electrical characteristics at 25°C case temperature

PARAMETER		TEST CONDITIONS			MIN	TYP	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C = -30 mA (see Note 5)	I_B = 0	BD240	-45			V
				BD240A	-60			
				BD240B	-80			
				BD240C	-100			
I_{CES}	Collector-emitter cut-off current	V_{CE} = -55 V	V_{BE} = 0	BD240			-0.2	mA
		V_{CE} = -70 V	V_{BE} = 0	BD240A			-0.2	
		V_{CE} = -90 V	V_{BE} = 0	BD240B			-0.2	
		V_{CE} = -115 V	V_{BE} = 0	BD240C			-0.2	
I_{CEO}	Collector cut-off current	V_{CE} = -30 V	I_B = 0	BD240/240A			-0.3	mA
		V_{CE} = -60 V	I_B = 0	BD240B/240C			-0.3	
I_{EBO}	Emitter cut-off current	V_{EB} = -5 V	I_C = 0				-1	µA
h_{FE}	Forward current transfer ratio	V_{CE} = -4 V	I_C = -0.2 A	(see Notes 5 and 6)	40			
		V_{CE} = -4 V	I_C = -1 A		15			
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_B = -0.2 A	I_C = -1 A	(see Notes 5 and 6)			-0.7	V
V_{BE}	Base-emitter voltage	V_{CE} = -4 V	I_C = -1 A	(see Notes 5 and 6)			-1.3	V
h_{fe}	Small signal forward current transfer ratio	V_{CE} = -10 V	I_C = -0.2 A	f = 1 kHz	20			
$\|h_{fe}\|$	Small signal forward current transfer ratio	V_{CE} = -10 V	I_C = -0.2 A	f = 1 MHz	3			

NOTES: 5. These parameters must be measured using pulse techniques, t_p = 300 µs, duty cycle ≤ 2%.
6. 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			4.17	°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 = -200 mA	$I_{B(on)}$ = -20 mA	$I_{B(off)}$ = 20 mA		0.2		µs
t_{off}	Turn-off time	$V_{BE(off)}$ = 3.4 V	R_L = 150 Ω	t_p = 20 µs, dc ≤ 2%		0.4		µs

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

TYPICAL CHARACTERISTICS

TYPICAL DC CURRENT GAIN vs COLLECTOR CURRENT

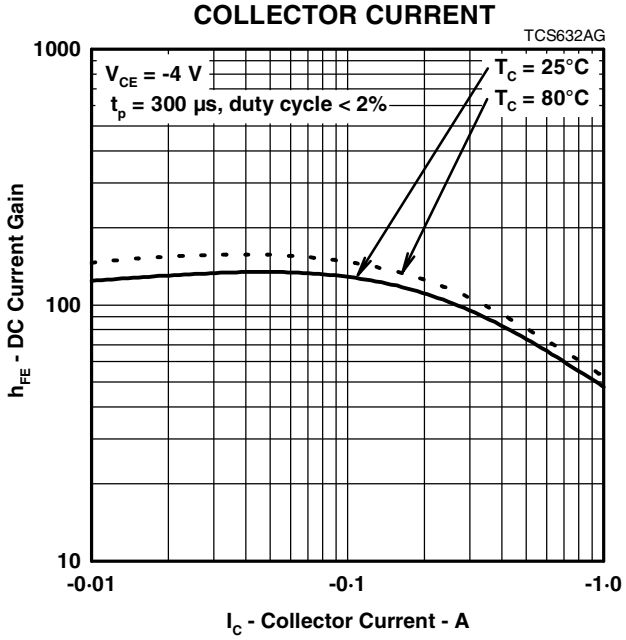

Figure 1.

COLLECTOR-EMITTER SATURATION VOLTAGE vs BASE CURRENT

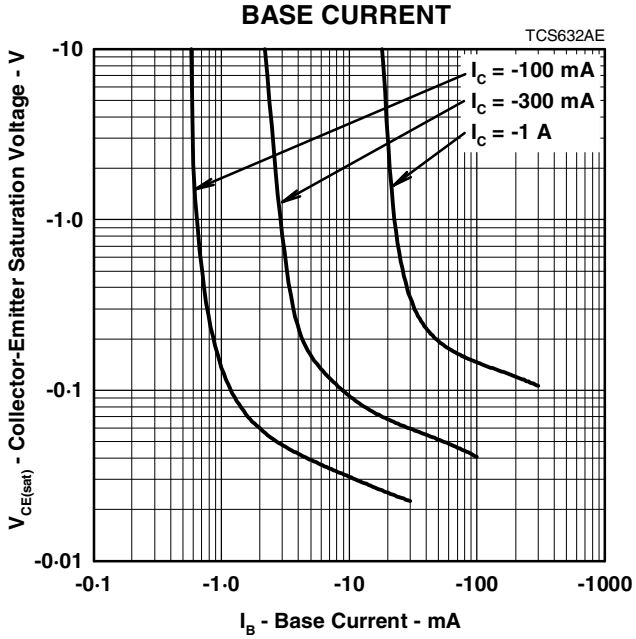

Figure 2.

