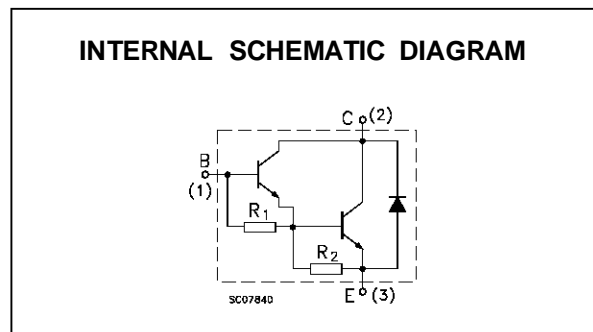
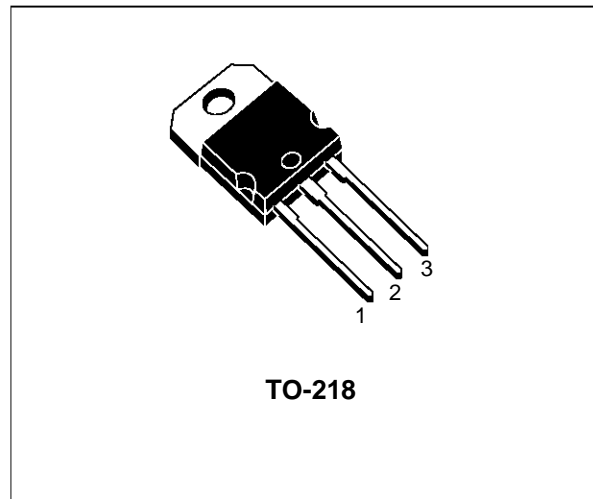


HIGH CURRENT SILICON POWER DARLINGTON TRANSISTOR

DESCRIPTION

The BDW83C is a silicon epitaxial-base NPN power monolithic Darlington mounted in Jedec TO-218 plastic package. It is intended for use in power linear and switching applications.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	100	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	100	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	5	V
I_C	Collector Current	15	A
I_{CM}	Collector Peak Current	40	A
I_B	Base Current	0.5	A
P_{tot}	Total Dissipation at $T_c \leq 25^\circ\text{C}$	130	W
T_{stg}	Storage Temperature	-65 to 150	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature	150	$^\circ\text{C}$

BDW83C

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	0.96	$^{\circ}C/W$
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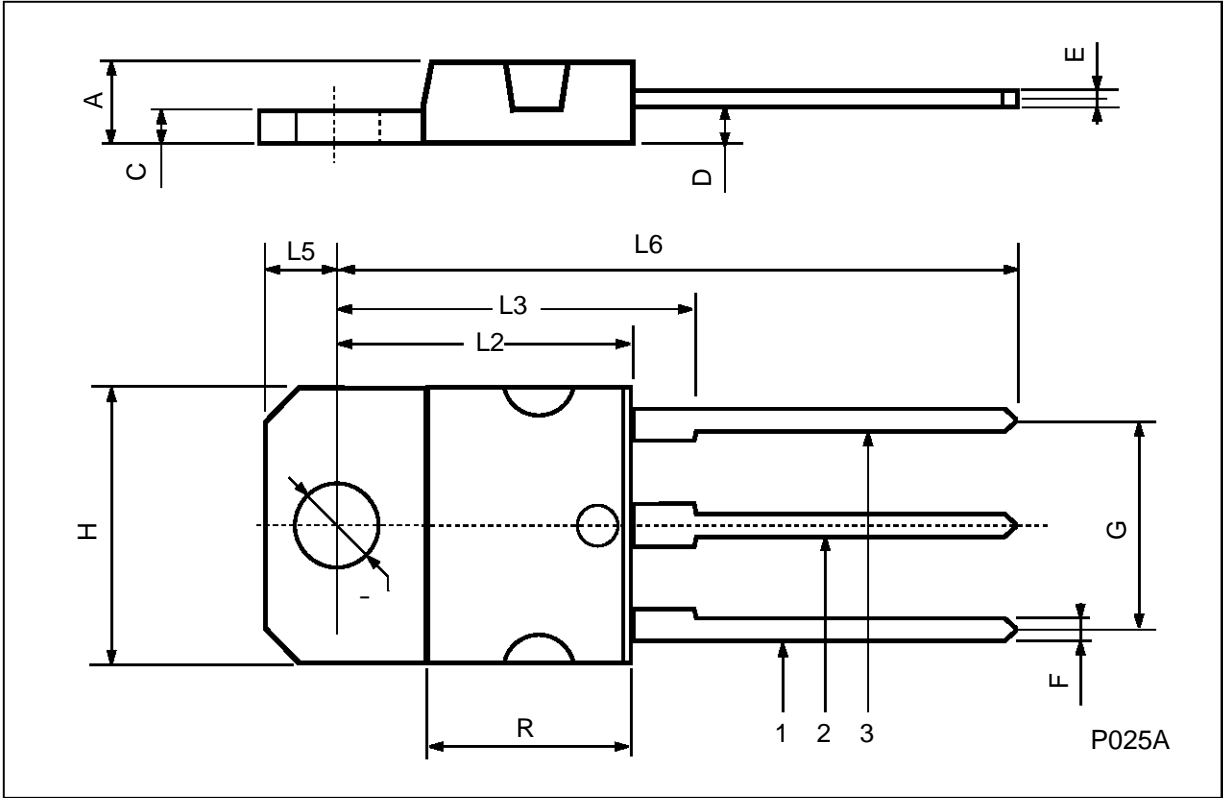
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 100 V$ $V_{CB} = 100 V$ $T_{case} = 150^{\circ}C$			500 5	μA mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 40 V$			1	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5 V$			2	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage	$I_C = 30 mA$	100			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 6 A$ $I_B = 12 mA$ $I_C = 15 A$ $I_B = 150 mA$			2.5 4	V
$V_{BE(on)}^*$	Base-Emitter Voltage	$I_C = 6 A$ $V_{CE} = 3 A$			2.5	V
h_{FE}^*	DC Current Gain	$I_C = 6 A$ $V_{CE} = 3 V$ $I_C = 15 A$ $V_{CE} = 3 V$	750 100		20K	
V_f^*	Diode Forward Voltage	$I_F = 10 A$			4	V
f_T	Turn-on Time Turn-off Time	$V_{CC} = 30 V$ $I_C = 10 A$ $R_{B1} = 300 \Omega$ $R_{B2} = 150 \Omega$ $I_{B1} = - I_{B2} = 40 mA$		0.9 6		μs μs

* Pulsed: Pulse duration = 300 μs , duty cycle 1.5 %
For PNP types voltage and current values are negative.

TO-218 (SOT-93) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.7		4.9	0.185		0.193
C	1.17		1.37	0.046		0.054
D		2.5			0.098	
E	0.5		0.78	0.019		0.030
F	1.1		1.3	0.043		0.051
G	10.8		11.1	0.425		0.437
H	14.7		15.2	0.578		0.598
L2	-		16.2	-		0.637
L3		18			0.708	
L5	3.95		4.15	0.155		0.163
L6		31			1.220	
R	-		12.2	-		0.480
Ø	4		4.1	0.157		0.161



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