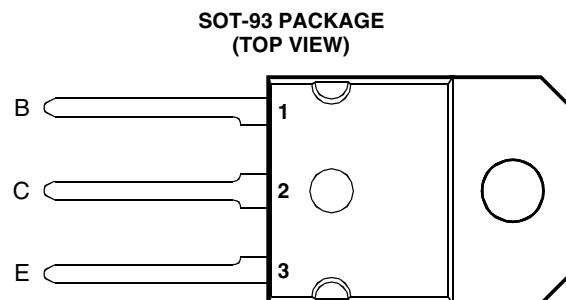


- Designed for Complementary Use with BDV64, BDV64A, BDV64B and BDV64C
- 125 W at 25°C Case Temperature
- 12 A Continuous Collector Current
- Minimum h_{FE} of 1000 at 4 V, 5 A

 This model is currently available, but not recommended for new designs. For more information, see http://bourns.com/data/global/pdfs/TSP1203_SOT93_POM.pdf.



Pin 2 is in electrical contact with the mounting base.

MDTRAAA

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

RATING	SYMBOL	VALUE	UNIT
Collector-base voltage ($I_E = 0$)	V_{CBO}	60 80 100 120	V
Collector-emitter voltage ($I_B = 0$)	V_{CEO}	60 80 100 120	V
Emitter-base voltage	V_{EBO}	5	V
Continuous collector current	I_C	12	A
Peak collector current (see Note 1)	I_{CM}	15	A
Continuous base current	I_B	0.5	A
Continuous device dissipation at (or below) 25°C case temperature (see Note 2)	P_{tot}	125	W
Continuous device dissipation at (or below) 25°C free air temperature (see Note 3)	P_{tot}	3.5	W
Operating junction temperature range	T_j	-65 to +150	°C
Storage temperature range	T_{stg}	-65 to +150	°C
Lead temperature 3.2 mm from case for 10 seconds	T_L	260	°C

NOTES: 1. This value applies for $t_p \leq 0.1$ ms, duty cycle $\leq 10\%$
 2. Derate linearly to 150°C case temperature at the rate of 0.56 W/°C.
 3. Derate linearly to 150°C free air temperature at the rate of 28 mW/°C.

PRODUCT INFORMATION

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

PARAMETER	TEST CONDITIONS			MIN	TYP	MAX	UNIT	
$V_{(BR)CEO}$ Collector-emitter breakdown voltage	$I_C = 30 \text{ mA}$	$I_B = 0$	(see Note 4)	BDV65 BDV65A BDV65B BDV65C	60 80 100 120			V
I_{CEO} Collector-emitter cut-off current	$V_{CB} = 30 \text{ V}$	$I_B = 0$		BDV65		2		
	$V_{CB} = 40 \text{ V}$	$I_B = 0$		BDV65A		2		
	$V_{CB} = 50 \text{ V}$	$I_B = 0$		BDV65B		2		
	$V_{CB} = 60 \text{ V}$	$I_B = 0$		BDV65C		2		
I_{CBO} Collector cut-off current	$V_{CB} = 60 \text{ V}$	$I_E = 0$		BDV65		0.4		
	$V_{CB} = 80 \text{ V}$	$I_E = 0$		BDV65A		0.4		
	$V_{CB} = 100 \text{ V}$	$I_E = 0$		BDV65B		0.4		
	$V_{CB} = 120 \text{ V}$	$I_E = 0$		BDV65C		0.4		
	$V_{CB} = 30 \text{ V}$	$I_E = 0$	$T_C = 150^\circ\text{C}$	BDV65		2		
	$V_{CB} = 40 \text{ V}$	$I_E = 0$	$T_C = 150^\circ\text{C}$	BDV65A		2		
	$V_{CB} = 50 \text{ V}$	$I_E = 0$	$T_C = 150^\circ\text{C}$	BDV65B		2		
	$V_{CB} = 60 \text{ V}$	$I_E = 0$	$T_C = 150^\circ\text{C}$	BDV65C		2		
I_{EBO} Emitter cut-off current	$V_{EB} = 5 \text{ V}$	$I_C = 0$				5	mA	
h_{FE} Forward current transfer ratio	$V_{CE} = 4 \text{ V}$	$I_C = 5 \text{ A}$	(see Notes 4 and 5)	1000				
$V_{CE(\text{sat})}$ Collector-emitter saturation voltage	$I_B = 20 \text{ mA}$	$I_C = 5 \text{ A}$	(see Notes 4 and 5)			2	V	
V_{BE} Base-emitter voltage	$V_{CE} = 4 \text{ V}$	$I_C = 5 \text{ A}$	(see Notes 4 and 5)			2.5	V	
V_{EC} Parallel diode forward voltage	$I_E = 10 \text{ A}$	$I_B = 0$	(see Notes 4 and 5)			3.5	V	

