



PNP BDW84 – BDW84A – BDW84B BDW84C – BDW84D

PNP SILICON DARLINGTONS POWER TRANSISTORS

They are silicon epitaxial-base PNP power monolithic Darlington transistor mounted in Jedec TO-3PN plastic package.

They are intended for use in power linear and switching applications.

The complementary are BDW83, BDW83A, BDW83B, BDW83C, BDW83D

Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
V_{CEO}	Collector-Emitter Voltage	$I_B = 0$	BDW84	-45	V
			BDW84A	-60	
			BDW84B	-80	
			BDW84C	-100	
			BDW84D	-120	
V_{CBO}	Collector- Emitter Voltage	$I_E = 0$	BDW84	-45	V
			BDW84A	-60	
			BDW84B	-80	
			BDW84C	-100	
			BDW84D	-120	
V_{EBO}	Emitter-Base Voltage	$I_C = 0$	-5	V	
I_C	Collector Current		-15	A	
I_B	Base Current		-0.5	A	
P_t	Total Power Dissipation	25°C case temperature	150	W	
		25°C free air temperature	3.5		
T_J	Junction Temperature		-65 to +150	°C	
T_{Stg}	Storage Temperature		-65 to +150	°C	

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJC}	Junction to Case Thermal Resistance	0.83	°C/W
R_{thJA}	Junction to Free Air Thermal Resistance	35.7	

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ELECTRICAL CHARACTERISTICS

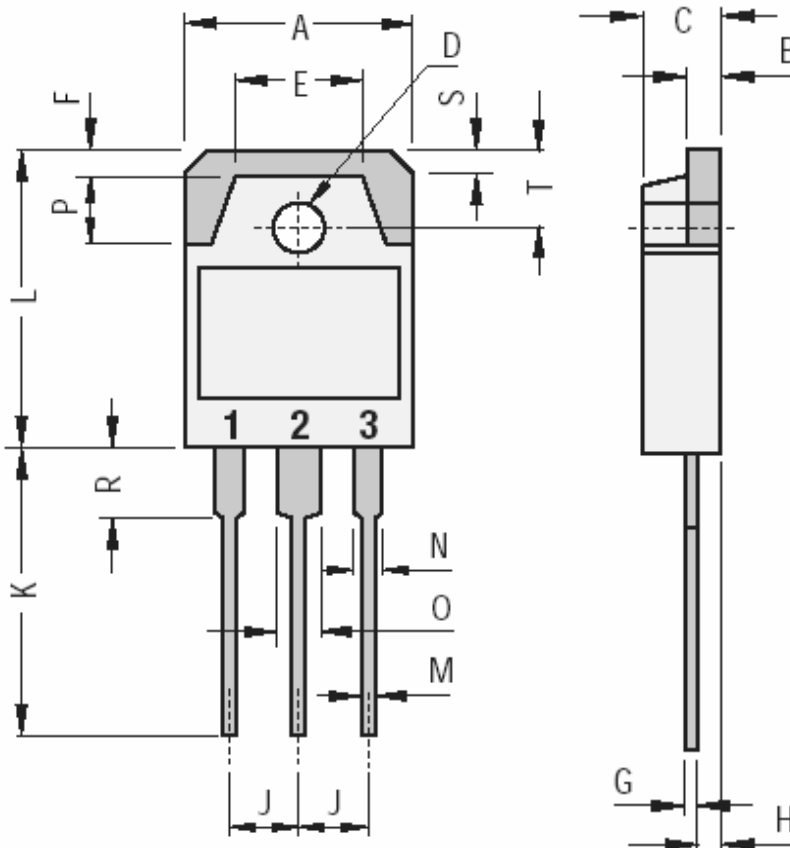
TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (*)	$I_C=30\text{ mA}$ $I_B=0$	BDW84	-45	-	-	V
			BDW84A	-60	-	-	
			BDW84B	-80	-	-	
			BDW84C	-100	-	-	
			BDW84D	-120	-	-	
I_{CEO}	Collector Cutoff Current	$I_B=0, V_{CE}=-30\text{ V}$	BDW84	-	-	-1	mA
		$I_B=0, V_{CE}=-30\text{ V}$	BDW84A				
		$I_B=0, V_{CE}=-40\text{ V}$	BDW84B				
		$I_B=0, V_{CE}=-50\text{ V}$	BDW84C				
		$I_B=0, V_{CE}=-60\text{ V}$	BDW84D				
I_{CBO}	Collector Cutoff Current	$I_E=0, V_{CB}=-45\text{ V}$	BDW84	-	-	-0.5	mA
		$I_E=0, V_{CB}=-60\text{ V}$	BDW84A				
		$I_E=0, V_{CB}=-80\text{ V}$	BDW84B				
		$I_E=0, V_{CB}=-100\text{ V}$	BDW84C				
		$I_E=0, V_{CB}=-120\text{ V}$	BDW84D				
		$V_{CB}=-45\text{ V}, I_E=0$ $T_{case} = 150^\circ\text{C}$	BDW84	-	-	-5	
		$V_{CB}=-60\text{ V}, I_E=0$ $T_{case} = 150^\circ\text{C}$	BDW84A				
		$V_{CB}=-80\text{ V}, I_E=0$ $T_{case} = 150^\circ\text{C}$	BDW84B				
		$V_{CB}=-100\text{ V}, I_E=0$ $T_{case} = 150^\circ\text{C}$	BDW84C				
		$V_{CB}=-120\text{ V}, I_E=0$ $T_{case} = 150^\circ\text{C}$	BDW84D				
I_{EBO}	Emitter Cutoff Current	$V_{EB}=-5.0\text{ V}, I_C=0$	-	-	-2	mA	
h_{FE}	DC Current Gain (*)	$I_C=-6\text{ A}, V_{CE}=-3.0\text{ V}$	750	-	20 K	-	
		$I_C=-15\text{ A}, V_{CE}=-3.0\text{ V}$	100	-	-		
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=-6\text{ A}, I_B=-12\text{ mA}$	-	-	-2.5	V	
		$I_C=-15\text{ A}, I_B=-150\text{ mA}$	-	-	-4		
$V_{BE(on)}$	Base-Emitter Voltage (*)	$I_C=-6\text{ A}, I_B=-3\text{ A}$	-	-	-2.5	V	
V_{EC}	Parallel Diode Forward Voltage	$I_E=-15\text{ A}, I_E=0$	-	-	-3.5	V	
t_{on}	Turn-on time	$I_C = -10\text{ A},$ $I_{B1} = -I_{B2} = -40\text{ mA}$	-	0.9	-	μs	
t_{off}	Turn-off time	$R_L=3\Omega; V_{BE(off)} = 4.2\text{ V}$ Duty Cycle $\leq 2\%$	-	7	-		

(*) Pulse Duration = 300 μs , Duty Cycle $\leq 2\%$

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MECHANICAL DATA CASE TO3PN Non Isolated Plastic Package



DIMENSIONS (mm)		
	Min.	Max.
A	15.20	1600
B	1.90	2.10
C	4.60	5.00
D	3.10	3.30
E		9.60
F		2.00
G	0.35	0.55
H		1.40
J	5.35	5.55
K	20.00	
L	19.60	20.20
M	0.95	1.25
N		2.00
O		3.00
P		4.00
R		4.00
S		1.80
T	4.80	5.20

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

The centre pin is in electrical contact with the mounting tab.

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