

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	°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	$I_E = 0$ $V_{CB} = -45\text{ V}$	$T_C = 25^\circ\text{C}$	BD896	-	-	-0.2	mA
		$I_E = 0$ $V_{CB} = -60\text{ V}$		BD898				
		$I_E = 0$ $V_{CB} = -80\text{ V}$		BD900				
		$I_E = 0$ $V_{CB} = -100\text{ V}$		BD902				
		$I_E = 0$ $V_{CB} = -45\text{ V}$	$T_C = 100^\circ\text{C}$	BD896	-	-	-2	mA
		$I_E = 0$ $V_{CB} = -60\text{ V}$		BD898				
		$I_E = 0$ $V_{CB} = -80\text{ V}$		BD900				
		$I_E = 0$ $V_{CB} = -100\text{ V}$		BD902				
I_{CEO}	Collector Cutoff Current	$I_E = 0, V_{CE} = -30\text{ V}$	BD896	-	-	-0.5	mA	
		$I_E = 0, V_{CE} = -30\text{ V}$	BD898					
		$I_E = 0, V_{CE} = -40\text{ V}$	BD900					
		$I_E = 0, V_{CE} = -50\text{ V}$	BD902					
I_{EBO}	Emitter Cutoff Current	$V_{EB} = -5\text{ V}, I_C = 0$	BD896	-	-	-2	mA	
			BD898					
			BD900					
			BD902					
V_{CEO}	Collector-Emitter Breakdown Voltage (*)	$I_C = -100\text{ mA}, I_B = 0$	BD896	-45	-	-	V	
			BD898	-60	-	-		
			BD900	-80	-	-		
			BD902	-100	-	-		
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = -3\text{ A}, I_B = -12\text{ mA}$	BD896	-	-	-2.5	V	
			BD898					
			BD900					
			BD902					

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ELECTRICAL CHARACTERISTICS

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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	$I_C = -3\text{ A}, V_{BE(off)} = 3.5\text{ V}$ $I_{Bon} = -I_{Boff} = -12\text{ mA}, R_L = 10\ \Omega$	-	1	-	μs
t_{off}	turn-off time		-	5	-	

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

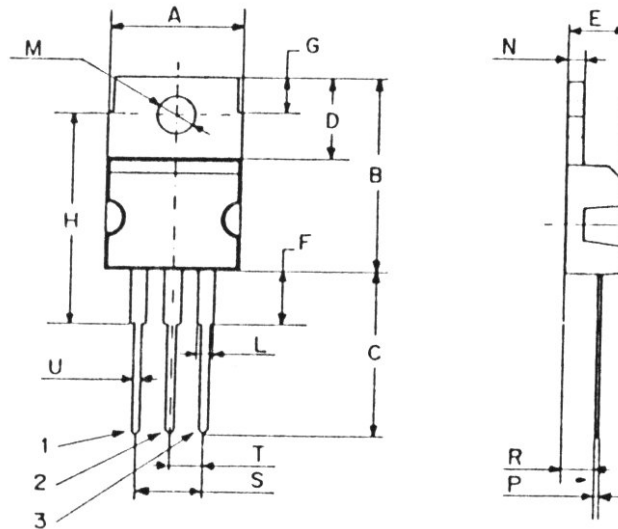
THERMAL CHARACTERISTICS

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

Revised August 2012

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