

SILICON TRANSISTOR

2SC2759

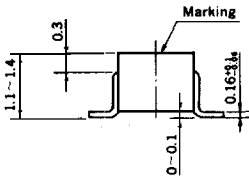
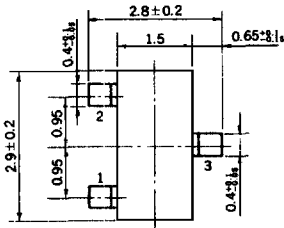
UHF/VHF MIXER, UHF OSCILLATOR

NPN SILICON EPITAXIAL TRANSISTOR

MINI MOLD

PACKAGE DIMENSIONS

in millimeters



1. Emitter
2. Base
3. Collector

The 2SC2759 is specially designed for use as VHF and UHF mixer and UHF oscillators in a tuner of TV receiver. The 2SC2759 feature high conversion gain and low distortion for mixer application, stable oscillation and small frequency drift against any change of the supply voltage and ambient temperature for oscillator application.

FEATURES

- Low noise. NF : 4.0 dB (TYP.)
- High conversion gain. G_{cb} : 12.5 dB (TYP.)
- Easy & economical mounting realizable with plastic mold package for Hybrid IC.

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

Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	14	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	50	mA
Total Power Dissipation	P_T	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

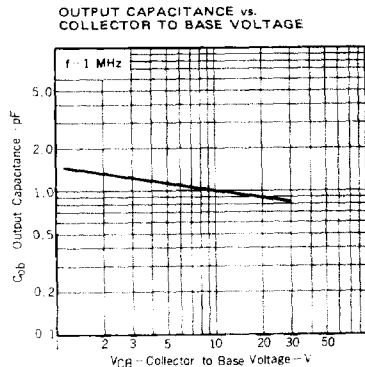
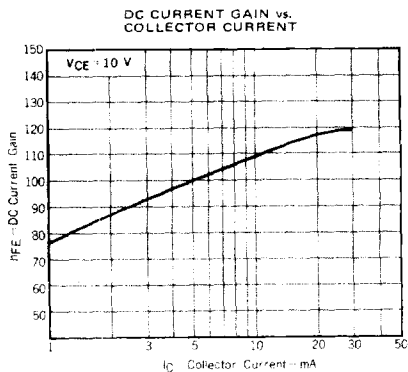
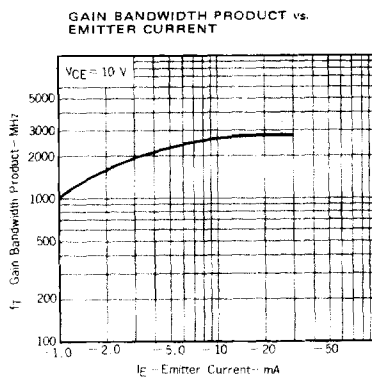
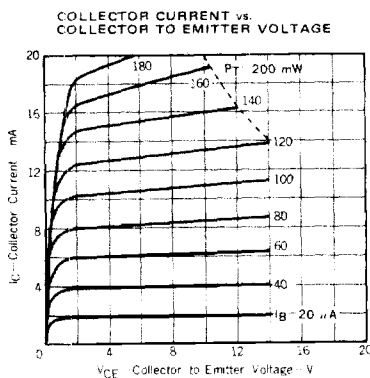
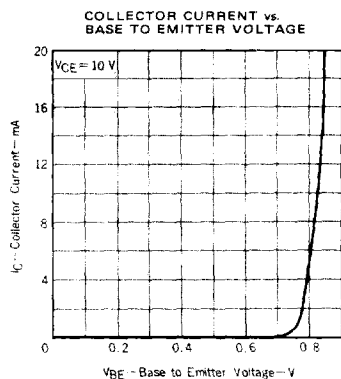
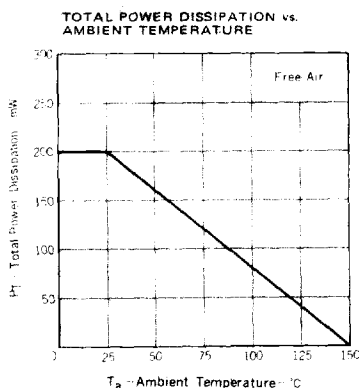
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ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

