

2N5058
2N5059

SILICON
NPN TRANSISTORS



TO-39 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N5058 and 2N5059 are silicon NPN epitaxial planar transistors designed for high voltage general purpose amplifier applications.

MARKING: FULL PART NUMBER

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

Collector-Base Voltage	V_{CBO}	300	250	V
Collector-Emitter Voltage	V_{CEO}	300	250	V
Emitter-Base Voltage	V_{EBO}	7.0	6.0	V
Continuous Collector Current	I_C	150		mA
Power Dissipation	P_D	1.0		W
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	5.0		W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$
Thermal Resistance	θ_{JA}	150		$^\circ\text{C/W}$
Thermal Resistance	θ_{JC}	30		$^\circ\text{C/W}$

SYMBOL	2N5058	2N5059	UNITS
V_{CBO}	300	250	V
V_{CEO}	300	250	V
V_{EBO}	7.0	6.0	V
I_C	150		mA
P_D	1.0		W
P_D	5.0		W
T_J, T_{stg}	-65 to +200		$^\circ\text{C}$
θ_{JA}	150		$^\circ\text{C/W}$
θ_{JC}	30		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	2N5058		2N5059		UNITS
		MIN	MAX	MIN	MAX	
I_{CBO}	$V_{CB}=100\text{V}$	-	50	-	50	nA
I_{CBO}	$V_{CB}=100\text{V}, T_A=125^\circ\text{C}$	-	20	-	20	μA
I_{EBO}	$V_{EB}=5.0\text{V}$	-	10	-	10	nA
BV_{CBO}	$I_C=100\mu\text{A}$	300	-	250	-	V
BV_{CEO}	$I_C=30\text{mA}$	300	-	250	-	V
BV_{EBO}	$I_E=100\mu\text{A}$	7.0	-	6.0	-	V
$V_{CE(SAT)}$	$I_C=30\text{mA}, I_B=3.0\text{mA}$	-	1.0	-	1.0	V
$V_{BE(SAT)}$	$I_C=30\text{mA}, I_B=3.0\text{mA}$	-	0.85	-	0.85	V
$V_{BE(ON)}$	$V_{CE}=25\text{V}, I_C=30\text{mA}$	-	0.82	-	0.82	V
h_{FE}	$V_{CE}=25\text{V}, I_C=5.0\text{mA}$	10	-	-	10	
h_{FE}	$V_{CE}=25\text{V}, I_C=30\text{mA}$	35	150	30	150	
h_{FE}	$V_{CE}=25\text{V}, I_C=30\text{mA}, T_A=-55^\circ\text{C}$	10	-	-	-	
h_{FE}	$V_{CE}=25\text{V}, I_C=100\text{mA}$	35	-	30	-	
f_T	$V_{CE}=25\text{V}, I_C=10\text{mA}, f=20\text{MHz}$	30	160	30	160	MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$	-	10	-	10	pF
C_{ib}	$V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$	-	75	-	75	pF

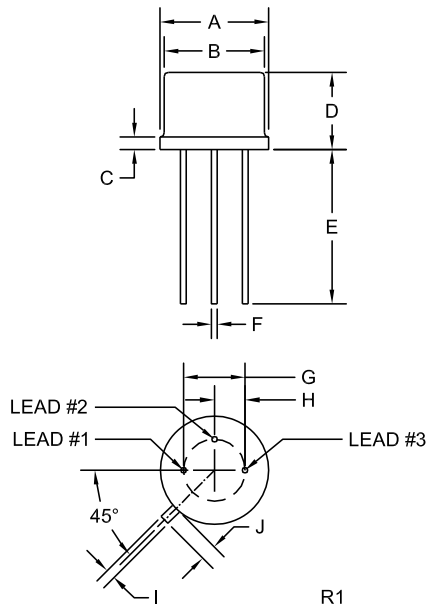
R1 (27-March 2015)

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TO-39 CASE - MECHANICAL OUTLINE



SYMBOL	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

R1 (27-March 2015)

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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