



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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**BFX89
BFY90**

**SILICON
NPN RF TRANSISTORS**



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BFX89 and BFY90 are silicon NPN RF transistors designed for VHF/UHF amplifier, oscillator and converter applications.



TO-72 CASE

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CER}	30	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	2.5	V
Continuous Collector Current	I_C	25	mA
Peak Collector Current ($f \geq 1.0\text{MHz}$)	I_{CM}	50	mA
Power Dissipation	P_D	200	mW
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	300	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$
Thermal Resistance	θ_{JA}	875	$^\circ\text{C/W}$
Thermal Resistance	θ_{JC}	583	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	BFX89			BFY90			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
I_{CBO}	$V_{CB}=15\text{V}$	-	-	10	-	-	10	nA
BV_{CBO}	$I_C=10\mu\text{A}$	30	-	-	30	-	-	V
BV_{CER}	$I_C=1.0\text{mA}, R_{BE}=50\Omega$	30	-	-	30	-	-	V
BV_{CEO}	$I_C=1.0\text{mA}$	15	-	-	15	-	-	V
BV_{EBO}	$I_E=10\mu\text{A}$	2.5	-	-	2.5	-	-	V
h_{FE}	$V_{CE}=1.0\text{V}, I_C=2.0\text{mA}$	20	-	150	25	-	150	
h_{FE}	$V_{CE}=1.0\text{V}, I_C=25\text{mA}$	20	-	125	20	-	125	
f_T	$V_{CE}=5.0\text{V}, I_C=2.0\text{mA}, f=500\text{MHz}$	-	1.0	-	1.0	1.1	-	GHz
f_T	$V_{CE}=5.0\text{V}, I_C=25\text{mA}, f=500\text{MHz}$	-	1.2	-	1.3	1.4	-	GHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$	-	-	1.7	-	-	1.5	pF
C_{re}	$V_{CE}=5.0\text{V}, I_C=2.0\text{mA}, f=1.0\text{MHz}$	-	0.6	-	-	0.6	0.8	pF
G_{pe}	$V_{CE}=10\text{V}, I_C=8.0\text{mA}, f=200\text{MHz}$	-	19	22	-	-	-	dB
G_{pe}	$V_{CE}=10\text{V}, I_C=8.0\text{mA}, f=800\text{MHz}$	-	-	7.0	-	-	-	dB
G_{pe}	$V_{CE}=10\text{V}, I_C=14\text{mA}, f=200\text{MHz}$	-	-	-	21	23	-	dB
G_{pe}	$V_{CE}=10\text{V}, I_C=14\text{mA}, f=800\text{MHz}$	-	-	-	-	8.0	-	dB

R4 (13-March 2014)

**BFX89
BFY90**

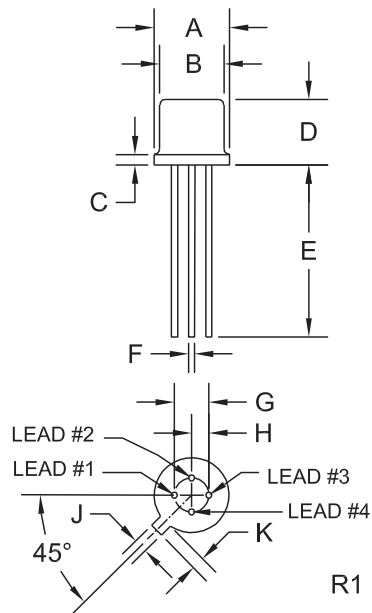
**SILICON
NPN RF TRANSISTORS**



ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	BFX89			BFY90			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
NF	$V_{CE}=5.0\text{V}$, $I_C=2.0\text{mA}$, $f=100\text{kHz}$	-	-	-	-	-	4.0	dB
NF	$V_{CE}=5.0\text{V}$, $I_C=2.0\text{mA}$, $f=200\text{MHz}$	-	3.3	4.0	-	2.5	3.5	dB
NF	$V_{CE}=5.0\text{V}$, $I_C=2.0\text{mA}$, $f=500\text{MHz}$, $R_G=50\Omega$	-	-	6.5	-	-	5.0	dB
NF	$V_{CE}=5.0\text{V}$, $I_C=2.0\text{mA}$, $f=800\text{MHz}$	-	7.0	-	-	5.5	-	dB
P_o	$V_{CE}=10\text{V}$, $I_C=8.0\text{mA}$, $f=205\text{MHz}$	-	6.0	-	-	-	-	mW
P_o	$V_{CE}=10\text{V}$, $I_C=14\text{mA}$, $f=205\text{MHz}$	-	-	-	10	12	-	mW

TO-72 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.209	0.230	5.31	5.84
B (DIA)	0.175	0.195	4.45	4.95
C	-	0.030	-	0.76
D	0.170	0.210	4.32	5.33
E	0.500	-	12.70	-
F (DIA)	0.016	0.019	0.41	0.48
G (DIA)	0.100		2.54	
H	0.050		1.27	
J	0.036	0.046	0.91	1.17
K	0.028	0.048	0.71	1.22

TO-72 (REV: R1)

LEAD CODE:

- 1) Emitter
- 2) Base
- 3) Collector
- 4) Case

**MARKING:
FULL PART NUMBER**

R4 (13-March 2014)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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