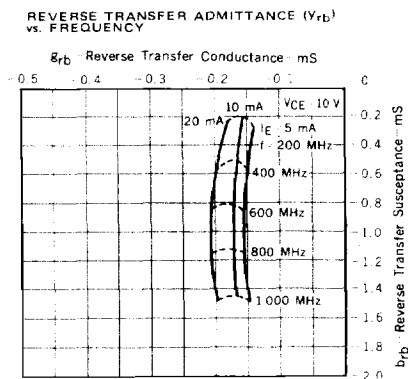
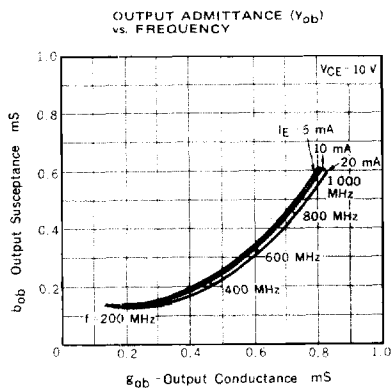
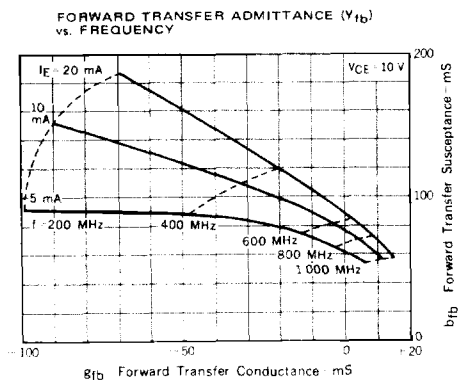
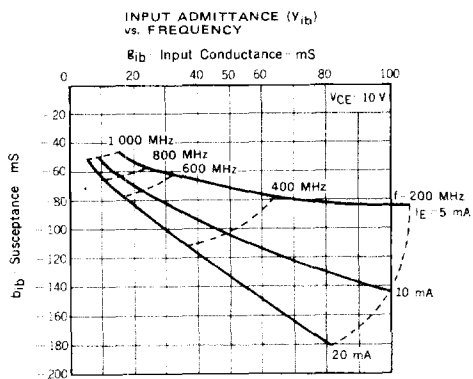
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			0.1	μA	$V_{CB} = 15\text{ V}, I_E = 0$
DC Current Gain	h_{FE}	40	100	180		$V_{CE} = 10\text{ V}, I_E = -5.0\text{ mA}$
Gain Bandwidth Product	f_T	1.5	2.3		GHz	$V_{CE} = 10\text{ V}, I_C = 5.0\text{ mA}$
Output Capacitance	C_{ob}		1.0	1.3	pF	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$
Noise Figure	NF		4.0	5.0	dB	$V_{CB} = 10\text{ V}, I_E = -5.0\text{ mA}, f = 900\text{ MHz}$
Power Gain	G_{pb}	14	16		dB	$V_{CB} = 10\text{ V}, I_E = -5.0\text{ mA}, f = 900\text{ MHz}$
Conversion Gain	G_{cb}	10	12.5		dB	$f_{RF} = 900\text{ MHz}, f_{LOC} = 930\text{ MHz}$ $V_{CB} = 10\text{ V}, I_E = -5.0\text{ mA}$ Local level = 110 mV

h_{FE} Classification

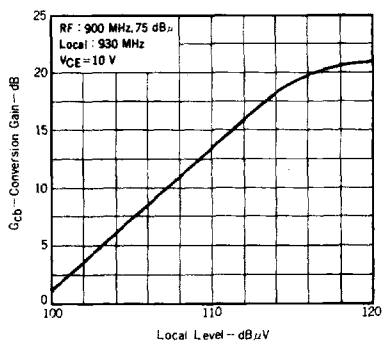
Marking	U21	U22	U23
h_{FE}	40 to 80	60 to 120	90 to 180

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

TYPICAL SMALL SIGNAL "Y" PARAMETERS (Common Base)



CONVERSION GAIN vs. LOCAL OSCILLATOR LEVEL

900 MHz G_{cb} Test Circuit