BD 575 • BD 577
BD 579 • BD 581

PLASTIC MEDIUM POWER SILICON NPN TRANSISTOR

. . . designed for use in 5 to 10 Watt audio amplifiers and drivers utilizing complementary or quasi complementary circuits.

- DC Current Gain—h_{FE} = 40 (Min) @ I_C = 0.15 Adc
- BD 575, 577, 579, 581 are complementary with BD 576, 578, 580, 582

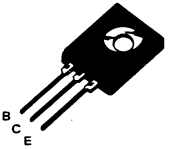
8 AMPERE POWER TRANSISTOR

NPN SILICON

45, 60, 80, 100 VOLTS
30 WATTS

MAXIMUM RATINGS

Rating	Symbol	Type	Value	Unit
Collector-Emitter Voltage	V_{CEO}	BD 575 BD 577 BD 579 BD 581	45 60 80 100	Vdc
Collector-Base Voltage	V_{CBO}	BD 575 BD 577 BD 579 BD 581	45 60 80 100	Vdc
Emitter-Base Voltage	V_{EBO}		5	Vdc
Collector Current	I_C		3.0	Adc
Base Current	I_B		1.0	Adc
Total Device Dissipation T_C=25°C Derate above 25°C	P_D		30 240	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}		—65 to +150	°C



HARDWARE AVAILABLE:
1. MICA WASHER — 14B 52600 FO13
2. NYLON SHOULDER BUSHING - SB 51547 FO10

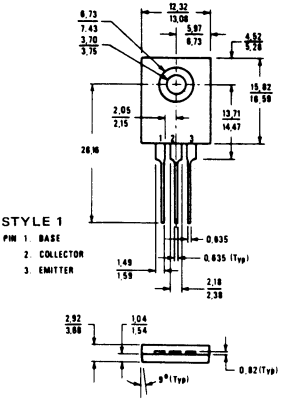
THERMAL CHARACTERISTICS

Characteristic	Symbol		Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}		4.16	° C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Type	Min	Max	Unit
Collector-Emitter Sustaining Voltage* (I_C = 0.1 Adc, I_B = 0)	BV_{CEO}*	BD 575 BD 577 BD 579 BD 581	45 60 80 100	— — — —	Vdc
Collector Cutoff Current (V_{CB} = 45 Vdc, I_E = 0) (V_{CB} = 60 Vdc, I_E = 0) (V_{CB} = 80 Vdc, I_E = 0) (V_{CB} = 100 Vdc, I_E = 0)	I_{CBO}	 BD 575 BD 577 BD 579 BD 581	 — — — —	 0.1 0.1 0.1 0.1	mAdc
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)	I_{EBO}		—	1.0	mAdc
DC current Gain (I_C = 0.15 A, V_{CE} = 2 V) (I_C = 1 A, V_{CE} = 2 V)	h_{FE}*	 BD 575,577 BD 579,581 BD 575,577 BD 579,581	 40 30 25 15	 — — — —	
Collector-Emitter Saturation Voltage* (I_C = 1 Adc, I_B = 0.1 Adc)	$V_{CE(sat)}$*	BD 575,577 BD 579,581	— —	0.6 0.8	Vdc
Base-Emitter On Voltage* (I_C = 1 Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$*	BD 575,577 BD 579,581	— —	1.3 1.5	Vdc
Current-Gain-Bandwidth Product (I_C = 250 mAdc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T		3.0	—	MHz

* Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

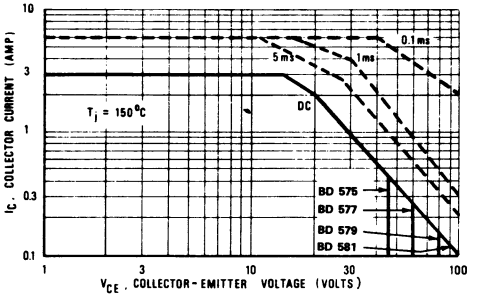


If lead bending is required use suitable clamps or other supports between transistor case and point of bend

Case 199-04

Dimensions in millimeters

FIGURE 1 – ACTIVE REGION SAFE OPERATING AREA



The Safe Operating Area Curves indicate I_C–V_{CE} limits below which the device will not enter secondary breakdown. Collector load lines for specific circuits must fall within the applicable Safe Area to avoid causing a catastrophic failure. To insure operation below the maximum T_J, power-temperature derating must be observed for both steady state and pulse power conditions.

