

# EVVOSEMI<sup>®</sup>

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

## Product Specification

▶ Domestic	Part Number	BFG425W
▶ Overseas	Part Number	BFG425W
▶ Equivalent	Part Number	BFG425W

EV is the abbreviation of name EVVO

## Microwave, low noise, SiGe NPN HBT

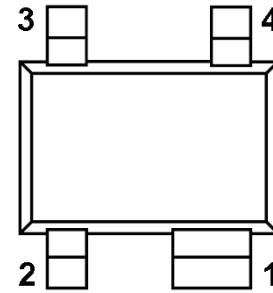
UHF 25 GHz, low noise transistor with SiGe HBT technique, high power gain, low noise and large dynamic range. The adoption of subminiature SOT-343R package, especially suitable for high density surface patch installation, mainly for the VHF, UHF broadband high frequency low noise amplifier.

### FEATURES

- High transition frequency
- Top: -55°C~+85°C
- $N_F=1.2\text{dB}$ ,  $G_a=17\text{dB(TYP)}$  @  $V_{CE}=2\text{V}$ ,  $I_C=25\text{mA}$ ,  $f=2\text{GHz}$
- $G_{max}=20\text{dB(Typ)}$  @  $V_{CE}=2\text{V}$ ,  $I_C=25\text{mA}$ ,  $f=2\text{GHz}$

### APPLICATIONS

- RF front end
- Wideband applications, e.g. analog and digital cellular telephones, cordless telephones (PHS, DECT, etc.)
- Radar detectors
- Pagers
- Satellite television tuners (SATV)
- High frequency oscillators.



Top view

PIN	DESCRIPTION
1	emitter
2	base
3	emitter
4	collector

### Absolute maximum rating

SYMBOL	PARAMETER	MAX.	UNIT
$I_c$	collector-current	30	V
$P_{tot}$	total power dissipation	135	mW
$T_j$	operating junction temperature	150	mA

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CHARACTERISTICS  $T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_{(BR)CBO}$	Collector base breakdown voltage	$I_C=2.5\mu\text{A}, I_E=0$	9	-	-	V
$V_{(BR)CEO}$	collector-emitter breakdown voltage	$I_C=1\text{mA}, I_B=0$	4.5	-	-	V
$V_{(BR)EBO}$	emitter base breakdown voltage	$I_E=2.5\mu\text{A}, I_C=0$	1	-	-	V
$I_{CBO}$	collector-base leakage current	$I_E=0, V_{CB}=4.5\text{V}$	-	-	100	nA
$H_{FE}$	DC current gain	$V_{CE}=2\text{V}, I_C=25\text{mA}$	50	100	150	-
$f_t$	transition frequency	$V_{CE}=2\text{V}, I_C=25\text{mA}, f=2\text{GHz}$	-	25	-	GHz
$G_{max}$	maximum power gain	$V_{CE}=2\text{V}, I_C=25\text{mA}, f=2\text{GHz}$	-	20	-	dB
$ S_{21} _2$	insertion power gain	$V_{CE}=2\text{V}, I_C=25\text{mA}, f=2\text{GHz}$	-	17	-	dB
$N_F$	noise figure	$V_{CE}=2\text{V}, f=900\text{MHz}, S=\Gamma_{opt}$	-	0.8	-	dB
		$V_{CE}=2\text{V}, f=2\text{GHz}, S=\Gamma_{opt}$	-	1.2	-	dB
$P_{1dB}$	output power at 1 dB gain compression	$I_O=25\text{mA}, V_{CE}=2\text{V}, f=2\text{GHz}, Z_S=Z_{Sopt}, Z_L=Z_{Lopt}$	-	12	-	dBm

TYPICAL CHARACTERISTICS

( $I_C = 25\text{ mA}; V_{CE} = 2\text{ V}$ )