NOTES: 4. These parameters must be measured using pulse techniques, $t_p = 300 \mu\text{s}$, duty cycle $\leq 2\%$.

5. These parameters must be measured using voltage-sensing contacts, separate from the current carrying contacts.

thermal characteristics

PARAMETER	MIN	TYP	MAX	UNIT
$R_{\theta\text{JC}}$ Junction to case thermal resistance			1	°C/W
$R_{\theta\text{JA}}$ Junction to free air thermal resistance			35.7	°C/W

PRODUCT INFORMATION

TYPICAL CHARACTERISTICS

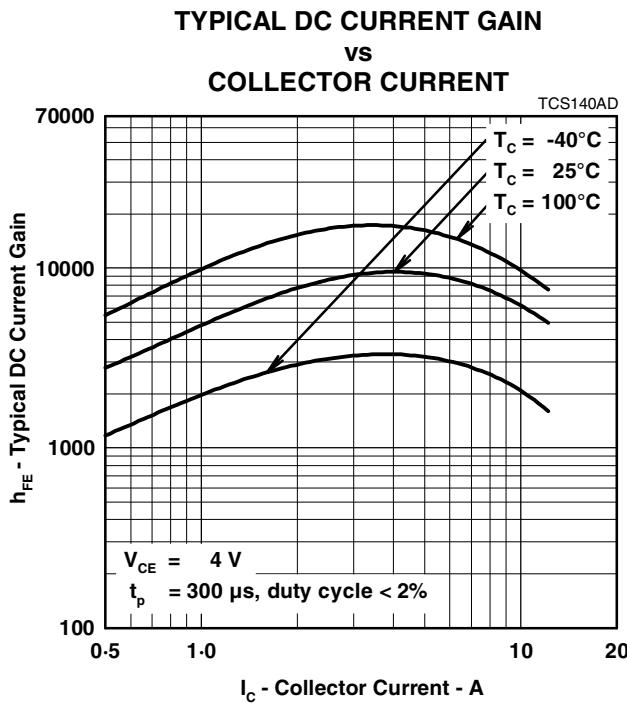


Figure 1.