FIGURE 2 – COLLECTOR SATURATION REGION

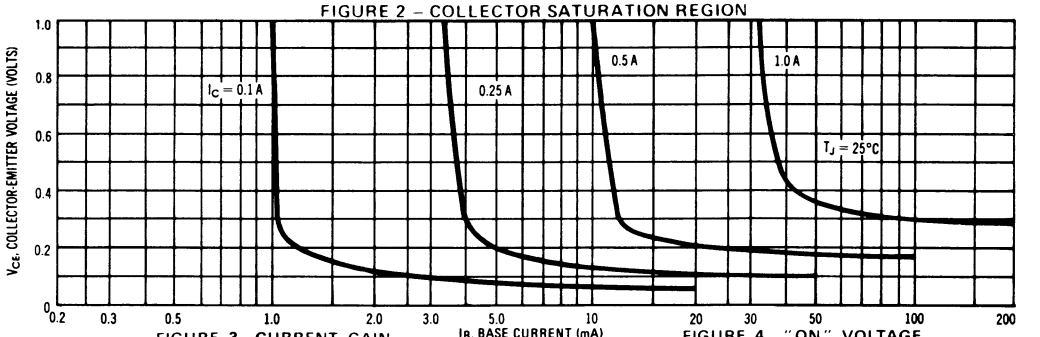


FIGURE 3—CURRENT GAIN

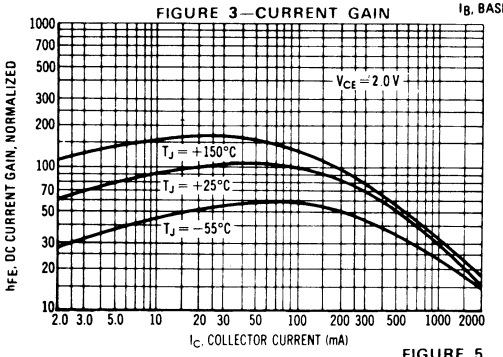


FIGURE 4 "ON" VOLTAGE

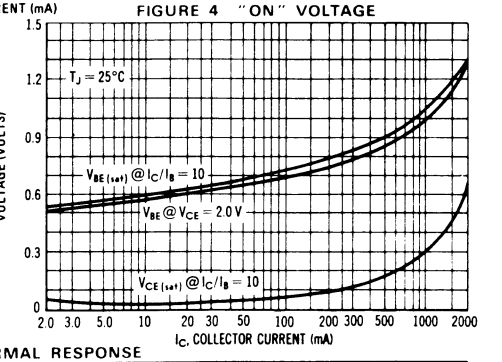
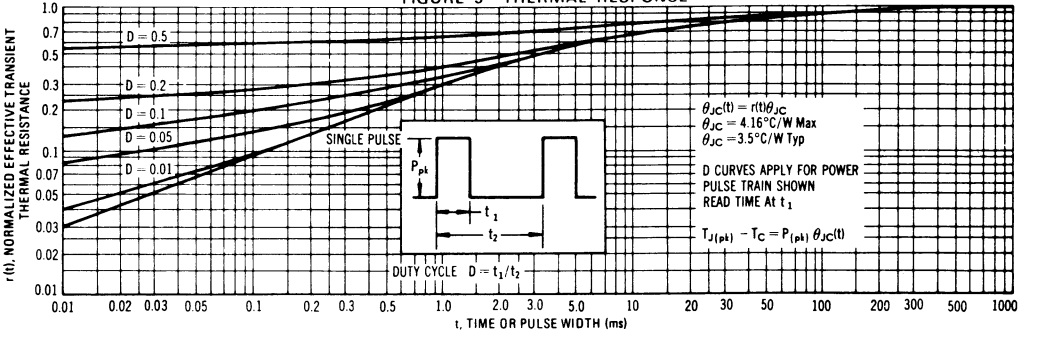


FIGURE 5 THERMAL RESPONSE



BD 576 • BD 578
BD 580 • BD 582

PLASTIC MEDIUM POWER SILICON PNP TRANSISTOR

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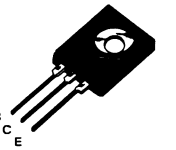
8 AMPERE POWER TRANSISTOR

