

2N4237
2N4238
2N4239

**SILICON
NPN TRANSISTORS**



TO-39 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N4237, 2N4238, and 2N4239 are silicon NPN transistors mounted in a hermetically sealed metal case, designed for power amplifier, power driver, and switching power supply applications.

MARKING: FULL PART NUMBER

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

	SYMBOL	2N4237	2N4238	2N4239	UNITS
Collector-Base Voltage	V_{CBO}	50	80	100	V
Collector-Emitter Voltage	V_{CEO}	40	60	80	V
Emitter-Base Voltage	V_{EBO}		6.0		V
Continuous Collector Current	I_C		3.0		A
Continuous Base Current	I_B		0.5		A
Power Dissipation	P_D		6.0		W
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +200		$^\circ\text{C}$
Thermal Resistance	θ_{JC}		29.2		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=\text{Rated } V_{CBO}$		100	μA
I_{CEV}	$V_{CE}=45\text{V}, V_{EB}=1.5\text{V}$ (2N4237)		100	μA
I_{CEV}	$V_{CE}=75\text{V}, V_{EB}=1.5\text{V}$ (2N4238)		100	μA
I_{CEV}	$V_{CE}=90\text{V}, V_{EB}=1.5\text{V}$ (2N4239)		100	μA
I_{CEV}	$V_{CE}=30\text{V}, V_{EB}=1.5\text{V}, T_C=150^\circ\text{C}$ (2N4237)		1.0	mA
I_{CEV}	$V_{CE}=50\text{V}, V_{EB}=1.5\text{V}, T_C=150^\circ\text{C}$ (2N4238)		1.0	mA
I_{CEV}	$V_{CE}=70\text{V}, V_{EB}=1.5\text{V}, T_C=150^\circ\text{C}$ (2N4239)		1.0	mA
I_{CEO}	$V_{CE}=\text{Rated } V_{CEO}$		700	μA
I_{EBO}	$V_{EB}=6.0\text{V}$		500	μA
BV_{CEO}	$I_C=100\text{mA}$ (2N4237)	40		V
BV_{CEO}	$I_C=100\text{mA}$ (2N4238)	60		V
BV_{CEO}	$I_C=100\text{mA}$ (2N4239)	80		V
$V_{CE(\text{SAT})}$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.3	V
$V_{CE(\text{SAT})}$	$I_C=1.0\text{A}, I_B=0.1\text{A}$		0.6	V
$V_{BE(\text{SAT})}$	$I_C=1.0\text{A}, I_B=0.1\text{A}$		1.5	V
$V_{BE(\text{ON})}$	$V_{CE}=1.0\text{V}, I_C=250\text{mA}$		1.0	V

R3 (26-March 2015)

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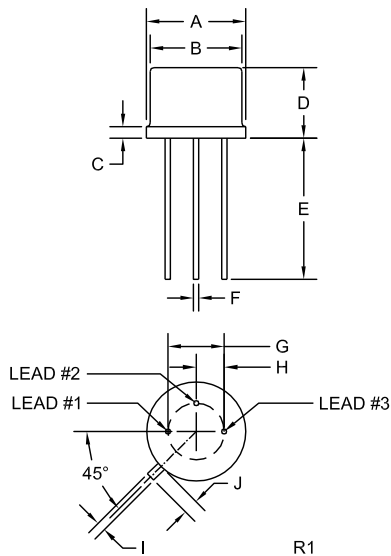
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ELECTRICAL CHARACTERISTICS - Continued: ($T_C=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	$V_{CE}=1.0\text{V}$, $I_C=50\text{mA}$	30		
h_{FE}	$V_{CE}=1.0\text{V}$, $I_C=250\text{mA}$	30	250	
h_{FE}	$V_{CE}=1.0\text{V}$, $I_C=500\text{mA}$	30		
h_{FE}	$V_{CE}=1.0\text{V}$, $I_C=1.0\text{A}$	15		
h_{fe}	$V_{CE}=10\text{V}$, $I_C=100\text{mA}$, $f=1.0\text{kHz}$	30		
f_T	$V_{CE}=10\text{V}$, $I_C=100\text{mA}$, $f=1.0\text{kHz}$	2.0		MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=100\text{kHz}$		100	pF

