



THE DATASHEET OF
2N5089



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

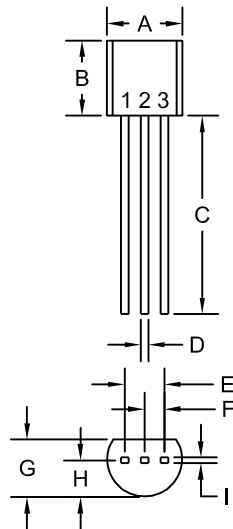
R1 (20-June 2016)

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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

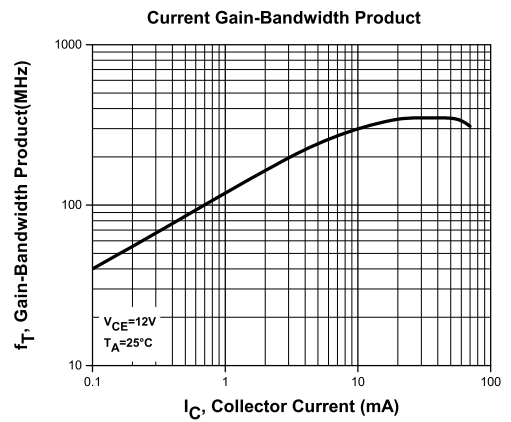
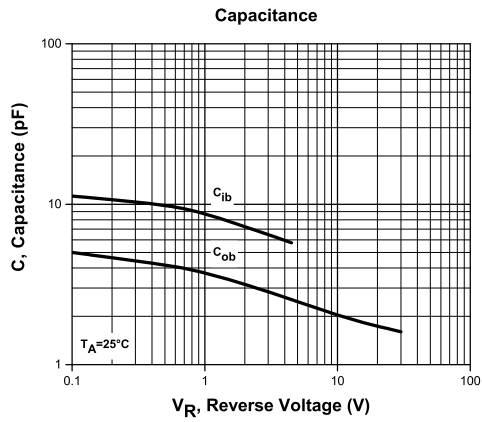
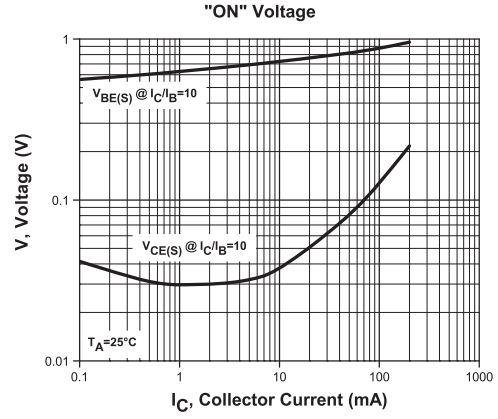
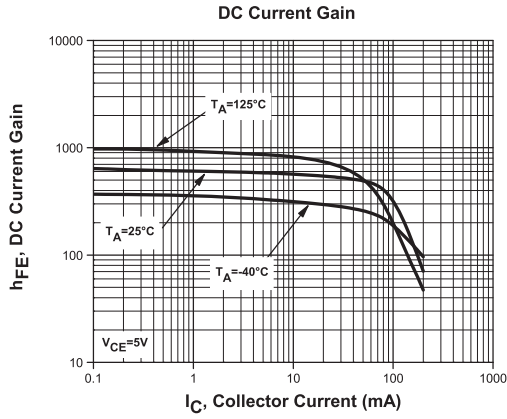
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TYPICAL ELECTRICAL CHARACTERISTICS



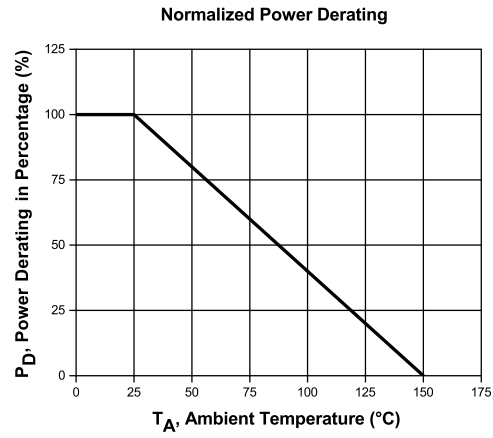
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TYPICAL ELECTRICAL CHARACTERISTICS



R1 (20-June 2016)

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