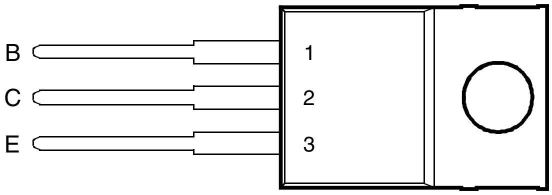

Chipsmall
深圳市津利帝科技有限公司
Geelead Technology Limited
Chipsmall
采购部

- **Designed for Complementary Use with BD895, BD897, BD899 and BD901**
- **70 W at 25°C Case Temperature**
- **8 A Continuous Collector Current**
- **Minimum h_{FE} of 750 at 3V, 3A**

This series is obsolete and
not recommended for new designs.

**TO-220 PACKAGE
(TOP VIEW)**



Pin 2 is in electrical contact with the mounting base.

MDTRACA

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

RATING		SYMBOL	VALUE	UNIT
Collector-base voltage (I_E = 0)	BD896 BD898 BD900 BD902	V_{CBO}	-45 -60 -80 -100	V
Collector-emitter voltage (I_B = 0)	BD896 BD898 BD900 BD902	V_{CEO}	-45 -60 -80 -100	V
Emitter-base voltage		V_{EBO}	-5	V
Continuous collector current		I_C	-8	A
Continuous base current		I_B	-0.3	A
Continuous device dissipation at (or below) 25°C case temperature (see Note 1)		P_{tot}	70	W
Continuous device dissipation at (or below) 25°C free air temperature (see Note 2)		P_{tot}	2	W
Operating free-air temperature range		T_A	-65 to +150	°C
Operating junction temperature range		T_j	-65 to +150	°C
Storage temperature range		T_{stg}	-65 to +150	°C

NOTES: 1. Derate linearly to 150°C case temperature at the rate of 0.56 W/°C.
2. Derate linearly to 150°C free air temperature at the rate of 16 mW/°C.

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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 = -100 mA	I_B = 0	(see Note 3)	BD896	-45			V
					BD898	-60			
					BD900	-80			
					BD902	-100			
I_{CEO}	Collector-emitter cut-off current	V_{CE} = -30 V	I_B = 0		BD896			-0.5	mA
		V_{CE} = -30 V	I_B = 0		BD898			-0.5	
		V_{CE} = -40 V	I_B = 0		BD900			-0.5	
		V_{CE} = -50 V	I_B = 0		BD902			-0.5	
I_{CBO}	Collector cut-off current	V_{CB} = -45 V	I_E = 0		BD896			-0.2	mA
		V_{CB} = -60 V	I_E = 0		BD898			-0.2	
		V_{CB} = -80 V	I_E = 0		BD900			-0.2	
		V_{CB} = -100 V	I_E = 0		BD902			-0.2	
		V_{CB} = -45 V	I_E = 0	T_C = 100°C	BD896			-2	
		V_{CB} = -60 V	I_E = 0	T_C = 100°C	BD898			-2	
		V_{CB} = -80 V	I_E = 0	T_C = 100°C	BD900			-2	
		V_{CB} = -100 V	I_E = 0	T_C = 100°C	BD902			-2	
I_{EBO}	Emitter cut-off current	V_{EB} = -5 V	I_C = 0	(see Notes 3 and 4)				-2	mA
h_{FE}	Forward current transfer ratio	V_{CE} = -3 V	I_C = -3 A	(see Notes 3 and 4)		750			
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_B = -12 mA	I_C = -3 A	(see Notes 3 and 4)				-2.5	V
$V_{BE(on)}$	Base-emitter voltage	V_{CE} = -3 V	I_C = -3 A	(see Notes 3 and 4)				-2.5	V
V_{EC}	Parallel diode forward voltage	I_E = -8 A	I_B = 0					-3.5	V

NOTES: 3. These parameters must be measured using pulse techniques, t_p = 300 µs, duty cycle ≤ 2%.
4. 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			1.79	°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 mA	$I_{B(off)}$ = 12 mA		1		µs
t_{off}	Turn-off time	$V_{BE(off)}$ = 3.5 V	R_L = 10 Ω	t_p = 20 µs, dc ≤ 2%		5		µs

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

TYPICAL CHARACTERISTICS

TYPICAL DC CURRENT GAIN vs COLLECTOR CURRENT

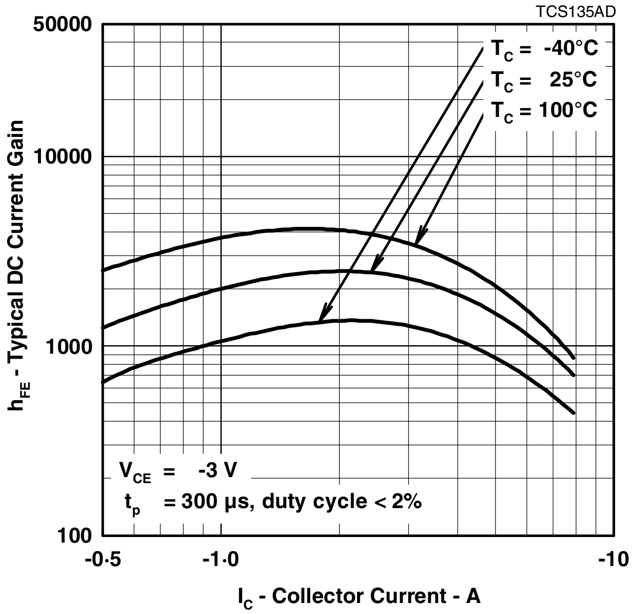

Figure 1.

