

Silicon NPN Power Transistors

BDW83/83A/83B/83C/83D

DESCRIPTION

- With TO-3PN package
- Complement to type BDW84/84A/84B/84C/84D
- DARLINGTON
- High DC current gain

APPLICATIONS

- For use in power linear and switching applications.

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

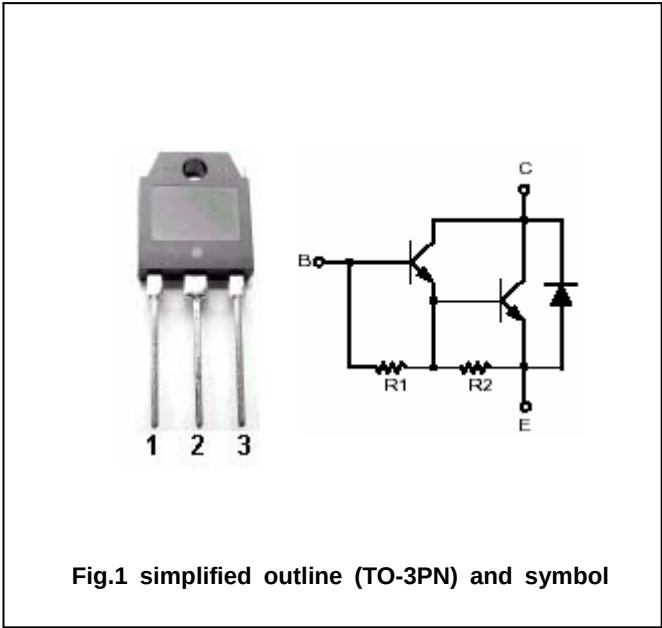


Fig.1 simplified outline (TO-3PN) and symbol

Absolute maximum ratings(Tc=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V _{CBO}	Collector-base voltage	Open emitter	45	V
			60	
			80	
			100	
			120	
V _{CEO}	Collector-emitter voltage	Open base	45	V
			60	
			80	
			100	
			120	
V _{EBO}	Emitter-base voltage	Open collector	5	V
I _C	Collector current		15	A
I _B	Base current		0.5	A
P _C	Collector power dissipation	T _C =25°C	150	W
		T _a =25°C	3.5	
T _j	Junction temperature		150	°C
T _{stg}	Storage temperature		-65~150	°C

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CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	BDW83	I _C =30mA, I _B =0	45			V
		BDW83A		60			
		BDW83B		80			
		BDW83C		100			
		BDW83D		120			
V _{CEsat-1}	Collector-emitter saturation voltage		I _C =6A ,I _B =12mA			2.5	V
V _{CEsat-2}	Collector-emitter saturation voltage		I _C =15A ,I _B =150mA			4.0	V
V _{BE}	Base-emitter on voltage		I _C =6A ; V _{CE} =3V			2.5	V
I _{CBO}	Collector cut-off current	BDW83	V _{CB} =45V, I _E =0 T _C =150°C			0.5 5.0	mA
		BDW83A	V _{CB} =60V, I _E =0 T _C =150°C			0.5 5.0	
		BDW83B	V _{CB} =80V, I _E =0 T _C =150°C			0.5 5.0	
		BDW83C	V _{CB} =100V, I _E =0 T _C =150°C			0.5 5.0	
		BDW83D	V _{CB} =120V, I _E =0 T _C =150°C			0.5 5.0	
I _{CEO}	Collector cut-off current	BDW83	V _{CE} =30V, I _B =0			1	mA
		BDW83A	V _{CE} =30V, I _B =0				
		BDW83B	V _{CE} =40V, I _B =0				
		BDW83C	V _{CE} =50V, I _B =0				
		BDW83D	V _{CE} =60V, I _B =0				
I _{EBO}	Emitter cut-off current		V _{EB} =5V; I _C =0			2	mA
h _{FE-1}	DC current gain		I _C =6A ; V _{CE} =3V	750		20000	
h _{FE-2}	DC current gain		I _C =15A ; V _{CE} =3V	100			
V _{EC}	Diode forward voltage		I _E =15A			3.5	V
t _{on}	Turn-on time		I _C = 10 A, I _{B1} =-I _{B2} =40 mA R _L =3Ω; V _{BE(off)} = -4.2V Duty Cycle≤2%		0.9		μ s
t _{off}	Turn-off time				7.0		μ s

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal resistance junction to case	0.83	°C/W

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Fig.2 Outline dimensions(unindicated tolerance:±0.1mm)