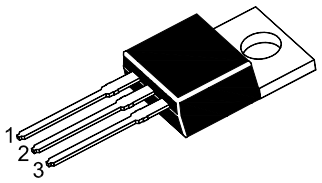
ST BDW42

NPN Silicon Planar Darlington Power Transistors

General Purpose and Low Speed Switching
Application



1.Base 2.Collector 3.Emitter
TO-220 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

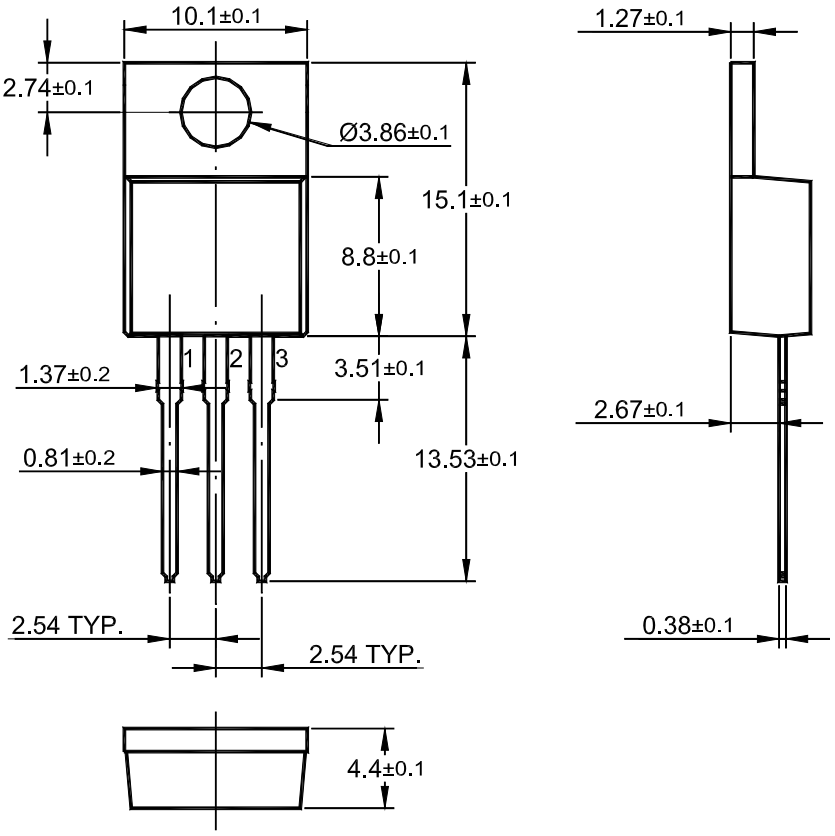
Parameter	Symbol	Value	Unit
Collector Emitter Voltage	V_{CEO}	100	V
Collector Base Voltage	V_{CBO}	100	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current – Continuous	I_C	15	A
Base Current	I_B	0.5	A
Total Power Dissipation @ T_C = 25 °C Derate above 25 °C	P_D	85 0.68	W W/°C
Operating and Storage Junction Temperature Range	T_J, T_s	-55 to +150	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.47	°C/W

Characteristics at T_C = 25 °C

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain				
at V_{CE} = 4 V, I_C = 5 A	h_{FE}	1000	-	-
at V_{CE} = 4 V, I_C = 10 A	h_{FE}	250	-	-
Collector Emitter Sustaining Voltage at I_C = 30 mA	$V_{CEO(sus)}$	100	-	V
Collector Cutoff Current				
at V_{CE} = 50 V	I_{CEO}	-	2	mA
at V_{CE} = 100 V	I_{CEO}	-	1	mA
Emitter Cutoff Current at V_{EB} = 5 V	I_{EBO}	-	2	mA
Collector Emitter Saturation Voltage				
at I_C = 5 A, I_B = 10 mA	$V_{CE(sat)}$	-	2	V
at I_C = 10 A, I_B = 50 mA	$V_{CE(sat)}$	-	3	V
Base Emitter on Voltage at I_C = 10 A, V_{CE} = 4 V	$V_{BE(on)}$	-	3	V
Second Breakdown Collector Current With Base Forward Biased [1]				
at V_{CE} = 28.4 V	$I_{S/b}$	3		A
at V_{CE} = 40 V		1.2		A
Current Gain Bandwidth Product at V_{CE} = 3 V, I_C = 3 A, f = 1 MHz	f_T	4	-	MHz
Output Capacitance at V_{CB} = 10 V, f = 0.1 MHz	C_{ob}	-	200	pF

[1] Pulse Test non repetitive: Pulse Width = 250 ms

TO-220 PACKAGE OUTLINE



Dimensions in mm