

**isc Silicon NPN RF Transistor**
**2SC4703**
**DESCRIPTION**

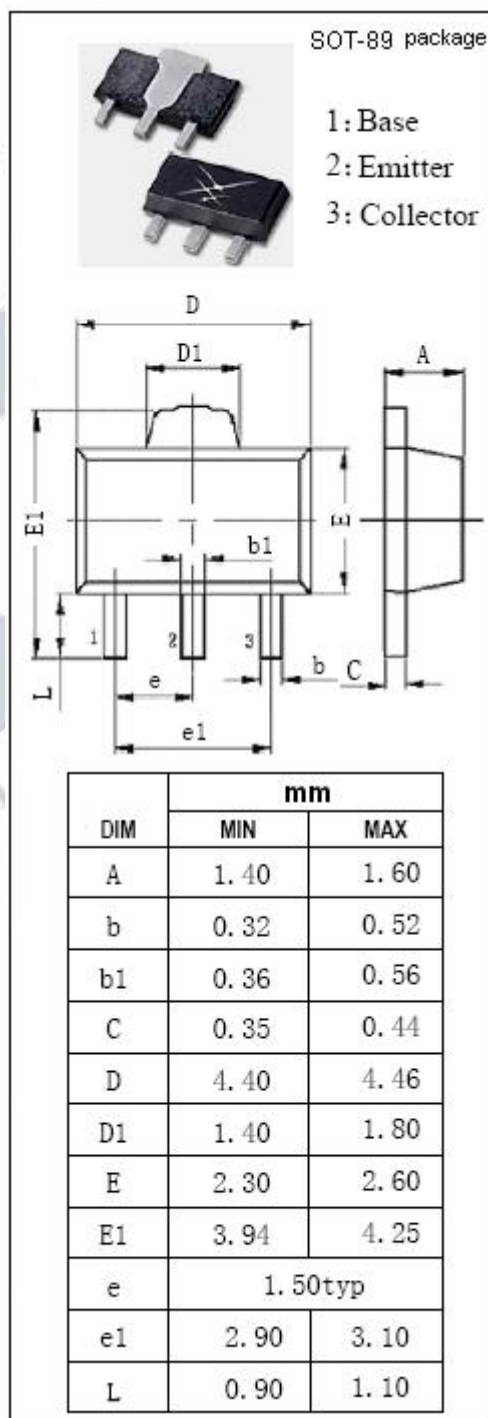
- Low Distortion at Low Supply Voltage.  
IM<sub>2</sub>- 55 dB TYP., IM<sub>3</sub>- 76 dB TYP.  
@V<sub>CE</sub> = 5 V, I<sub>c</sub> = 50 mA, V<sub>O</sub> = 105dB μ /75 Ω
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Designed for low distortion ,low noise RF amplifier operating with low supply voltage (V<sub>CE</sub> = 5V).

**ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)**

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>CBO</sub>	Collector-Base Voltage	25	V
V <sub>CEO</sub>	Collector-Emitter Voltage	12	V
V <sub>EBO</sub>	Emitter-Base Voltage	2.5	V
I <sub>c</sub>	Collector Current-Continuous	0.15	A
P <sub>c</sub>	Collector Power Dissipation @T <sub>c</sub> =25°C	1.8	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature Range	-55~150	°C



## isc Silicon NPN RF Transistor

## 2SC4703

## ELECTRICAL CHARACTERISTICS

 $T_c=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=20\text{V}; I_E=0$			1.5	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=2\text{V}; I_C=0$			1.5	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C=5\text{mA}; V_{CE}=5\text{V}$	50		250	
$f_T$	Current-Gain—Bandwidth Product	$I_C=5\text{mA}; V_{CE}=5\text{V}$		6.0		GHz
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=5\text{V}; f=1.0\text{MHz}$		1.5	2.5	pF
$ S_{21e} ^2$	Insertion Power Gain	$I_C=50\text{mA}; V_{CE}=5\text{V}; f=1.0\text{GHz}$	6.5	8.3		dB
$ S_{21e} ^2$	Insertion Power Gain	$I_C=20\text{mA}; V_{CE}=10\text{V}; f=1.0\text{GHz}$		8.5		dB
NF	Noise Figure	$I_C=50\text{mA}; V_{CE}=5\text{V}; f=1.0\text{GHz}$		2.3	3.5	dB
$IM_2$	2nd Intermodulation Distortion	$V_{CE}=5\text{V}, I_C=50\text{mA},$ $V_O=105\text{ dB } \mu\text{V}/75\ \Omega,$ $f=190\text{ MHz} - 90\text{ MHz}$		-55		dB
		$V_{CE}=10\text{V}, I_C=50\text{mA},$ $V_O=105\text{ dB } \mu\text{V}/75\ \Omega,$ $f=190\text{ MHz} - 90\text{ MHz}$		-63		
$IM_3$	3rd Intermodulation Distortion	$V_{CE}=5\text{V}, I_C=50\text{mA},$ $V_O=105\text{ dB } \mu\text{V}/75\ \Omega,$ $f=2 \times 190\text{ MHz} - 200\text{ MHz}$		-76		dB
		$V_{CE}=10\text{V}, I_C=50\text{mA},$ $V_O=105\text{ dB } \mu\text{V}/75\ \Omega,$ $f=2 \times 190\text{ MHz} - 200\text{ MHz}$		-81		

◆  $h_{FE}$  Classification

Class	SH	SF	SE
Marking	SH	SF	SE
$h_{FE}$	50-100	80-160	125-250