

2N6294 2N6295 NPN  
2N6296 2N6297 PNP

**COMPLEMENTARY SILICON  
DARLINGTON POWER TRANSISTORS**



**TO-66 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N6294, 2N6296 series devices are complementary silicon Darlington power transistors, manufactured by the epitaxial base process, designed for high gain amplifier and medium speed switching applications.

**MARKING: FULL PART NUMBER**

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

Collector-Base Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Continuous Collector Current  
Peak Collector Current  
Continuous Base Current  
Power Dissipation  
Operating and Storage Junction Temperature  
Thermal Resistance

SYMBOL	2N6294	2N6295	UNITS
	2N6296	2N6297	
$V_{CBO}$	60	80	V
$V_{CEO}$	60	80	V
$V_{EBO}$		5.0	V
$I_C$		4.0	A
$I_{CM}$		8.0	A
$I_B$		80	mA
$P_D$		50	W
$T_J, T_{stg}$		-65 to +200	$^\circ\text{C}$
$\theta_{JC}$		3.5	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CEO}, V_{EB}=1.5\text{V}$		0.5	mA
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CEO}, V_{EB}=1.5\text{V}, T_C=150^\circ\text{C}$		5.0	mA
$I_{CEO}$	$V_{CE}=\frac{1}{2}\text{Rated } V_{CEO}$		0.5	mA
$I_{EBO}$	$V_{EB}=5.0\text{V}$		2.0	mA
$BV_{CEO}$	$I_C=50\text{mA}, (2\text{N}6294, 2\text{N}6296)$	60		V
$BV_{CEO}$	$I_C=50\text{mA}, (2\text{N}6295, 2\text{N}6297)$	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
$h_{FE}$	$V_{CE}=3.0\text{V}, I_C=2.0\text{A}$	750	18K	
$h_{FE}$	$V_{CE}=3.0\text{V}, I_C=4.0\text{A}$	100		
$h_{fe}$	$V_{CE}=3.0\text{V}, I_C=1.5\text{A}, f=1.0\text{kHz}$	300		
$f_T$	$V_{CE}=3.0\text{V}, I_C=1.5\text{A}, f=1.0\text{MHz}$	4.0		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (NPN types)		120	pF
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (PNP types)		200	pF

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TO-66 CASE - MECHANICAL OUTLINE



Seating Plane:  
 The seating plane must be  
 within 0.001" concave to  
 0.004" convex within  
 0.600" diameter from the  
 center of the device.

MARKING:  
 FULL PART NUMBER

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.470	0.500	11.94	12.70
B	0.250	0.340	6.35	8.64
C	0.360	-	9.14	-
D	0.050	0.075	1.27	1.91
E (DIA)	0.028	0.034	0.71	0.86
F	0.956	0.964	24.28	24.48
G	0.570	0.590	14.48	14.99
H	0.190	0.210	4.83	5.33
I	0.093	0.107	2.36	2.72
J (DIA)	0.142	0.152	3.61	3.86
K (RAD)	0.141		3.58	
L (RAD)	0.345		8.76	

TO-66 (REV:R3)

R2 (2-September 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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