

8961726 TEXAS INSTR (OPTO)

62C 36629

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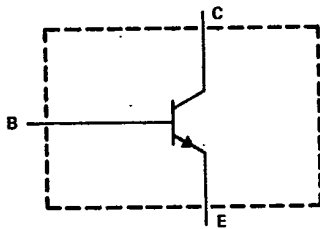
T-33-11

**BU326, BU326A  
N-P-N SILICON POWER TRANSISTORS**

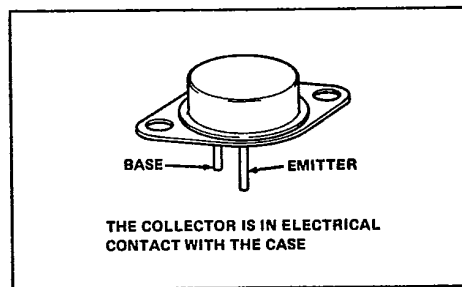
OCTOBER 1982 - REVISED OCTOBER 1984

- 60 W at 25°C Case Temperature
- 6 A Continuous Collector Current
- 8 A Peak Collector Current
- Designed for Use in Consumer and Industrial High-Voltage Switching Applications, Particularly Switching-Mode Power Supplies

**device schematic**



TO-3 PACKAGE



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

	BU326	BU326A
Collector-base voltage	800 V	900 V
Collector-emitter voltage ( $V_{BE} = 0$ )	800 V	900 V
Collector-emitter voltage ( $I_B = 0$ )	375 V	400 V
Emitter-base voltage	10 V	
Continuous collector current	6 A	
Peak collector current (see Note 1)	8 A	
Continuous base current	2 A	
Peak base current (see Note 1)	3 A	
Continuous device dissipation (see Figure 6)	60 W	
Operating junction temperature	-65°C to 150°C	

NOTE 1: These values apply for  $t_W \leq 2$  ms, duty cycle  $\leq 10\%$ .



**BD, BDW, BDX, BU, BUX, BUY Devices**

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

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
V <sub>CEO(sus)</sub>	I <sub>C</sub> = 0.1 A, L = 25 mH, See Note 2	BU326	375		V
	I <sub>C</sub> = 0.1 A, L = 25 mH, See Note 2	BU326A	400		
I <sub>CES</sub>	V <sub>CE</sub> = 800 V, V <sub>BE</sub> = 0	BU326		1	mA
	V <sub>CE</sub> = 800 V, V <sub>BE</sub> = 0, T <sub>C</sub> = 125°C			2	
	V <sub>CE</sub> = 900 V, V <sub>BE</sub> = 0	BU326A		1	
	V <sub>CE</sub> = 900 V, V <sub>BE</sub> = 0, T <sub>C</sub> = 125°C			2	
I <sub>EBO</sub>	V <sub>EB</sub> = 10 V, I <sub>C</sub> = 0			10	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 0.6 A		40		
V <sub>CE(sat)</sub>	I <sub>C</sub> = 2.5 A, I <sub>B</sub> = 0.5 A			1.5	V
	I <sub>C</sub> = 4 A, I <sub>B</sub> = 1.25 A			3	
V <sub>BE(sat)</sub>	I <sub>C</sub> = 2.5 A, I <sub>B</sub> = 0.5 A			1.4	V
	I <sub>C</sub> = 4 A, I <sub>B</sub> = 1.25 A			1.6	

NOTE 2: Inductive loop switching measurement.

**thermal characteristics**

PARAMETER	MIN	TYP	MAX	UNIT
R <sub>θJC</sub>		1.67		°C/W

**resistive-load switching characteristics at 25°C case temperature (unless otherwise noted)**

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t <sub>on</sub>	I <sub>C</sub> = 2.5 A, I <sub>B1</sub> = 0.5 A, I <sub>B2</sub> = -1 A, V <sub>CC</sub> = 250 V, See Figure 1	0.3 0.5			μs
t <sub>s</sub>		2 3.5			μs
t <sub>f</sub>		0.15			μs
t <sub>f</sub>		T <sub>C</sub> = 95°C	0.2	1	



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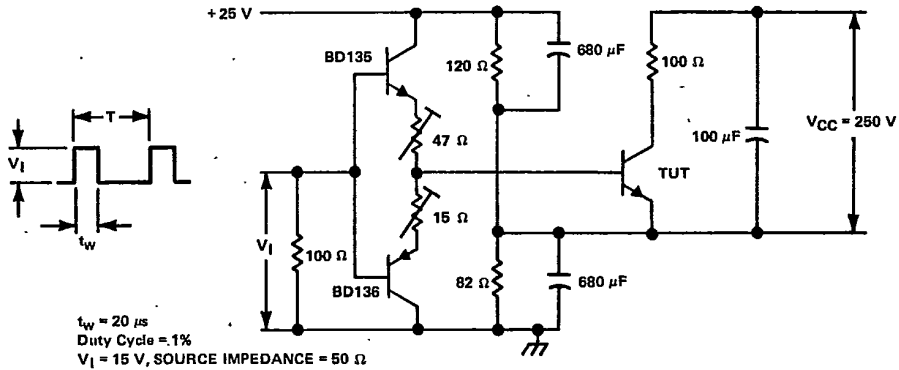
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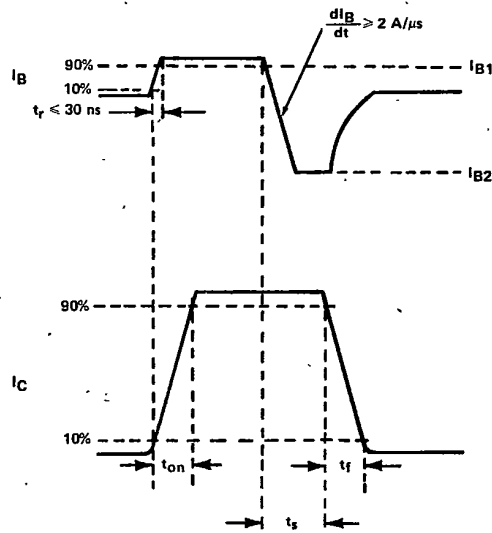
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PARAMETER MEASUREMENT INFORMATION



