



THE DATASHEET OF BDW83C





BDW83C BDW84C

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

- BDW83C IS A STMicroelectronics PREFERRED SALESTYPE
- COMPLEMENTARY PNP - NPN DEVICES
- HIGH CURRENT CAPABILITY
- FAST SWITCHING SPEED
- HIGH DC CURRENT GAIN

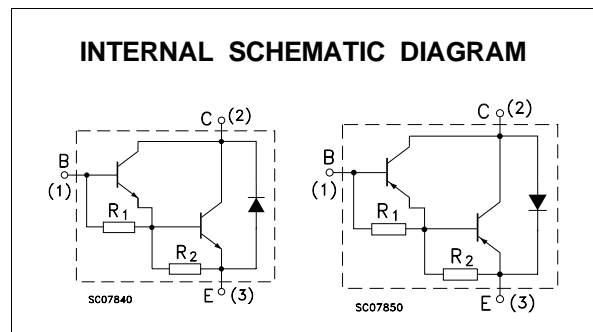
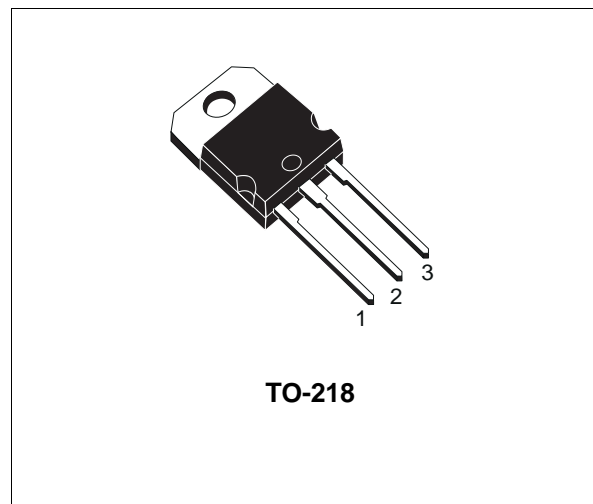
APPLICATIONS

- LINEAR AND SWITCHING INDUSTRIAL EQUIPMENT

DESCRIPTION

The BDW83C is a Silicon Epitaxial-Base NPN power monolithic Darlington transistor mounted in Jedec TO-218 plastic package. It is intended for use in power linear and switching applications.

The complementary type is BDW84C.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		NPN	BDW83C	
		PNP	BDW84C	
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 / BDW84C

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	0.96	°C/W
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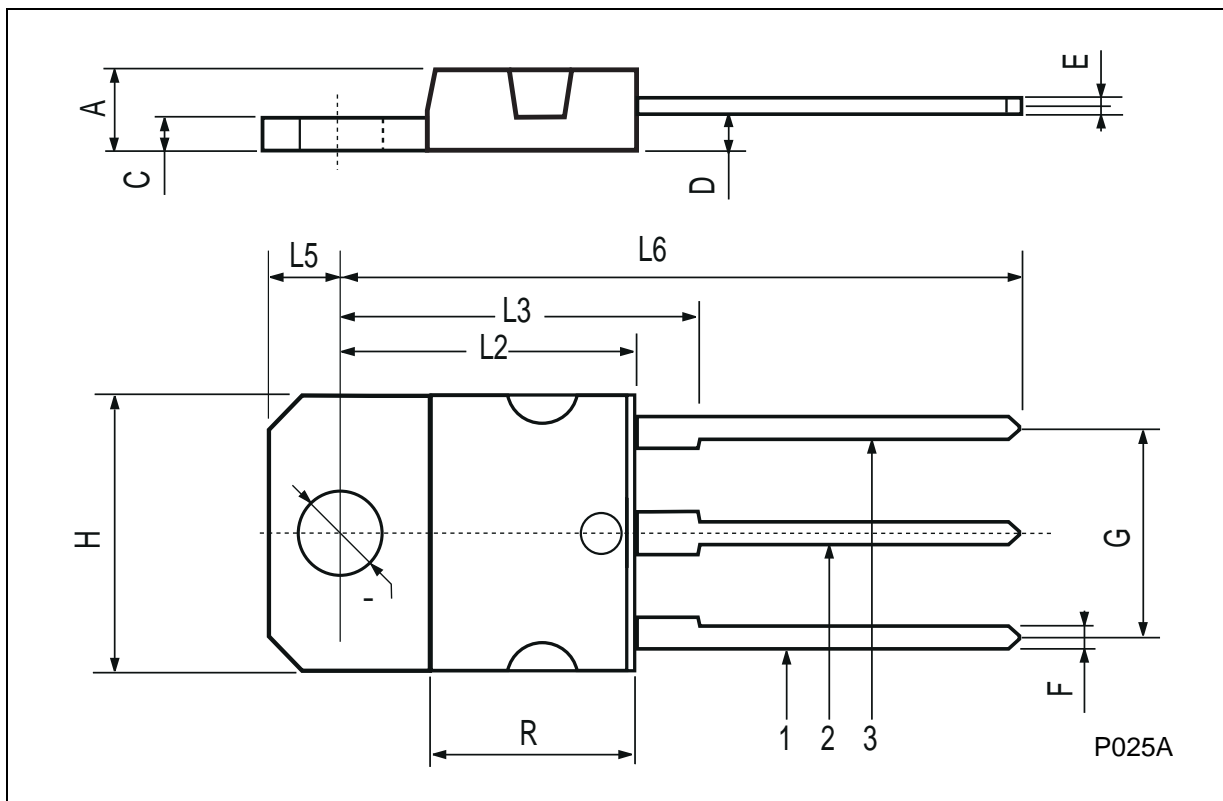
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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 _C = 150 °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 _B = 0)	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 V			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		20000	
V _f	Diode Forward Voltage	I _F = 10 A			4	V
t _{on} t _{off}	RESISTIVE LOAD Turn-on Time Turn-off Time	V _{CC} = 30 V I _C = 10 A R _{B1} = 300 Ω R _{B2} = 150 Ω I _{B1} = - I _{B2} = 40 mA		0.9 6		μs μs

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %
For PNP type 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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