PNP SILICON

45, 60, 80, 100 VOLTS 30 WATTS



HARDWARE AVAILABLE:
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2. NYLON SHOULDER BUSHING - SB 51547 FO10

MAXIMUM RATINGS

Rating	Symbol	Type	Value	Unit
Collector-Emitter Voltage	V_{CEO}	BD 576 BD 578 BD 580 BD 582	45 60 80 100	Vdc
Collector-Base Voltage	V_{CBO}	BD 576 BD 578 BD 580 BD 582	45 60 80 100	Vdc
Emitter-Base Voltage	V_{EBO}		5	Vdc
Collector Current	I_C		3.0	Adc
Base Current	I_B		1.0	Adc
Total Device Dissipation T_C=25°C Derate above 25°C	P_D		30 240	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}		—65 to +150	°C

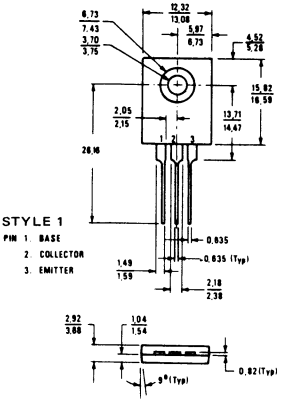
THERMAL CHARACTERISTICS

Characteristic	Symbol		Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}		4.16	° C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Type	Min	Max	Unit
Collector-Emitter Sustaining Voltage* (I_C = 0.1 Adc, I_B = 0)	BV_{CEO}*	BD 576 BD 578 BD 580 BD 582	45 60 80 100	— — — —	Vdc
Collector Cutoff Current (V_{CB} = 45 Vdc, I_E = 0) (V_{CB} = 60 Vdc, I_E = 0) (V_{CB} = 80 Vdc, I_E = 0) (V_{CB} = 100 Vdc, I_E = 0)	I_{CBO}	BD 576 BD 578 BD 580 BD 582	— — — —	0.1 0.1 0.1 0.1	mAdc
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)	I_{EBO}		—	1.0	mAdc
DC current Gain (I_C = 0.15 A, V_{CE} = 2 V) (I_C = 1 A, V_{CE} = 2 V)	h_{FE}*	BD 576,578 BD 580,582 BD 576,578 BD 580,582	40 30 25 15	— — — —	
Collector-Emitter Saturation Voltage* (I_C = 1 Adc, I_B = 0.1 Adc)	$V_{CE(sat)}$*	BD 576,578 BD 580,582	—	0.6 0.8	Vdc
Base-Emitter On Voltage* (I_C = 1 Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$*	BD 576,578 BD 580,582	—	1.3 1.5	Vdc
Current-Gain-Bandwidth Product (I_C = 250 mAdc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T		3.0	—	MHz

* Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.



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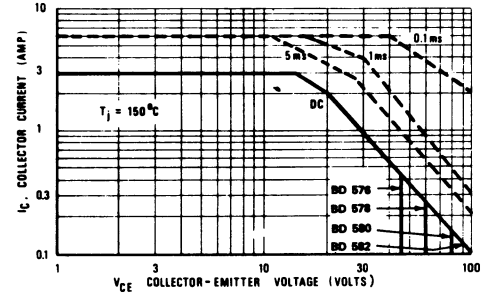
Case 199-04

Dimensions in millimeters

FIGURE 1 – ACTIVE REGION SAFE OPERATING AREA



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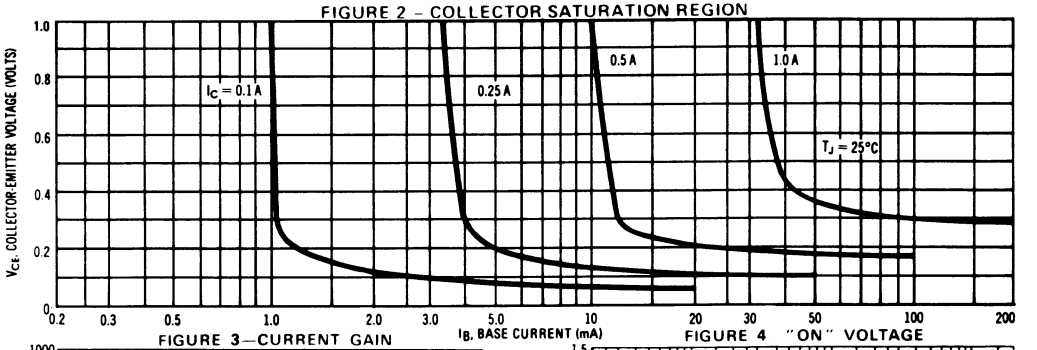


