

BD896 – BD898 – BD900 – BD902

SILICON DARLINGTON POWER TRANSISTORS

PNP epitaxial-base transistors in a monolithic Darlington circuit and housed in a TO-220 envelope. They are intended for use in output stages in audio equipment, general amplifiers, and analogue switching application.

NPN complements are BD895 - BD897 - BD899 - BD901

Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CBO}	Collector-Base Voltage	BD896	-45	V
		BD898	-60	
		BD900	-80	
		BD902	-100	
V_{CEO}	Collector-Emitter Voltage	BD896	-45	V
		BD898	-60	
		BD900	-80	
		BD902	-100	
V_{EBO}	Emitter-Base Voltage	BD896	-5	V
		BD898		
		BD900		
		BD902		
I_C	Collector Current	BD896	-8	A
		BD898		
		BD900		
		BD902		
I_B	Base Current	BD896	-300	mA
		BD898		
		BD900		
		BD902		
P_T	Power Dissipation	$T_c = 25^\circ$	70	Watts
		$T_a = 25^\circ$	2	
T_J	Junction Temperature		150	$^\circ\text{C}$
T_s	Storage Temperature range		-65 to +150	

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)			Min	Typ	Max	Unit		
I _{CBO}	Collector Cutoff Current	I _E = 0 V _{CB} = -45 V	T _C =25°C	BD896	-	-	-0.2	mA		
		I _E = 0 V _{CB} = -60 V		BD898						
		I _E = 0 V _{CB} = -80 V		BD900						
		I _E = 0 V _{CB} = -100 V		BD902						
		I _E = 0 V _{CB} = -45 V	T _C =100° C	BD896	-	-	-2	mA		
		I _E = 0 V _{CB} = -60 V		BD898						
		I _E = 0 V _{CB} = -80 V		BD900						
		I _E = 0 V _{CB} = -100 V		BD902						
		I _{CEO}	Collector Cutoff Current	I _E = 0, V _{CE} = - 30 V		BD896	-	-	-0.5	mA
				I _E = 0, V _{CE} = - 30 V		BD898				
I _E = 0, V _{CE} = - 40 V				BD900						
I _E = 0, V _{CE} = - 50 V				BD902						
I _{EBO}	Emitter Cutoff Current	V _{EB} = -5 V, I _C = 0		BD896	-	-	-2	mA		
				BD898						
				BD900						
				BD902						
V _{CEO}	Collector-Emitter Breakdown Voltage (*)	I _C = -100 mA, I _B = 0		BD896	-45	-	-	V		
				BD898	-60	-	-			
				BD900	-80	-	-			
				BD902	-100	-	-			
V _{CE(SAT)}	Collector-Emitter saturation Voltage (*)	I _C = -3 A, I _B = -12 mA		BD896	-	-	-2.5	V		
				BD898						
				BD900						
				BD902						

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings			Min	Typ	Max	Unit
$V_{BE(on)}$	Base-Emitter Voltage (*)	$I_C = -3\text{ A}$, $V_{CE} = -3\text{ V}$	BD896	-	-	-2.5	V
			BD898				
			BD900				
			BD902				
h_{FE}	DC Current Gain (*)	$V_{CE} = -3.0\text{ V}$ $I_C = -3\text{ A}$	BD896	750	-	-	-
			BD898				
			BD900				
			BD902				
V_{ECF}	C-E Diode Forward Voltage	$I_E = -8\text{ A}$	BD896	-	-	-3.5	V
			BD898				
			BD900				
			BD902				

SWITCHING TIMES

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
t_{on}	turn-on time	$I_C = -3\text{ A}$, $V_{BE(off)} = 3.5\text{ V}$ $I_{B(on)} = -I_{B(off)} = -12\text{ mA}$, $R_L = 10\ \Omega$	-	1	-	μs
t_{off}	turn-off time		-	5	-	

(*) Pulse Width $\approx 300\ \mu\text{s}$, Duty Cycle $\angle 2.0\%$

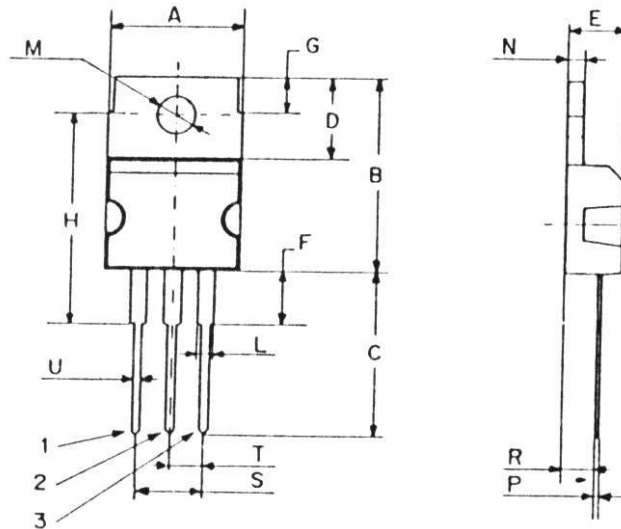
THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-C}	Thermal Resistance Junction To Case	1.79	$^{\circ}\text{C/W}$
R_{thJ-A}	Thermal Resistance Junction To Free Air	62.5	$^{\circ}\text{C/W}$

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MECHANICAL DATA CASE TO-220

DIMENSIONS (mm)		
	Min.	Max.
A	9,90	10,30
B	15,65	15,90
C	13,20	13,40
D	6,45	6,65
E	4,30	4,50
F	2,70	3,15
G	2,60	3,00
H	15,75	17,15
L	1,15	1,40
M	3,50	3,70
N	-	1,37
P	0,46	0,55
R	2,50	2,70
S	4,98	5,08
T	2,49	2,54
U	0,70	0,90



Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter
Package	Collector

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