

2N5088  
2N5089

SILICON  
NPN TRANSISTORS



TO-92 CASE



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N5088 and 2N5089 are silicon NPN transistors designed for low level, low noise amplifier applications.

**MARKING: FULL PART NUMBER**

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

Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance
Thermal Resistance

SYMBOL	2N5088	2N5089	UNITS
$V_{CB0}$	35	30	V
$V_{CE0}$	30	25	V
$V_{EBO}$	4.5		V
$I_C$	50		mA
$P_D$	625		mW
$T_J, T_{stg}$	-65 to +150		$^{\circ}\text{C}$
$\Theta_{JA}$	200		$^{\circ}\text{C}/\text{W}$
$\Theta_{JC}$	83.3		$^{\circ}\text{C}/\text{W}$

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

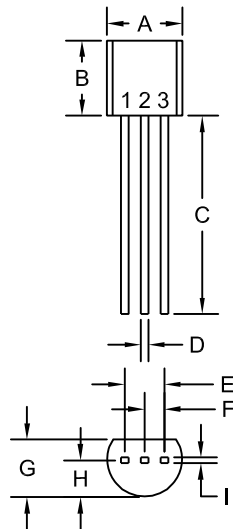
SYMBOL	TEST CONDITIONS	2N5088		2N5089		UNITS
		MIN	MAX	MIN	MAX	
$I_{CBO}$	$V_{CB}=20\text{V}$	-	50	-	-	nA
$I_{CBO}$	$V_{CB}=15\text{V}$	-	-	-	50	nA
$I_{EBO}$	$V_{EB}=3.0\text{V}$	-	50	-	50	nA
$I_{EBO}$	$V_{EB}=4.5\text{V}$	-	100	-	100	nA
$BV_{CB0}$	$I_C=100\mu\text{A}$	35	-	30	-	V
$BV_{CE0}$	$I_C=1.0\text{mA}$	30	-	25	-	V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	-	0.5	-	0.5	V
$V_{BE(ON)}$	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$	-	0.8	-	0.8	V
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=0.1\text{mA}$	300	900	400	1.2K	
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$	350	-	450	-	
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$	300	-	400	-	
$h_{fe}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	350	1.4K	450	1.8K	
$f_T$	$V_{CE}=5.0\text{V}, I_C=0.5\text{mA}, f=20\text{MHz}$	50	-	50	-	MHz
$C_{ob}$	$V_{CB}=5.0\text{V}, I_E=0, f=100\text{kHz}$	-	4.0	-	4.0	pF
$C_{ib}$	$V_{EB}=0.5\text{V}, I_C=0, f=100\text{kHz}$	-	15	-	15	pF
NF	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}, R_S=10\text{k}\Omega, f=10\text{Hz to } 15.7\text{kHz}$	-	3.0	-	2.0	dB

R1 (20-June 2016)

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TO-92 CASE - MECHANICAL OUTLINE



R1

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.175	0.205	4.45	5.21
B	0.170	0.210	4.32	5.33
C	0.500	-	12.70	-
D	0.016	0.022	0.41	0.56
E	0.100		2.54	
F	0.050		1.27	
G	0.125	0.165	3.18	4.19
H	0.080	0.105	2.03	2.67
I	0.015		0.38	

TO-92 (REV: R1)

LEAD CODE:

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

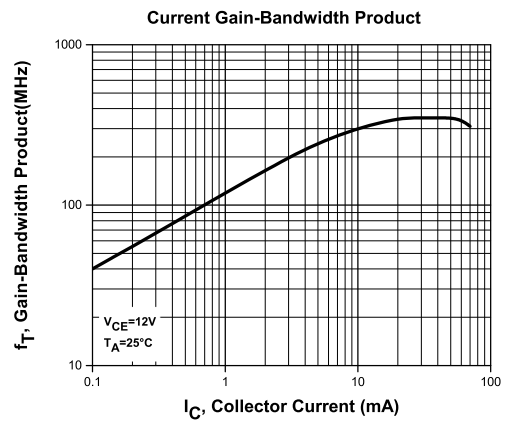
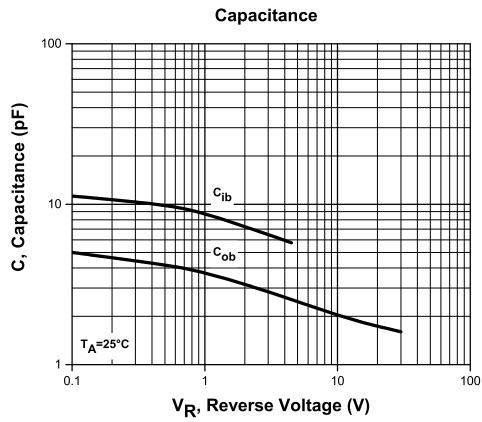
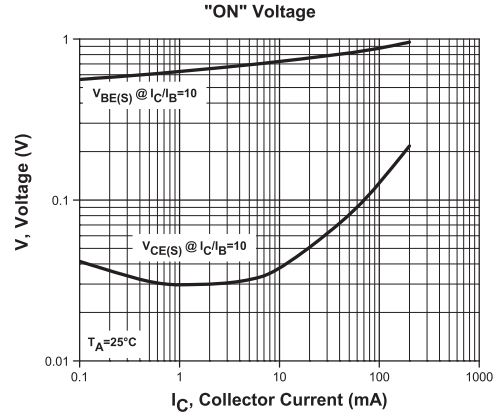
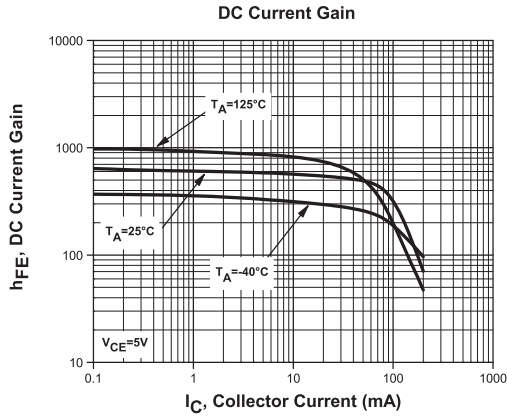
MARKING:  
 FULL PART NUMBER

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TYPICAL ELECTRICAL CHARACTERISTICS

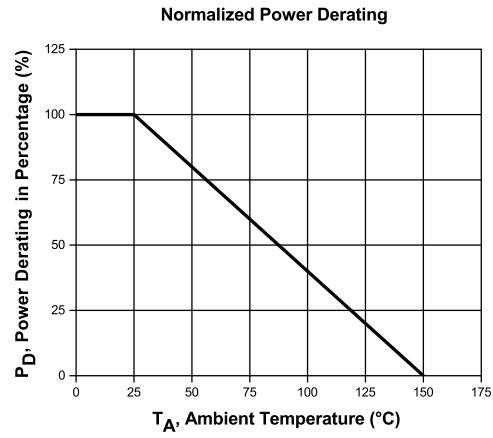


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## TYPICAL ELECTRICAL CHARACTERISTICS



R1 (20-June 2016)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2<sup>nd</sup> 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

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### 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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### CONTACT US

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