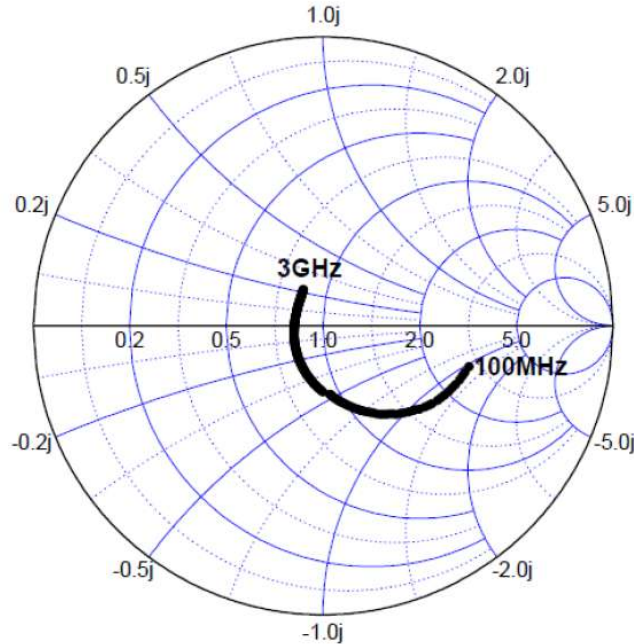


Fig.1 Common emitter input reflection coefficient (S11); typical values

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( $I_C = 25 \text{ mA}$ ;  $V_{CE} = 2 \text{ V}$ .)

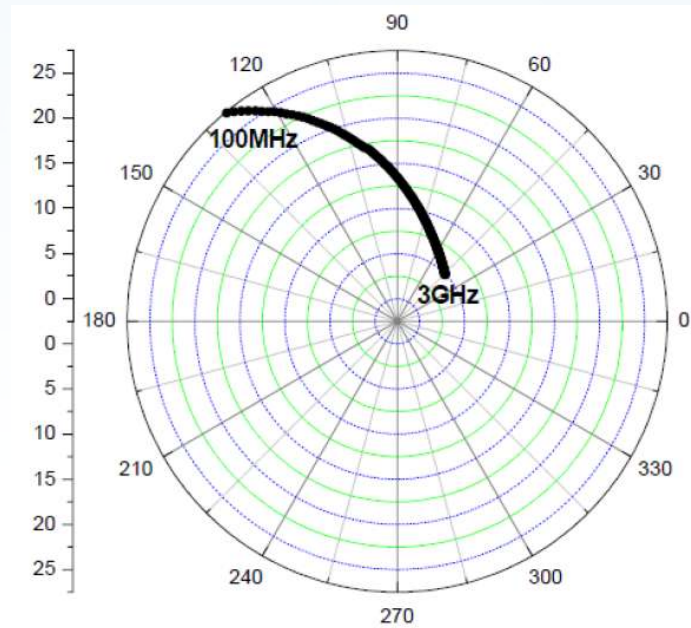


Fig.2 Common emitter forward transmission coefficient (S21); typical values.

$S_{12}$  ( $V_{CE} = 2 \text{ V}$ ,  $I_C = 25 \text{ mA}$ )