TO-39 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.335	0.370	8.51	9.40
B (DIA)	0.315	0.335	8.00	8.51
C	-	0.040	-	1.02
D	0.240	0.260	6.10	6.60
E	0.500	-	12.70	-
F (DIA)	0.016	0.021	0.41	0.53
G (DIA)	0.200		5.08	
H	0.100		2.54	
I	0.028	0.034	0.71	0.86
J	0.029	0.045	0.74	1.14

TO-39 (REV: R1)

LEAD CODE:

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

MARKING: FULL PART NUMBER

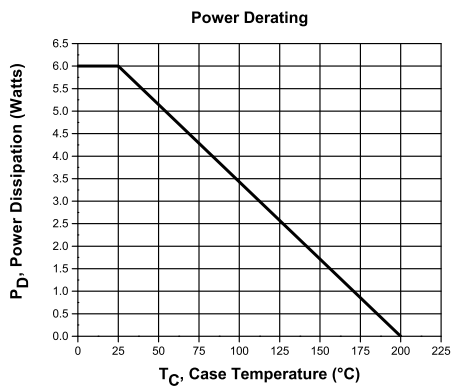
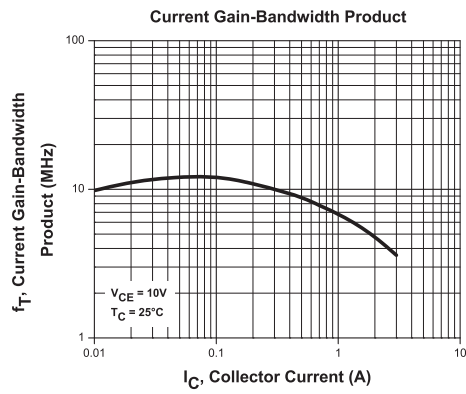
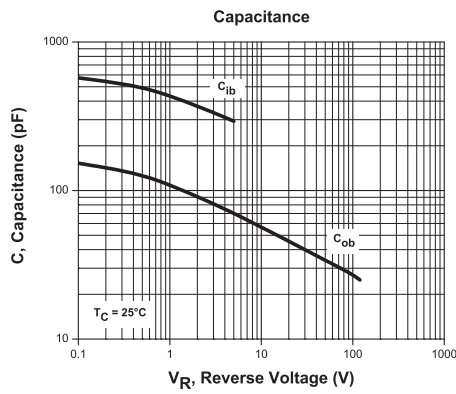
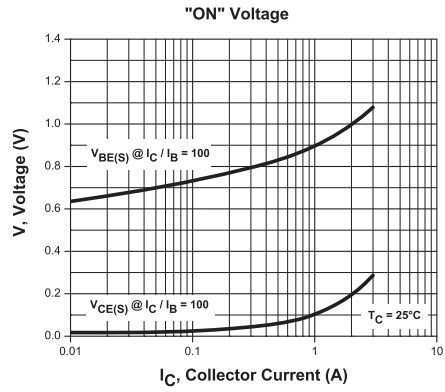
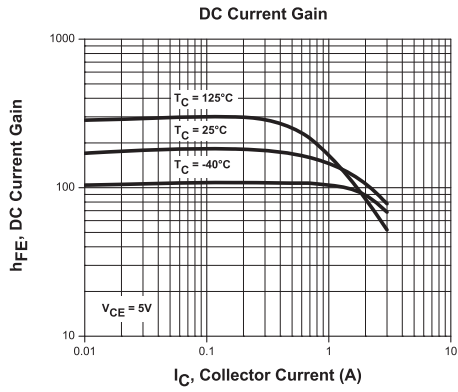
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TYPICAL ELECTRICAL CHARACTERISTICS



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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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