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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	θ_{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