

**2N6294, 2N6295 NPN**  
**2N6296, 2N6297 PNP**

**DARLINGTON COMPLEMENTARY  
 SILICON POWER TRANSISTORS**

... designed for general-purpose amplifier, low-frequency switching and hammer driver applications.

- High DC Current Gain –  
 $h_{FE} = 3000$  (Typ) @  $I_C = 2.0$  Adc
- Low Collector-Emitter Saturation Voltage –  
 $V_{CE(sat)} = 2.0$  Vdc (Max) @  $I_C = 2.0$  Adc
- Collector-Emitter Sustaining Voltage  
 $V_{CE(sus)} = 60$  Vdc (Min) – 2N6294, 2N6296  
 $= 80$  Vdc (Min) – 2N6295, 2N6297
- Monolithic Construction with Built-In Base-Emitter Shunt Resistors

**4 AMPERES  
 DARLINGTON  
 COMPLEMENTARY SILICON  
 POWER TRANSISTORS**

**60, 80 VOLTS  
 50 WATTS**



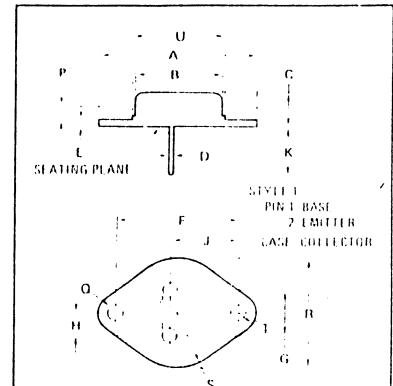
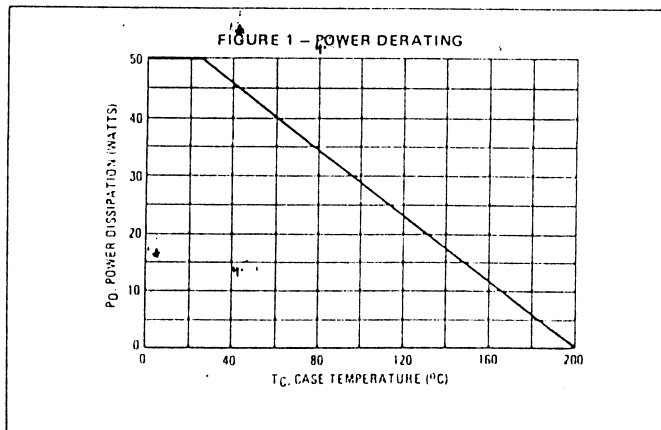
**\* MAXIMUM RATINGS**

Rating	Symbol	2N6294 2N6296	2N6295 2N6297	Unit
Collector-Emitter Voltage	$V_{CEO}$	60	80	Vdc
Collector-Base Voltage	$V_{CB}$	60	80	Vdc
Emitter-Base Voltage	$V_{EB}$	5.0		Vdc
Collector Current – Continuous	$I_C$	4.0	8.0	Arc
Peak		8.0		
Base Current	$I_B$	80		mArc
Total Device Dissipation @ $T_C = 25^\circ\text{C}$	$P_D$	50		Watts
Derate above $25^\circ\text{C}$		0.286		W/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200		$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.5	$^\circ\text{C/W}$

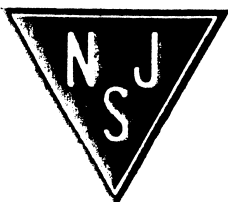
\*Indicates JEDEC Registered Data



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
B	11.94	12.70	0.470	0.500
C	6.35	8.64	0.250	0.340
D	0.71	0.86	0.028	0.034
E	1.27	1.91	0.050	0.075
F	24.33	24.43	0.958	0.962
G	4.83	5.33	0.190	0.210
H	2.41	2.67	0.095	0.105
J	14.48	14.99	0.570	0.590
K	9.14		0.360	
P		1.27		0.050
Q	3.61	3.86	0.142	0.152
S		8.89		0.350
T		3.68		0.145
U		15.75		0.620

All JEDEC Dimensions and all Notes Apply.

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

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Sustaining Voltage ( $I_C = 50 \text{ mAdc}, I_B = 0$ )	$V_{CE0(sus)}$	60 80	-	Vdc
Collector Cutoff Current ( $V_{CE} = 30 \text{ Vdc}, I_B = 0$ ) ( $V_{CE} = 40 \text{ Vdc}, I_B = 0$ )	$I_{CEO}$	-	0.5 0.5	mAdc
Collector Cutoff Current ( $V_{CE} = \text{Rated } V_{CB}, V_{EB(off)} = 1.5 \text{ Vdc}$ ) ( $V_{CE} = \text{Rated } V_{CB}, V_{BE(off)} = 1.5 \text{ Vdc}$ ) ( $V_{CE} = \text{Rated } V_{CB}, V_{EB(off)} = 1.5 \text{ Vdc}, T_C = 150^\circ\text{C}$ ) ( $V_{CE} = \text{Rated } V_{CB}, V_{BE(off)} = 1.5 \text{ Vdc}, T_C = 150^\circ\text{C}$ )	$I_{CEX}$	-	0.5 0.5 5.0 5.0	mAdc
Emitter Cutoff Current ( $V_{BE} = 5.0 \text{ Vdc}, I_C = 0$ )	$I_{EBO}$	-	2.0	mAdc
<b>ON CHARACTERISTICS</b>				
DC Current Gain ( $I_C = 2.0 \text{ Adc}, V_{CE} = 3.0 \text{ Vdc}$ ) ( $I_C = 4.0 \text{ Adc}, V_{CE} = 3.0 \text{ Vdc}$ )	$h_{FE}$	750 100	18000	-
Collector-Emitter Saturation Voltage ( $I_C = 2.0 \text{ Adc}, I_B = 8.0 \text{ mAdc}$ ) ( $I_C = 4.0 \text{ Adc}, I_B = 40 \text{ mAdc}$ )	$V_{CE(sat)}$	-	2.0 3.0	Vdc
Base-Emitter Saturation Voltage ( $I_C = 4.0 \text{ Adc}, I_B = 40 \text{ mAdc}$ )	$V_{BE(sat)}$	-	4.0	Vdc
Base-Emitter On Voltage ( $I_C = 2.0 \text{ Adc}, V_{CE} = 3.0 \text{ Vdc}$ )	$V_{BE(on)}$	-	2.8	Vdc
<b>DYNAMIC CHARACTERISTICS</b>				
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio ( $I_C = 1.5 \text{ Adc}, V_{CE} = 3.0 \text{ Vdc}, f = 1.0 \text{ MHz}$ )	$ h_{fe} $	40	-	-
Output Capacitance ( $V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 0.1 \text{ MHz}$ )	$C_{ob}$	-	120 200	pF
Small-Signal Current Gain ( $I_C = 1.5 \text{ Adc}, V_{CE} = 3.0 \text{ Vdc}, f = 1.0 \text{ kHz}$ )	$h_{fi}$	300	-	-

\*Indicates JEDEC Registered Data