

2N6294 2N6295 NPN
2N6296 2N6297 PNP

**COMPLEMENTARY SILICON
DARLINGTON POWER TRANSISTORS**



TO-66 CASE



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

	SYMBOL	2N6294 2N6296	2N6295 2N6297	UNITS
Collector-Base Voltage	V_{CBO}	60	80	V
Collector-Emitter Voltage	V_{CEO}	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		80	mA
Power Dissipation	P_D		50	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$
Thermal Resistance	θ_{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
$V_{CE(\text{SAT})}$	$I_C=2.0\text{A}, I_B=8.0\text{mA}$		2.0	V
$V_{CE(\text{SAT})}$	$I_C=4.0\text{A}, I_B=40\text{mA}$		3.0	V
$V_{BE(\text{SAT})}$	$I_C=4.0\text{A}, I_B=40\text{mA}$		4.0	V
$V_{BE(\text{ON})}$	$V_{CE}=3.0\text{V}, I_C=2.0\text{A}$		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		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



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.

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- Custom electrical curves
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