FIGURE 3–CURRENT GAIN

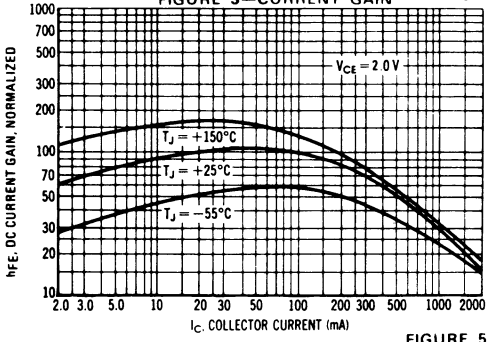


FIGURE 4 "ON" VOLTAGE

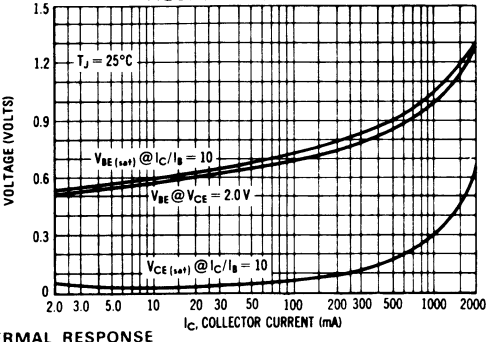
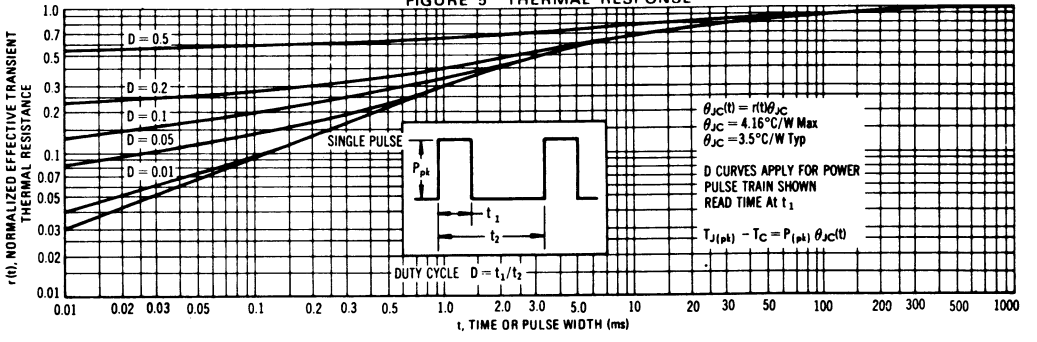


FIGURE 5 THERMAL RESPONSE



BD 585 • BD 587
BD 589 • BD 591

PLASTIC MEDIUM POWER
SILICON NPN TRANSISTOR

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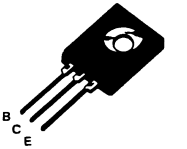
4 AMPERE
POWER TRANSISTOR

NPN SILICON

45, 60, 80, 100 VOLTS
40 WATTS



HARDWARE AVAILABLE:
1. MICA WASHER – 14B 52600 FO13
2. NYLON SHOULDER BUSHING
- SB 51547 FO10

MAXIMUM RATINGS

Rating	Symbol	Type	Value	Unit
Collector-Emitter Voltage	V_{CEO}	BD 585 BD 587 BD 589 BD 591	45 60 80 100	Vdc
Collector-Base Voltage	V_{CBO}	BD 585 BD 587 BD 589 BD 591	45 60 80 100	Vdc
Emitter-Base Voltage	V_{EBO}		5	Vdc
Collector Current	I_C		4.0	Adc
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Operating and Storage Junction Temperature Range	T_J, T_{stg}		−55 to +150	°C

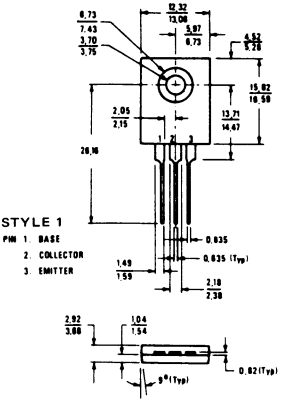
THERMAL CHARACTERISTICS

Characteristic	Symbol		Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}		3	° C/W

