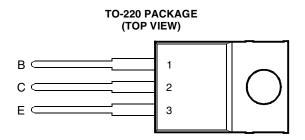


- Designed for Complementary Use with BDW64, BDW64A, BDW64B, BDW64C and BDW64D
- 60 W at 25°C Case Temperature
- 6 A Continuous Collector Current
- Minimum h_{FE} of 750 at 3V, 2 A



Pin 2 is in electrical contact with the mounting base.

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absolute maximum ratings at 25°C case temperature (unless otherwise noted)

RATING	SYMBOL	VALUE	UNIT	
	BDW63		45	
	BDW63A		60	
Collector-base voltage (I _E = 0)	BDW63B	V_{CBO}	80	V
	BDW63C		100	
	BDW63D		120	
	BDW63		45	
Collector-emitter voltage (I _B = 0) (see Note 1)	BDW63A		60	
	BDW63B	V_{CEO}	80	V
	BDW63C		100	
	BDW63D		120	
Emitter-base voltage		V _{EB}	5	V
Continuous collector current	I _C	6	Α	
Continuous base current	I _B	0.1	Α	
Continuous device dissipation at (or below) 25°C case temperature (see Note 2	P _{tot}	60	W	
Continuous device dissipation at (or below) 25°C free air temperature (see Note	P _{tot}	2	W	
Unclamped inductive load energy (see Note 4)	½LI _C ²	50	mJ	
Operating junction temperature range	T _j	-65 to +150	°C	
Operating temperature range	T _{stg}	-65 to +150	°C	
Operating free-air temperature range	T _A	-65 to +150	°C	

NOTES: 1. These values apply when the base-emitter diode is open circuited.

- 2. Derate linearly to 150°C case temperature at the rate of 0.48 W/°C.
- 3. Derate linearly to 150°C free air temperature at the rate of 16 mW/°C.
- 4. This rating is based on the capability of the transistor to operate safely in a circuit of: L = 20 mH, $I_{B(on)}$ = 5 mA, R_{BE} = 100 Ω , $V_{BE(off)}$ = 0, R_S = 0.1 Ω , V_{CC} = 20 V.



electrical characteristics at 25°C case temperature (unless otherwise noted)

	PARAMETER		TEST	CONDITIONS		MIN	TYP	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C = 30 mA	I _B = 0	(see Note 5)	BDW63 BDW63A BDW63B BDW63C BDW63D	45 60 80 100 120			٧
I _{CEO}	Collector-emitter cut-off current	V _{CE} = 30 V V _{CE} = 30 V V _{CE} = 40 V V _{CE} = 50 V V _{CE} = 60 V	$I_{B} = 0$		BDW63 BDW63A BDW63B BDW63C BDW63D			0.5 0.5 0.5 0.5 0.5	mA
І _{СВО}	Collector cut-off current	$V_{CB} = 120 \text{ V}$ $V_{CB} = 45 \text{ V}$ $V_{CB} = 60 \text{ V}$ $V_{CB} = 80 \text{ V}$ $V_{CB} = 100 \text{ V}$	E = 0 E = 0	T _C = 150°C	BDW63 BDW63A BDW63B BDW63C BDW63D BDW63 BDW63A BDW63A BDW63B BDW63C BDW63D			0.2 0.2 0.2 0.2 0.2 5 5 5	mA
I _{EBO}	Emitter cut-off current	V _{EB} = 5 V	I _C = 0					2	mA
h _{FE}	Forward current transfer ratio	$V_{CE} = 3 V$ $V_{CE} = 3 V$	$I_C = 2 A$ $I_C = 6 A$	(see Notes 5 and 6)		750 100		20000	
V _{BE(on)}	Base-emitter voltage	V _{CE} = 3 V	I _C = 2 A	(see Notes 5 and 6)				2.5	V
V _{CE(sat)}	Collector-emitter saturation voltage	$I_B = 12 \text{ mA}$ $I_B = 60 \text{ mA}$	$I_C = 2 A$ $I_C = 6 A$	(see Notes 5 and 6)				2.5 4	V
V _{EC}	Parallel diode forward voltage	I _E = 6 A	I _B = 0					3.5	V

NOTES: 5. These parameters must be measured using pulse techniques, $t_0 = 300 \mu s$, duty cycle $\leq 2\%$.

thermal characteristics

	PARAMETER			MAX	UNIT
$R_{\theta JC}$	Junction to case thermal resistance			2.08	°C/W
$R_{\theta JA}$	Junction to free air thermal resistance			62.5	°C/W

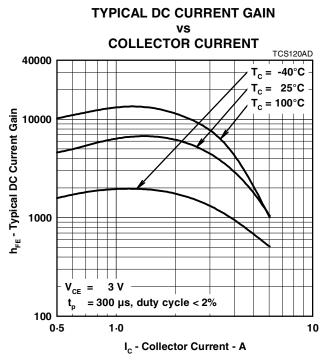
resistive-load-switching characteristics at 25°C case temperature

	PARAMETER	TEST CONDITIONS †			MIN	TYP	MAX	UNIT
t _{on}	Turn-on time	I _C = 3 A	$I_{B(on)} = 12 \text{ mA}$	$I_{B(off)} = -12 \text{ mA}$		1		μs
t _{off}	Turn-off time	$V_{BE(off)} = -4.5 \text{ V}$	$R_L = 10 \Omega$	t_p = 20 μ s, dc \leq 2%		5		μs

[†] Voltage and current values shown are nominal; exact values vary slightly with transistor parameters.

^{6.} These parameters must be measured using voltage-sensing contacts, separate from the current carrying contacts.

TYPICAL CHARACTERISTICS



COLLECTOR-EMITTER SATURATION VOLTAGE

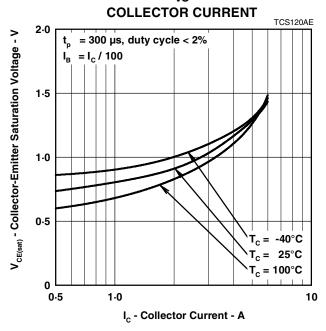
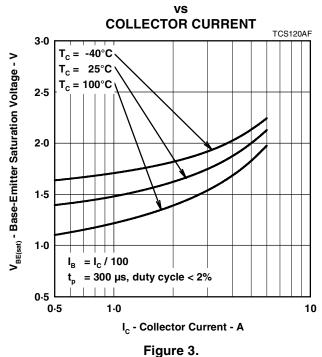


Figure 1.

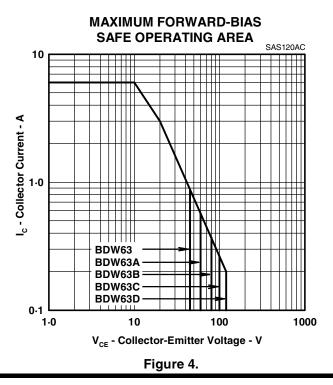
Figure 2.

BASE-EMITTER SATURATION VOLTAGE



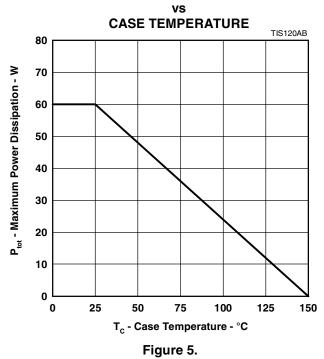
PRODUCT INFORMATION

MAXIMUM SAFE OPERATING REGIONS



THERMAL INFORMATION

MAXIMUM POWER DISSIPATION



PRODUCT INFORMATION