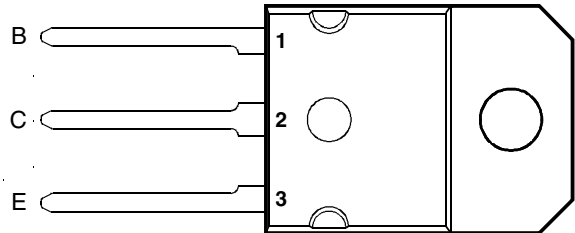




- Designed for Complementary Use with BDV65, BDV65A, BDV65B and BDV65C
- 125 W at 25°C Case Temperature
- 12 A Continuous Collector Current
- Minimum  $h_{FE}$  of 1000 at 4 V, 5 A

SOT-93 PACKAGE  
(TOP VIEW)



Pin 2 is in electrical contact with the mounting base.

MDTRAA

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

RATING		SYMBOL	VALUE	UNIT
Collector-base voltage ( $I_E = 0$ )	BDV64	$V_{CBO}$	-60	V
	BDV64A		-80	
	BDV64B		-100	
	BDV64C		-120	
Collector-emitter voltage ( $I_B = 0$ )	BDV64	$V_{CEO}$	-60	V
	BDV64A		-80	
	BDV64B		-100	
	BDV64C		-120	
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)	BDV64 BDV64A BDV64B BDV64C	-60 -80 -100 -120		V
$I_{CEO}$ Collector-emitter cut-off current	$V_{CB} = -30 \text{ V}$ $V_{CB} = -40 \text{ V}$ $V_{CB} = -50 \text{ V}$ $V_{CB} = -60 \text{ V}$	$I_B = 0$	BDV64 BDV64A BDV64B BDV64C		-2 -2 -2 -2	mA
$I_{CBO}$ Collector cut-off current	$V_{CB} = -60 \text{ V}$ $V_{CB} = -80 \text{ V}$ $V_{CB} = -100 \text{ V}$ $V_{CB} = -120 \text{ V}$ $V_{CB} = -30 \text{ V}$ $V_{CB} = -40 \text{ V}$ $V_{CB} = -50 \text{ V}$ $V_{CB} = -60 \text{ V}$	$I_E = 0$	BDV64 BDV64A BDV64B BDV64C BDV64 BDV64A BDV64B BDV64C		-0.4 -0.4 -0.4 -0.4 -2 -2 -2 -2	mA
$I_{EBO}$ 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		
$V_{CE(sat)}$ 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
$R_{\theta JC}$ Junction to case thermal resistance			1	°C/W
$R_{\theta JA}$ Junction to free air thermal resistance			35.7	°C/W

TYPICAL CHARACTERISTICS

TYPICAL DC CURRENT GAIN  
VS  
COLLECTOR CURRENT

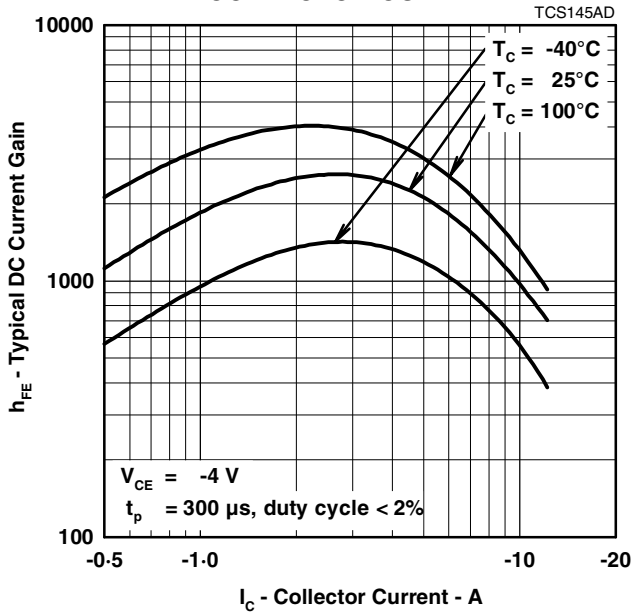


Figure 1.

