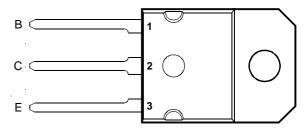
- Designed for Complementary Use with BDV64, BDV64A, BDV64B and BDV64C
- 125 W at 25°C Case Temperature
- 12 A Continuous Collector Current
- Minimum h_{FE} of 1000 at 4 V, 5 A

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	
	BDV65		60		
Collector-base voltage (I _E = 0)	BDV65A	\/	80	V	
	BDV65B	V _{CBO}	100		
	BDV65C		120		
Collector-emitter voltage (I _B = 0)	BDV65		60		
	BDV65A	\/	80	V	
	BDV65B	V _{CEO}	100		
	BDV65C		120		
Emitter-base voltage			5	V	
Continuous collector current			12	Α	
Peak collector current (see Note 1)			15	Α	
Continuous base current			0.5	Α	
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			-65 to +150	°C	
Storage temperature range			-65 to +150	°C	
Lead temperature 3.2 mm from case for 10 seconds			260	°C	

NOTES: 1. This value applies for $t_{\rm p} \le 0.1$ ms, duty cycle $\le 10\%$

- 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.



BDV65, BDV65A, BDV65B, BDV65C NPN SILICON POWER DARLINGTONS

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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 4)	BDV65 BDV65A BDV65B BDV65C	60 80 100 120			V
I _{CEO}	Collector-emitter cut-off current	$V_{CB} = 30 \text{ V}$ $V_{CB} = 40 \text{ V}$ $V_{CB} = 50 \text{ V}$ $V_{CB} = 60 \text{ V}$	$I_{B} = 0$ $I_{B} = 0$ $I_{B} = 0$ $I_{B} = 0$		BDV65 BDV65A BDV65B BDV65C			2 2 2 2	mA
I _{CBO}	Collector cut-off current	$V_{CB} = 60 \text{ V}$ $V_{CB} = 80 \text{ V}$ $V_{CB} = 100 \text{ V}$ $V_{CB} = 120 \text{ V}$ $V_{CB} = 30 \text{ V}$ $V_{CB} = 40 \text{ V}$	$I_{E} = 0$	$T_{C} = 150^{\circ}\text{C}$ $T_{C} = 150^{\circ}\text{C}$ $T_{C} = 150^{\circ}\text{C}$ $T_{C} = 150^{\circ}\text{C}$	BDV65 BDV65A BDV65B BDV65C BDV65 BDV65A BDV65B BDV65C			0.4 0.4 0.4 0.4 2 2 2	mA
I _{EBO}	Emitter cut-off current	V _{EB} = 5 V	I _C = 0					5	mA
h _{FE}	Forward current transfer ratio	V _{CE} = 4 V	I _C = 5 A	(see Notes 4 and 5)		1000			
V _{CE(sat)}	Collector-emitter saturation voltage	I _B = 20 mA	I _C = 5 A	(see Notes 4 and 5)				2	V
V _{BE}	Base-emitter voltage	V _{CE} = 4 V	I _C = 5 A	(see Notes 4 and 5)				2.5	V
V _{EC}	Parallel diode forward voltage	I _E = 10 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 μ s, duty cycle \leq 2%.

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

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

TYPICAL CHARACTERISTICS

TYPICAL DC CURRENT GAIN COLLECTOR CURRENT TCS140AD 70000 = -40°C 25°C 100°C h_{FE} - Typical DC Current Gain 10000 1000 = 300 μs, duty cycle < 2% 100 0.5 1.0 10 20 I_C - Collector Current - A

Figure 1.

COLLECTOR-EMITTER SATURATION VOLTAGE

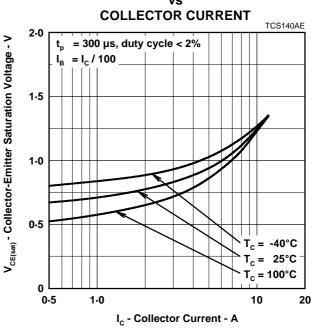
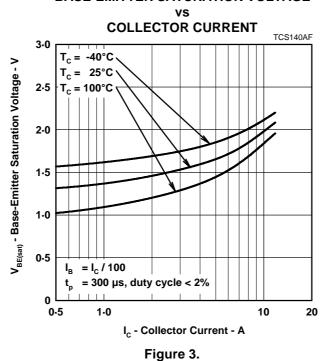


Figure 2.

BASE-EMITTER SATURATION VOLTAGE



Power

THERMAL INFORMATION

MAXIMUM POWER DISSIPATION

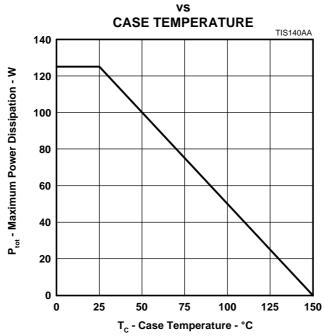


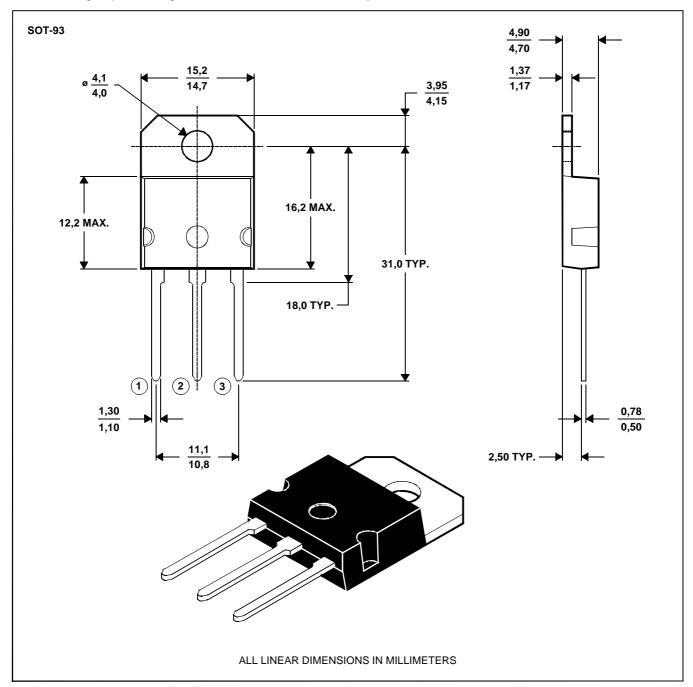
Figure 4.

MECHANICAL DATA

SOT-93

3-pin plastic flange-mount package

This single-in-line package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly.



NOTE A: The centre pin is in electrical contact with the mounting tab.

MDXXAW



BDV65, BDV65A, BDV65B, BDV65C NPN SILICON POWER DARLINGTONS

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