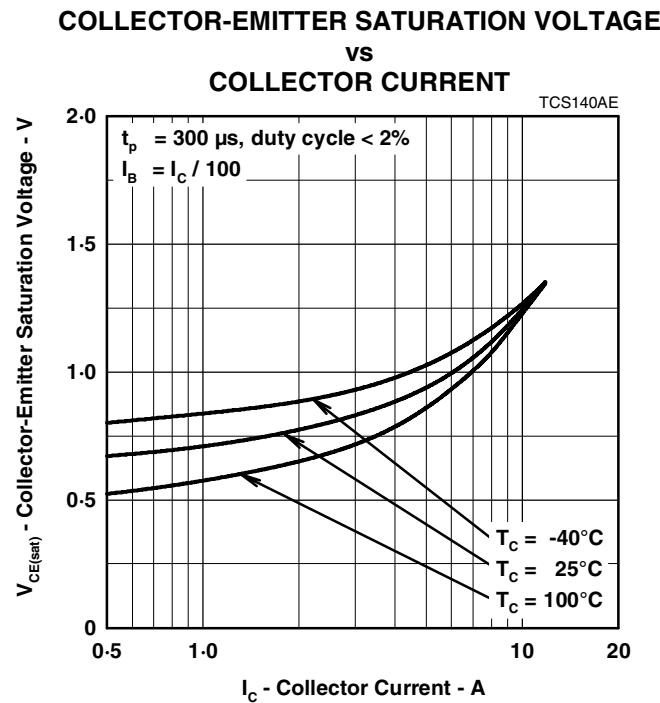


Figure 2.

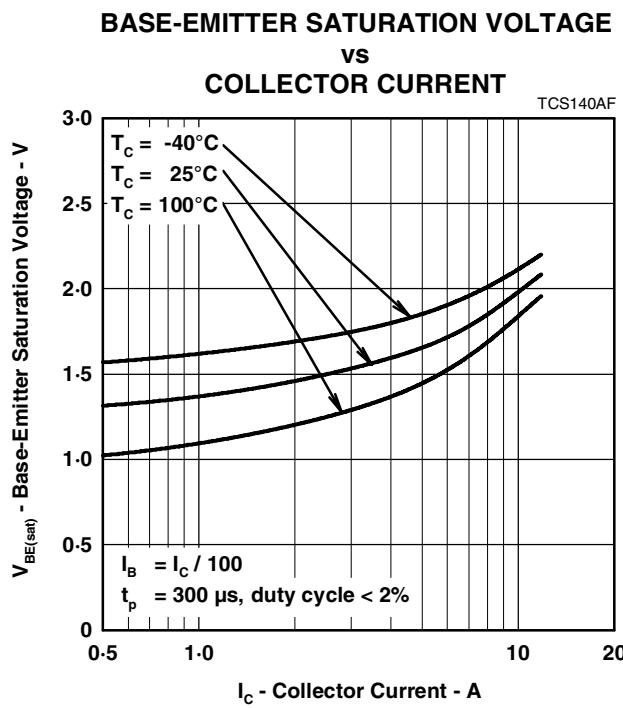


Figure 3.

PRODUCT INFORMATION

THERMAL INFORMATION

MAXIMUM POWER DISSIPATION vs CASE TEMPERATURE

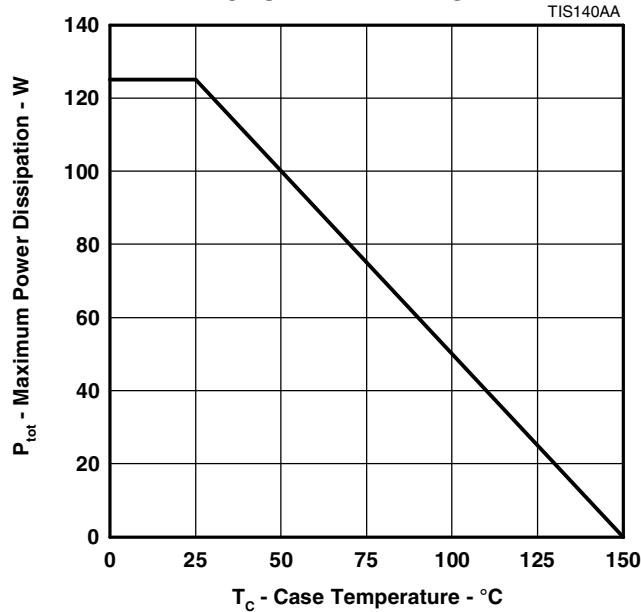


Figure 4.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Bourns](#):

[BDV65](#) [BDV65B-S](#) [BDV65B](#) [BDV65C](#) [BDV65A](#) [BDV65A-S](#) [BDV65C-S](#) [BDV65-S](#)