

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N6294 2N6295 NPN

2N6296 2N6297 PNP

COMPLEMENTARY SILICON DARLINGTON  
POWER TRANSISTORS

JEDEC TO-66 CASE

## DESCRIPTION

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

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

	SYMBOL	2N6294 2N6296	2N6295 2N6297	UNIT
Collector-Base Voltage	$V_{CB0}$	60	80	V
Collector-Emitter Voltage	$V_{CE0}$	60	80	V
Emitter-Base Voltage	$V_{EBO}$		5.0	V
Collector Current	$I_C$		4.0	A
Collector Current-Peak	$I_{CM}$		8.0	A
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	$\theta_{JC}$	3.5		$^\circ\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	2N6294 2N6296		2N6295 2N6297		UNIT
		MIN	MAX	MIN	MAX	
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CB0}, V_{EB}(\text{OFF})=1.5\text{V}$		0.5		0.5	mA
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CB0}, V_{EB}(\text{OFF})=1.5\text{V}, T_C=150^\circ\text{C}$		5.0		5.0	mA
$I_{CEO}$	$V_{CE}=\frac{1}{2}\text{Rated } V_{CE0}$		0.5		0.5	mA
$I_{EBO}$	$V_{BE}=5.0\text{V}$		2.0		2.0	mA
$BV_{CE0}$	$I_C=50\text{mA}$	60		80		V
$V_{CE}(\text{SAT})$	$I_C=2.0\text{A}, I_B=8.0\text{mA}$		2.0		2.0	V
$V_{CE}(\text{SAT})$	$I_C=4.0\text{A}, I_B=40\text{mA}$		3.0		3.0	V
$V_{BE}(\text{SAT})$	$I_C=4.0\text{A}, I_B=40\text{mA}$		4.0		4.0	V
$V_{BE}(\text{ON})$	$V_{CE}=3.0\text{V}, I_C=2.0\text{A}$		2.8		2.8	V
$h_{FE}$	$V_{CE}=3.0\text{V}, I_C=2.0\text{A}$	750	18K	750	18K	
$h_{FE}$	$V_{CE}=3.0\text{V}, I_C=4.0\text{A}$	100	-	100	-	
$h_{fe}$	$V_{CE}=3.0\text{V}, I_C=1.5\text{A}, f=1.0\text{kHz}$	300	-	300	-	
$f_T$	$V_{CE}=3.0\text{V}, I_C=1.5\text{A}, f=1.0\text{MHz}$	4.0		4.0		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$ (NPN Types)		120		120	pF
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$ (PNP Types)		200		200	pF