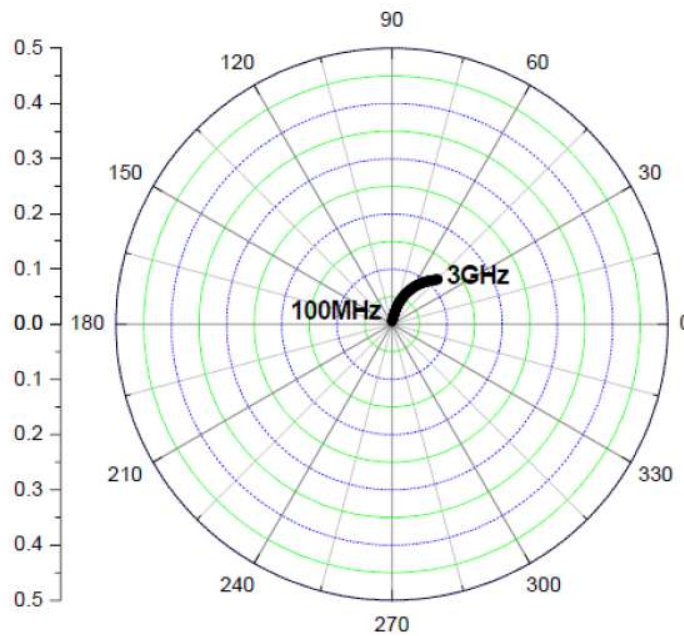


Fig.3 Common emitter reverse transmission coefficient (S12); typical values



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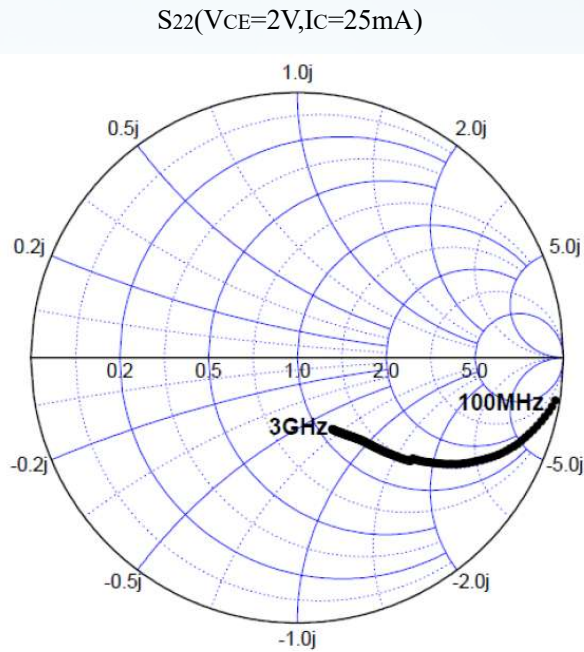
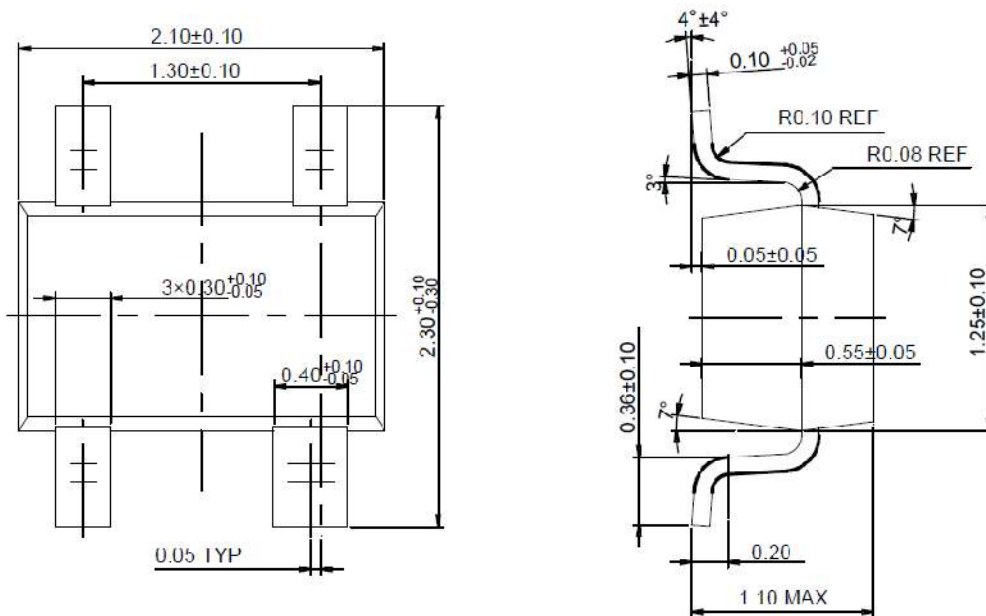


Fig.4 Common emitter output reflection coefficient (S22); typical values

**SOT-343R Dimension**



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