COLLECTOR-EMITTER SATURATION VOLTAGE vs COLLECTOR CURRENT

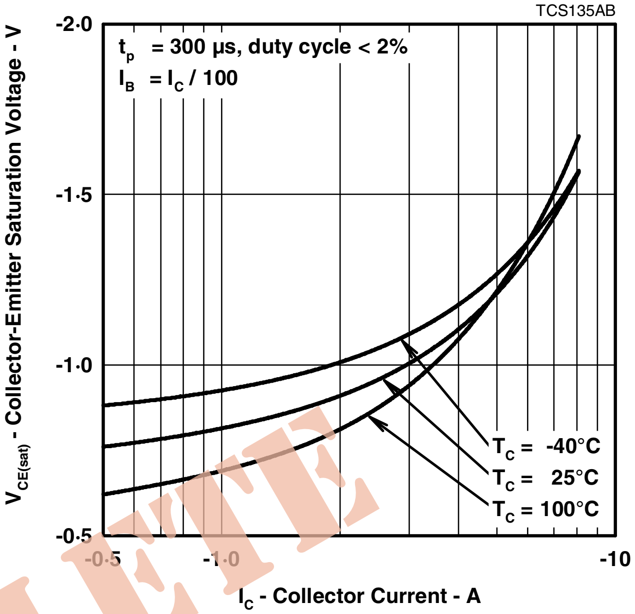

Figure 2.

BASE-EMITTER SATURATION VOLTAGE vs COLLECTOR CURRENT

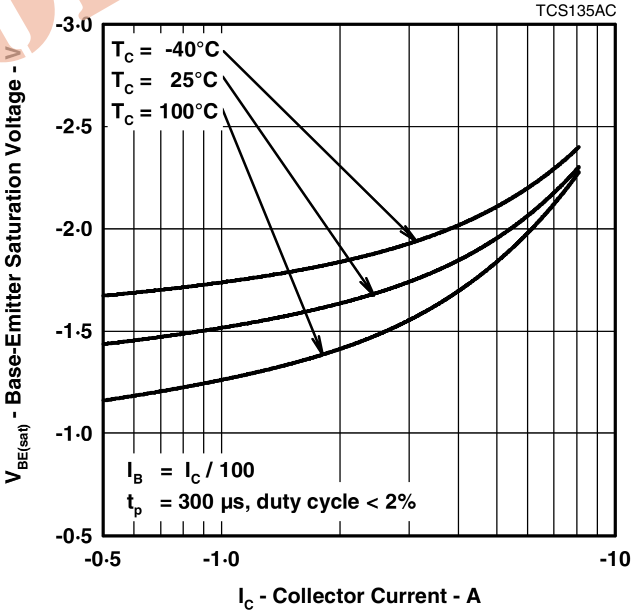

Figure 3.

MAXIMUM SAFE OPERATING REGIONS

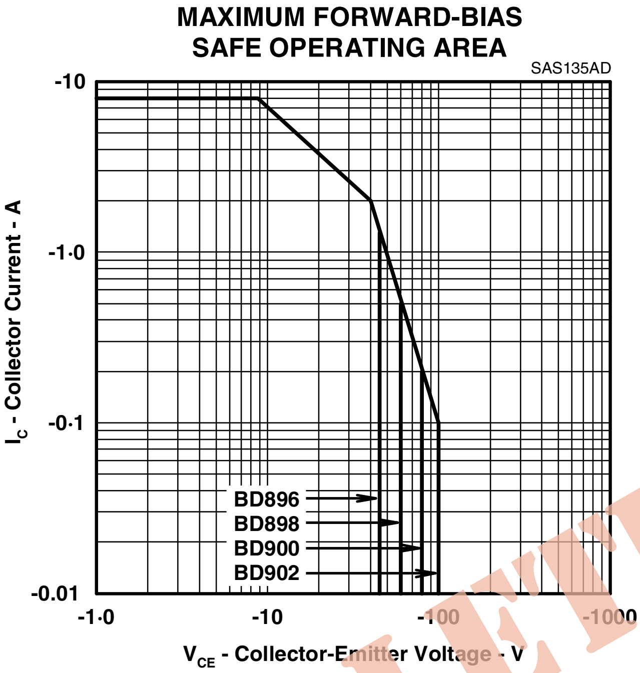

Figure 4.

THERMAL INFORMATION

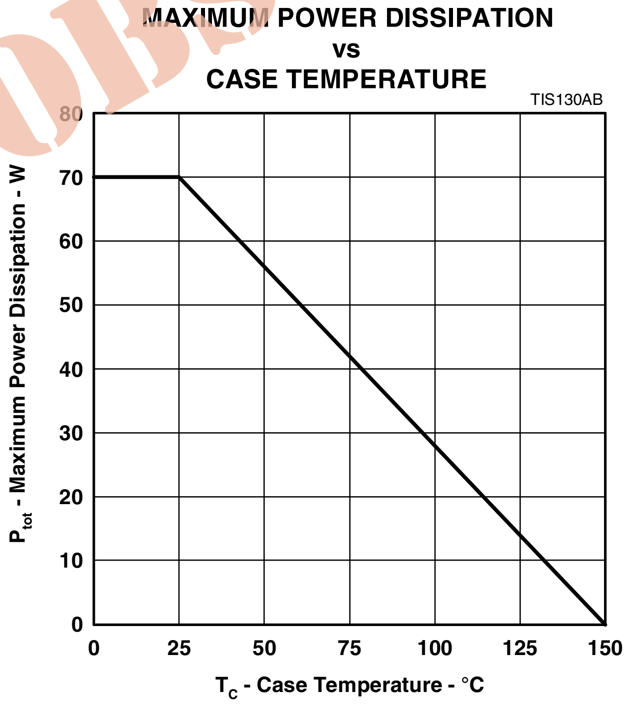

Figure 5.