

**Silicon NPN RF Transistor**

**2SC5890**

**DESCRIPTION**

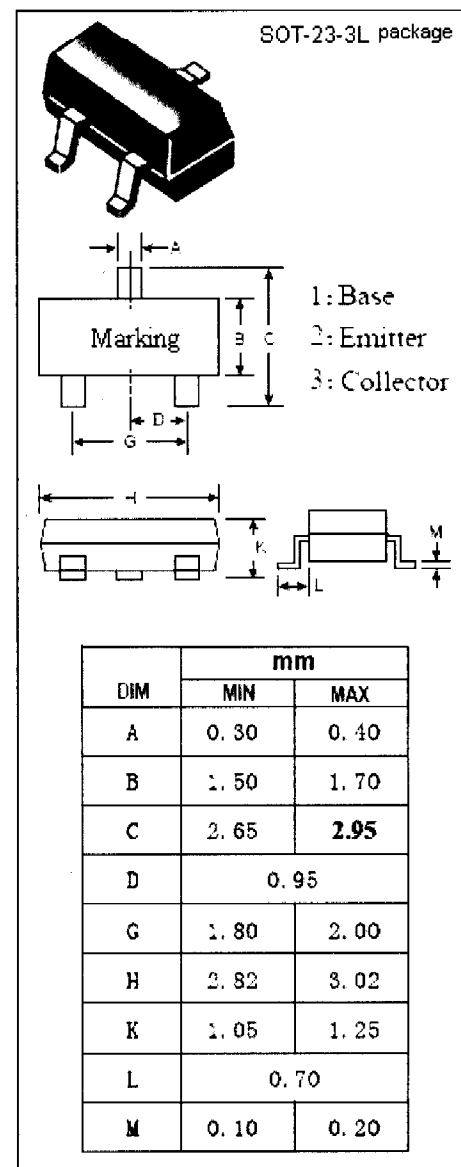
- High Gain Bandwidth Product  
 $f_T = 7.8 \text{ GHz TYP.}$
- High power gain and low noise figure ;  
 $PG = 12 \text{ dB TYP., NF} = 1.0 \text{ dB typ. @ } f = 900 \text{ MHz}$

**APPLICATIONS**

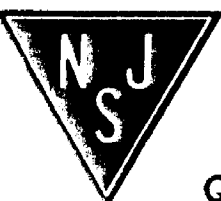
- Designed for use in UHF ~ VHF wide band amplifier.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	20	V
$V_{CEO}$	Collector-Emitter Voltage	12	V
$V_{EBO}$	Emitter-Base Voltage	1.5	V
$I_C$	Collector Current-Continuous	75	mA
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	0.7	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



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## ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 10 \mu\text{A}; I_E = 0$	20			V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 12\text{V}; I_E = 0$			1	$\mu\text{A}$
$I_{CEO}$	Collector Cutoff Current	$V_{CE} = 9\text{V}; R_{BE} = \infty$			1	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 1.5\text{V}; I_C = 0$			10	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C = 20\text{mA}; V_{CE} = 5\text{V}$	100		200	
$f_T$	Current-Gain—Bandwidth Product	$I_C = 30\text{mA}; V_{CE} = 5\text{V}; f = 1\text{GHz}$	5.5	7.8		GHz
$C_{OB}$	Output Capacitance	$I_E = 0; V_{CB} = 5\text{V}; f = 1.0\text{MHz}$		0.9	1.5	pF
$C_{re}$	Reverse Transfer Capacitance	$I_E = 0; V_{CB} = 5\text{V}; f = 1.0\text{MHz}$		0.85		pF
$ S_{21e} ^2$	Insertion Power Gain	$I_C = 30\text{mA}; V_{CE} = 5\text{V}; f = 1\text{GHz}$		11		dB
PG	Power Gain	$I_C = 30\text{mA}; V_{CC} = 5\text{V}; f = 900\text{MHz}$	9.5	12		dB
NF	Noise Figure	$I_C = 5\text{mA}; V_{CC} = 5\text{V}; f = 900\text{MHz}$		1.0	1.9	dB

