

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_{CBO}	35	30	V
V_{CEO}	30	25	V
V_{EBO}	4.5		V
I_C	50		mA
P_D	625		mW
T_J, T_{stg}	-65 to +150		$^{\circ}\text{C}$
Θ_{JA}	200		$^{\circ}\text{C/W}$
Θ_{JC}	83.3		$^{\circ}\text{C/W}$

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_{CBO}	$I_C=100\mu\text{A}$	35	-	30	-	V
BV_{CEO}	$I_C=1.0\text{mA}$	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

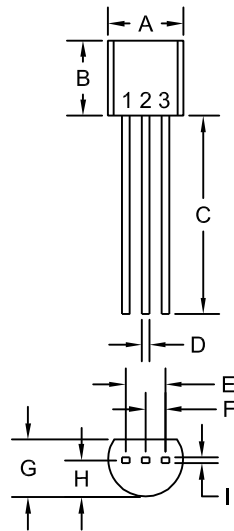
R1 (20-June 2016)

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TO-92 CASE - MECHANICAL OUTLINE



R1

SYMBOL	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

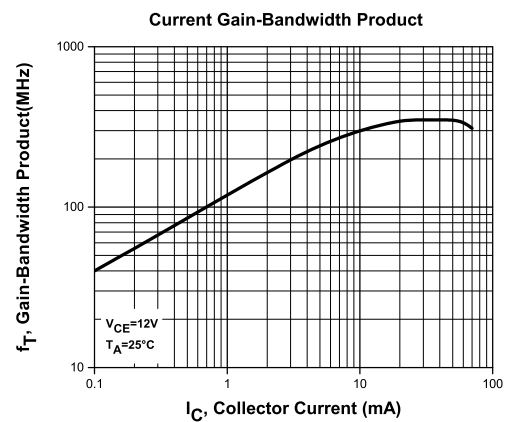
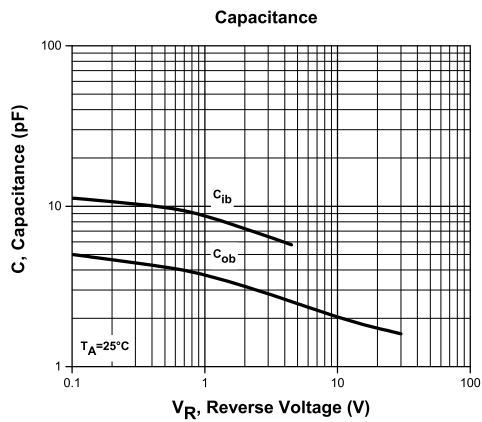
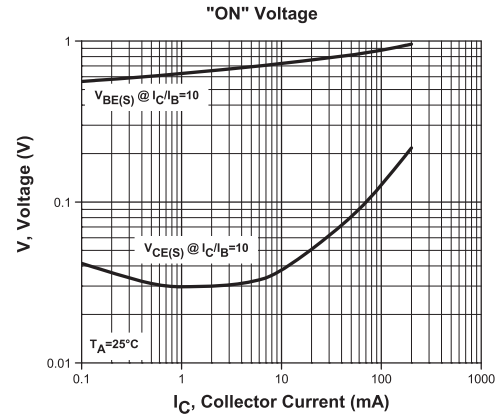
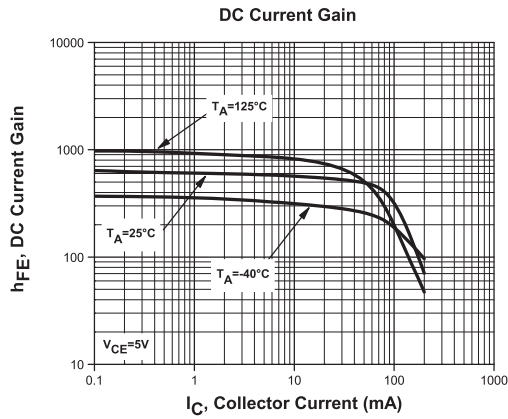
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TYPICAL ELECTRICAL CHARACTERISTICS



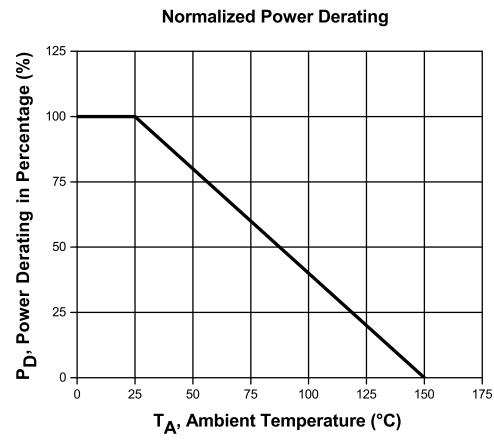
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TYPICAL ELECTRICAL CHARACTERISTICS



R1 (20-June 2016)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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).

CONTACT US

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