COLLECTOR-EMITTER SATURATION VOLTAGE  
VS  
COLLECTOR CURRENT

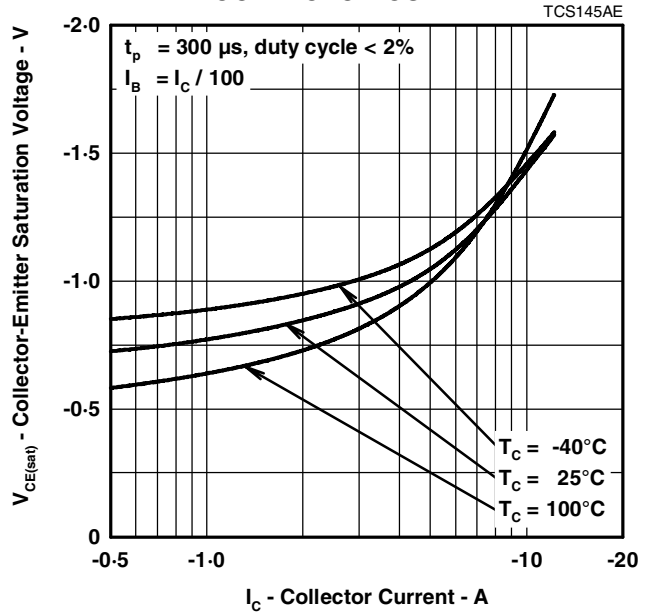


Figure 2.

BASE-EMITTER SATURATION VOLTAGE  
VS  
COLLECTOR CURRENT

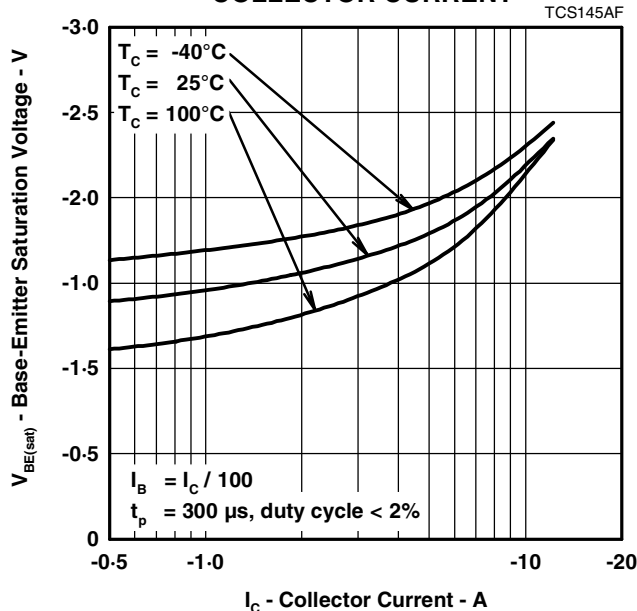
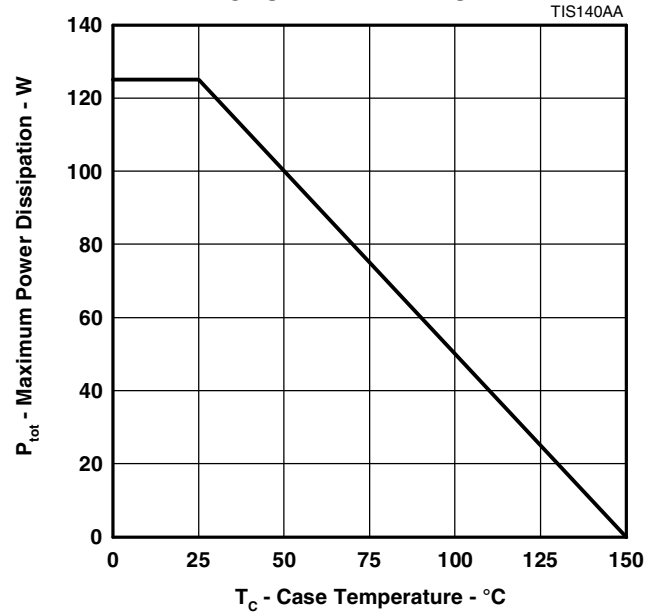


Figure 3.

**PRODUCT INFORMATION**

**THERMAL INFORMATION**

**MAXIMUM POWER DISSIPATION  
vs  
CASE TEMPERATURE**



**Figure 4.**