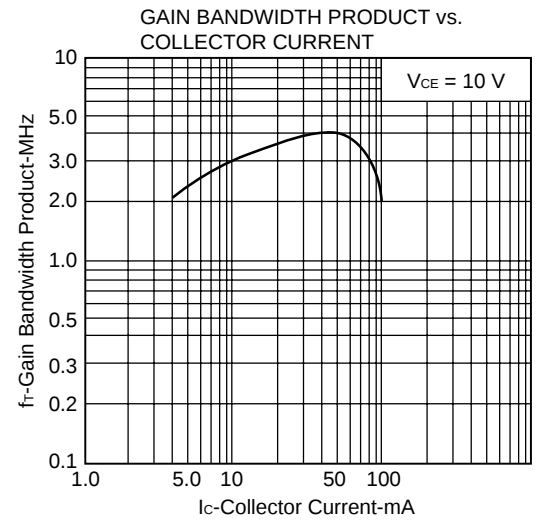
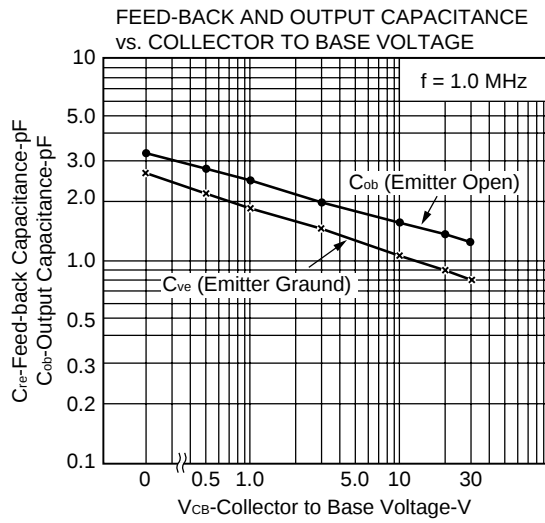
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

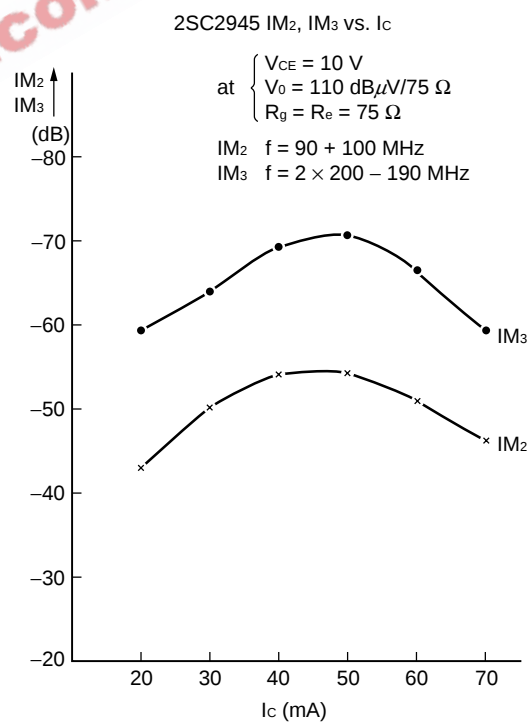
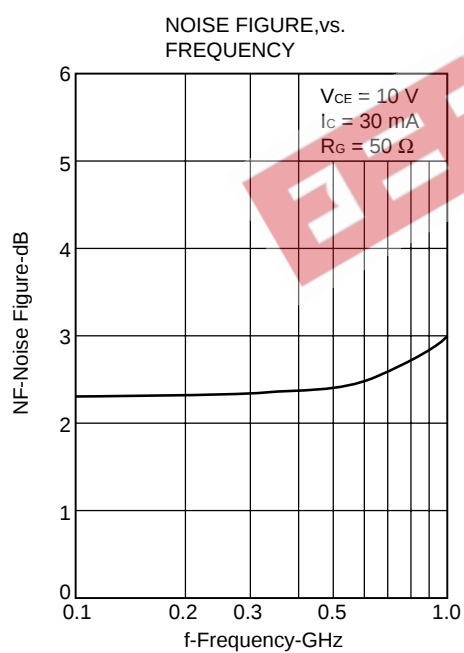
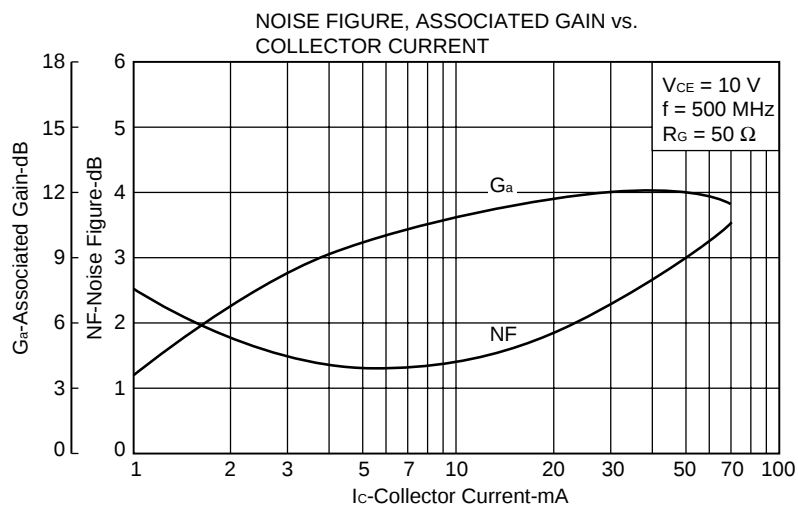
CHARACTERISTIC	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Collector Cutoff Current	I_{CBO}	$V_{CB} = 10\text{ V}, I_E = 0$			100	nA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{ V}, I_C = 50\text{ mA} \text{ *1}$	30	100	200	—
Gain Bandwidth Product	f_T	$V_{CE} = 10\text{ V}, I_C = 50\text{ mA}$	3.0	4.0		GHz
Feedback Capacitance	C_{re}	$V_{CB} = 10\text{ V}$, Emitter Grounded, $f = 1.0\text{ MHz}$		1.1	1.8	pF
Insertion Power Gain	$ S_{21e} ^2$	$V_{CE} = 10\text{ V}, I_C = 50\text{ mA}, f = 500\text{ MHz}$ $R_G = 50\ \Omega$	10	12.5		dB
Noise Figure	NF	$V_{CE} = 10\text{ V}, I_C = 30\text{ mA}, f = 500\text{ MHz}$ $R_G = 50\ \Omega$		2.4	4.0	dB

*1 Pulse Measurement $PW \leq 350\ \mu\text{s}$, duty cycle 2 %/Pulsed

TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)







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Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

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Anti-radioactive design is not implemented in this product.