BASE-EMITTER VOLTAGE vs COLLECTOR CURRENT

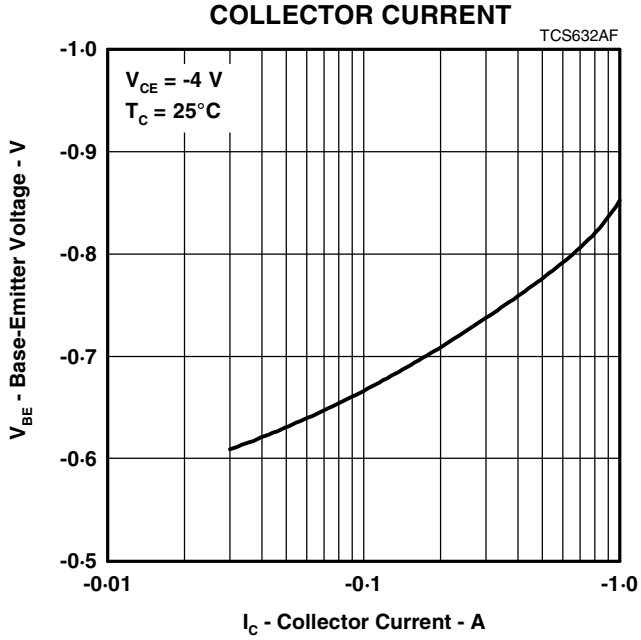

Figure 3.

MAXIMUM SAFE OPERATING REGIONS

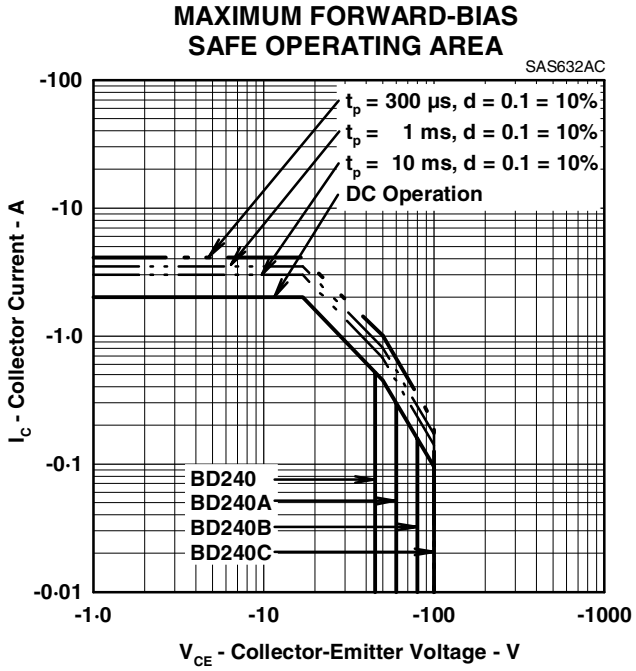

Figure 4.

THERMAL INFORMATION

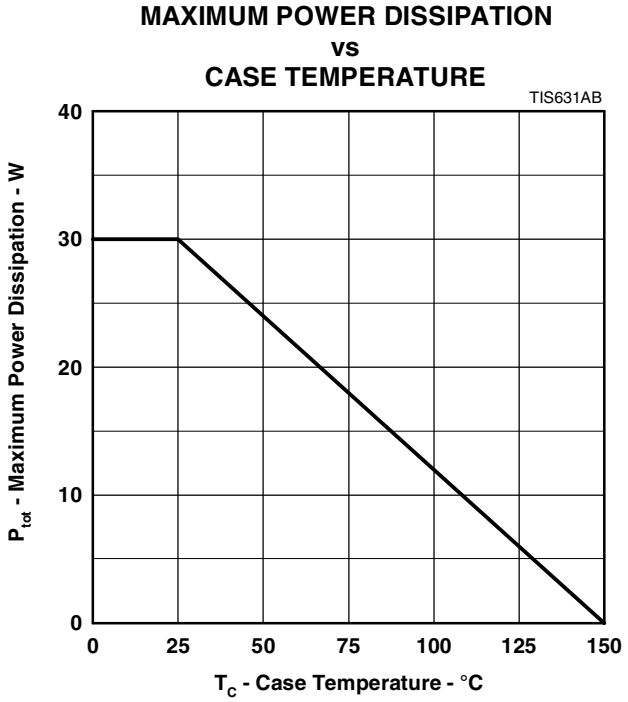

Figure 5.

Mouser Electronics

Authorized Distributor

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

Bourns:

BD240C BD240B BD240A BD240