TEST CIRCUIT



VOLTAGE WAVEFORMS

FIGURE 1. RESISTIVE-LOAD SWITCHING



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TYPICAL CHARACTERISTICS

FORWARD CURRENT TRANSFER RATIO  
VS  
COLLECTOR CURRENT

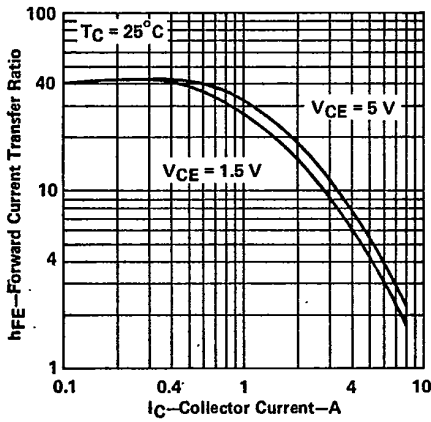


FIGURE 2

COLLECTOR-EMITTER SATURATION VOLTAGE  
VS  
BASE CURRENT

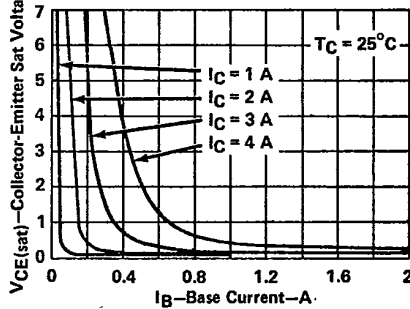


FIGURE 3

COLLECTOR-EMITTER SATURATION VOLTAGE  
VS  
BASE CURRENT

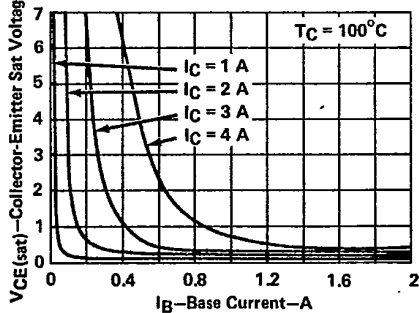


FIGURE 4

BASE-EMITTER SATURATION VOLTAGE  
VS  
BASE CURRENT

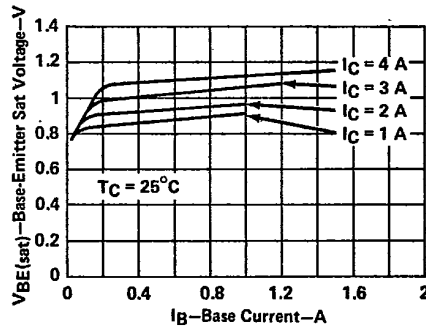


FIGURE 5

BD, BDW, BDW, BDX, BU, BUX, BUY Devices

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MAXIMUM SAFE OPERATING AREA  
FORWARD-BIAS SAFE OPERATING AREA

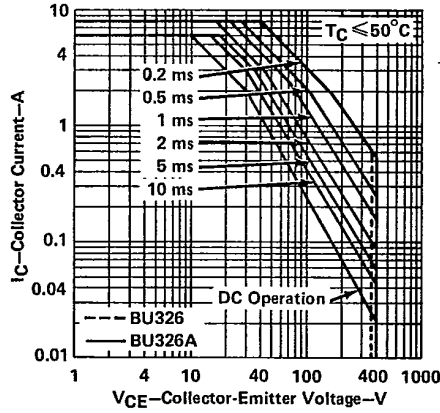


FIGURE 6

THERMAL INFORMATION  
DISSIPATION DERATING CURVE

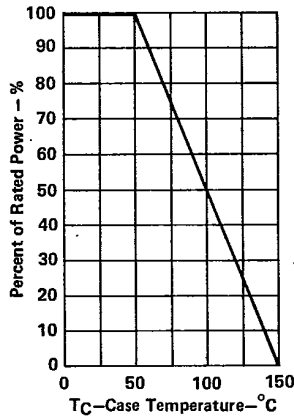


FIGURE 7



BD, BDW, BDX, BU, BUX, BUY Devices