NPN BDW83, BDW83A, BDW83B, BDW83C, BDW83D,

NPN SILICON DARLINGTONS POWER TRANSISTORS

They are silicon epitaxial-base NPN power monolithic Darlington transistor mounted in Jedec TO-218 plastic package.
They are intended for use in power linear and switching applications.
The complementary are BDW84, BDW84A, BDW84B, BDW84C, BDW84D
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings			Value	Unit
V_{CEO}	Collector-Emitter Voltage	$I_B = 0$	BDW83	45	V
			BDW83A	60	
			BDW83B	80	
			BDW83C	100	
			BDW83D	120	
V_{CBO}	Collector- Emitter Voltage	$I_E = 0$	BDW83	45	V
			BDW83A	60	
			BDW83B	80	
			BDW83C	100	
			BDW83D	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 temperatur		150	W
		25°C free aire temperatur		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	

NPN BDW83, BDW83A, BDW83B, BDW83C, BDW83D,

ELECTRICAL CHARACTERISTICS

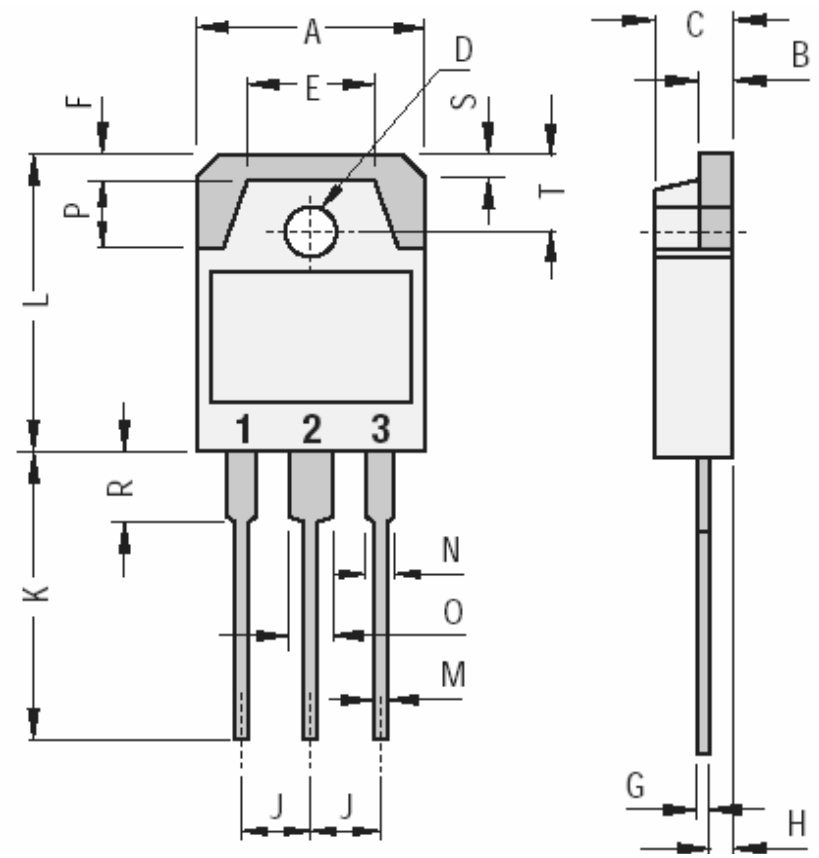
TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage (*)	I_C=30 mA I_B=0	BDW83	45	-	-	V
			BDW83A	60	-	-	
			BDW83B	80	-	-	
			BDW83C	100	-	-	
			BDW83D	120	-	-	
I_{CEO}	Collector Cutoff Current	I_B=0, V_{CE}=30 V	BDW83	-	-	1	mA
		I_B=0, V_{CE}=30 V	BDW83A				
		I_B=0, V_{CE}=40 V	BDW83B				
		I_B=0, V_{CE}=50 V	BDW83C				
		I_B=0, V_{CE}=60 V	BDW83D				
I_{CBO}	Collector Cutoff Current	I_E= 0, V_{CB}=45 V	BDW83	-	-	0.5	mA
		I_E= 0, V_{CB}=60 V	BDW83A				
		I_E= 0, V_{CB}=80 V	BDW83B				
		I_E= 0, V_{CB}=100 V	BDW83C				
		I_E= 0, V_{CB}=120 V	BDW83D				
		I_E= 0, V_{CB}=45 V T_{case} = 150°C	BDW83	-	-	5	
		I_E= 0, V_{CB}=60 V T_{case} = 150°C	BDW83A				
		I_E= 0, V_{CB}=80 V T_{case} = 150°C	BDW83B				
		I_E= 0, V_{CB}=100 V T_{case} = 150°C	BDW83C				
		I_E= 0, V_{CB}=120 V T_{case} = 150°C	BDW83D				
I_{EBO}	Emitter Cutoff Current	V_{EB}=5.0 V, I_C=0		-	-	2	mA
h_{FE}	DC Current Gain (*)	I_C=6 A , V_{CE}=3.0 V		750	-	20 K	-
		I_C=15 A , V_{CE}=3.0 V		100	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (1)	I_C=6 A , I_B=12 mA		-	-	2.5	V
		I_C=15 A , I_B=150 mA		-	-	4	
$V_{BE(on)}$	Base-Emitter Voltage (*)	I_C=6 A , I_B=3 A		-	-	2.5	
V_{EC}	Parallel Diode Forward Voltage	I_E = 15 A , I_E= 0		-	-	3.5	V
t_{on}	Turn-on time	IC = 10 A, IB1 =-IB2=40 mA RL=3Ω; VBE(off) = -4.2V Duty Cycle≤2%		-	0.9	-	µs
t_{off}	Turn-off time			-	7	-	

(*) Pulse Duration = 300 µs, Duty Cycle <= 2%

NPN BDW83, BDW83A, BDW83B, BDW83C, BDW83D,

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.

Revised August 2012