

2N6034 2N6035 2N6036 PNP  
2N6037 2N6038 2N6039 NPN

**COMPLEMENTARY SILICON  
DARLINGTON POWER  
TRANSISTORS**



**TO-18 CASE**



[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N6034, 2N6037 series devices are complementary silicon Darlington power transistors, manufactured by the epitaxial base process, designed for general purpose amplifier and switching applications.

**MARKING: FULL PART NUMBER**

<b>MAXIMUM RATINGS:</b> ( $T_C=25^\circ\text{C}$ unless otherwise noted)		<b>2N6034</b>	<b>2N6035</b>	<b>2N6036</b>	<b>UNITS</b>
<b>SYMBOL</b>	<b>2N6037</b>	<b>2N6038</b>	<b>2N6039</b>		
Collector-Base Voltage	$V_{CB0}$	40	60	80	V
Collector-Emitter Voltage	$V_{CEO}$	40	60	80	V
Emitter-Base Voltage	$V_{EBO}$		5.0		V
Continuous Collector Current	$I_C$		4.0		A
Peak Collector Current	$I_{CM}$		8.0		A
Continuous Base Current	$I_B$		100		mA
Power Dissipation	$P_D$		40		W
Power Dissipation ( $T_A=25^\circ\text{C}$ )	$P_D$		1.5		W
Operating and Storage Junction Temperature	$T_J, T_{stg}$		-65 to +150		$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$		83.3		$^\circ\text{C/W}$
Thermal Resistance	$\theta_{JC}$		3.12		$^\circ\text{C/W}$

<b>ELECTRICAL CHARACTERISTICS:</b> ( $T_C=25^\circ\text{C}$ unless otherwise noted)		<b>MIN</b>	<b>MAX</b>	<b>UNITS</b>
<b>SYMBOL</b>	<b>TEST CONDITIONS</b>			
$I_{CBO}$	$V_{CB}=\text{Rated } V_{CB0}$		500	$\mu\text{A}$
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CEO}, V_{BE}=1.5\text{V}$		100	$\mu\text{A}$
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CEO}, V_{BE}=1.5\text{V}, T_C=125^\circ\text{C}$		500	$\mu\text{A}$
$I_{CEO}$	$V_{CE}=\text{Rated } V_{CEO}$		100	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=5.0\text{V}$		2.0	mA
$BV_{CEO}$	$I_C=100\text{mA}$ (2N6034, 2N6037)	40		V
$BV_{CEO}$	$I_C=100\text{mA}$ (2N6035, 2N6038)	60		V
$BV_{CEO}$	$I_C=100\text{mA}$ (2N6036, 2N6039)	80		V
$V_{CE(SAT)}$	$I_C=2.0\text{A}, I_B=8.0\text{mA}$		2.0	V
$V_{CE(SAT)}$	$I_C=4.0\text{A}, I_B=40\text{mA}$		3.0	V
$V_{BE(SAT)}$	$I_C=4.0\text{A}, I_B=40\text{mA}$		4.0	V
$V_{BE(ON)}$	$V_{CE}=3.0\text{V}, I_C=2.0\text{A}$		2.8	V
$h_{FE}$	$V_{CE}=3.0\text{V}, I_C=500\text{mA}$	500		
$h_{FE}$	$V_{CE}=3.0\text{V}, I_C=2.0\text{A}$	750	15K	
$h_{FE}$	$V_{CE}=3.0\text{V}, I_C=4.0\text{A}$	100		
$f_T$	$V_{CE}=10\text{V}, I_C=750\text{mA}, f=1.0\text{MHz}$	25		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (PNP)		200	pF
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (NPN)		100	pF

R1 (12-March 2014)

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**TO-126 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

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

**MARKING:**

**FULL PART NUMBER**

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.094	0.110	2.40	2.80
B	0.050		1.27	
C	0.015	0.030	0.38	0.75
D	0.291	0.335	7.40	8.50
E	0.148		3.75	
F	0.118	0.134	3.00	3.40
G	0.413	0.472	10.50	12.00
H	0.618		15.70	
J	0.024	0.035	0.62	0.90
K	0.089		2.25	
L	0.177		4.50	
M	0.045	0.055	1.14	1.40
N	0.083		2.10	

TO-126 (REV:R3)

R1 (12-March 2014)

## 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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