



## 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

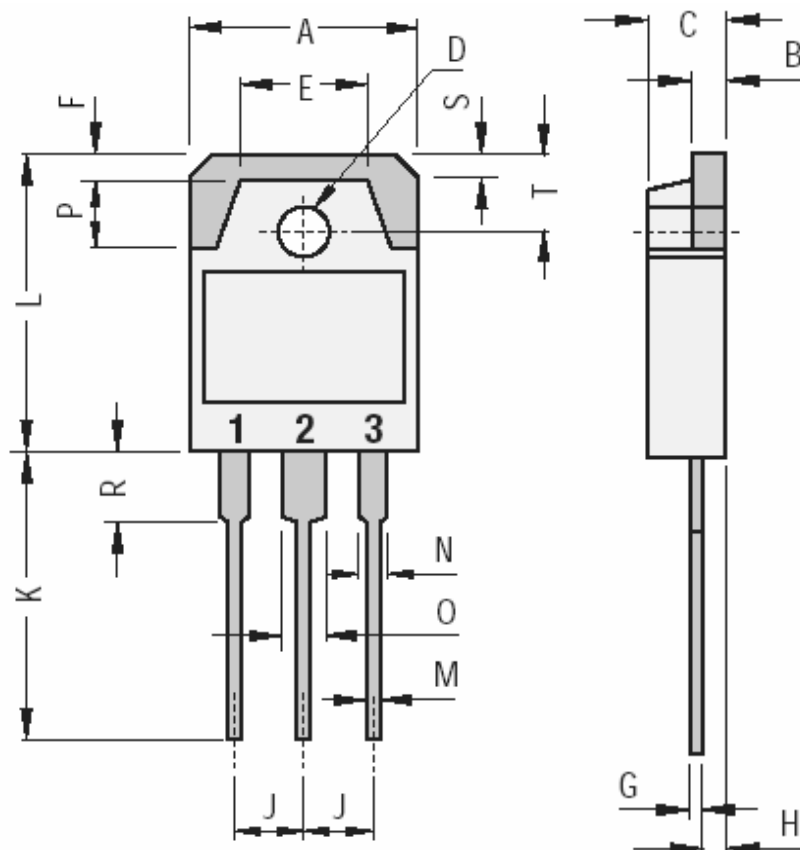
TC=25°C unless otherwise noted

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	-	$\mu\text{s}$	
$t_{off}$	Turn-off time	$R_L=3\Omega; V_{BE(off)} = 4.2\text{ V}$ Duty Cycle $\leq 2\%$	-	7	-		

(\*) Pulse Duration = 300  $\mu\text{s}$ , 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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