ELECTRICAL CHARACTERISTICS (T_c = 25°C unless otherwise noted)

Characteristic	Symbol	Type	Min	Max	Unit
Collector-Emitter Sustaining Voltage* (I_C = 0.1 Adc, I_B = 0)	BV_{CEO}*	BD 585 BD 587 BD 589 BD 591	45 60 80 100	— — — —	Vdc
Collector Cutoff Current (V_{CB} = 45 Vdc, I_E = 0) (V_{CB} = 60 Vdc, I_E = 0) (V_{CB} = 80 Vdc, I_E = 0) (V_{CB} = 100 Vdc, I_E = 0)	I_{CBO}	 BD 585 BD 587 BD 589 BD 591	 — — — —	 0.1 0.1 0.1 0.1	mAdc
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)	I_{EBO}		—	1.0	mAdc
DC current Gain (I_C = 0.5 A, V_{CE} = 2 V) (I_C = 2A, V_{CE} = 2 V)	h_{FE}*	 BD 585/587 BD 589/591 BD 585/587 BD 589/591	 40 30 25 15	 — — — —	
Collector-Emitter Saturation Voltage* (I_C = 2Adc, I_B = 0.2 Adc)	$V_{CE(sat)}$*		—	0.8	Vdc
Base-Emitter On Voltage* (I_C = 2Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$*		—	1.5	Vdc
Current-Gain-Bandwidth Product (I_C =0.25Adc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T		3.0	—	MHz

* Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.



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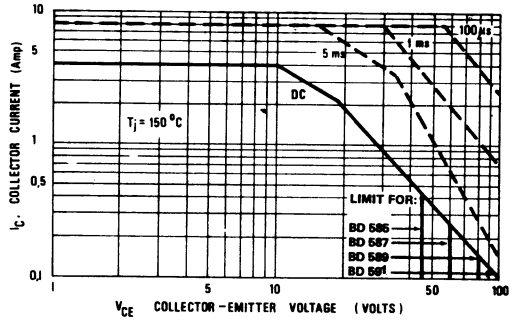
Case 199-04

Dimensions in millimeters

FIGURE 1 – ACTIVE-REGION SAFE OPERATING AREA



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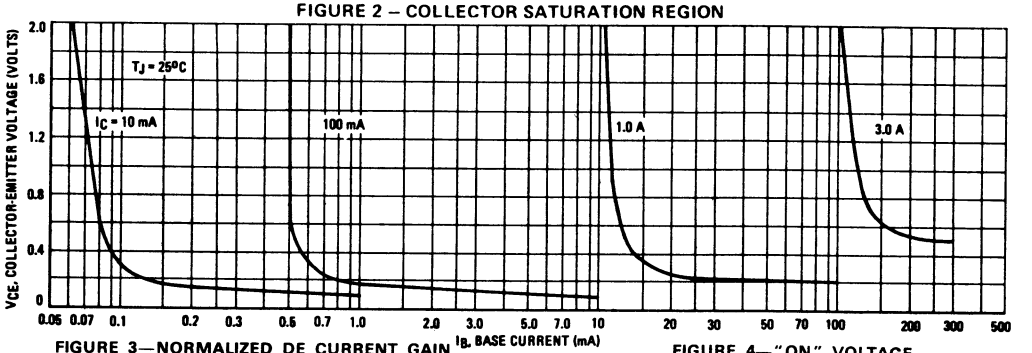


FIGURE 3—NORMALIZED DE CURRENT GAIN

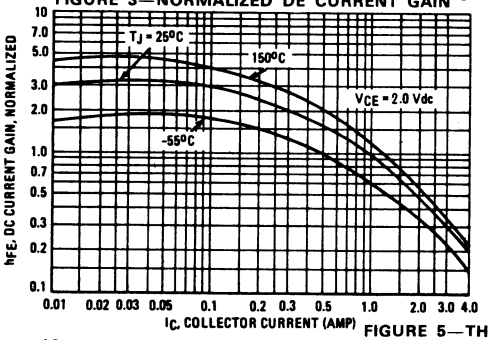


FIGURE 4—"ON" VOLTAGE

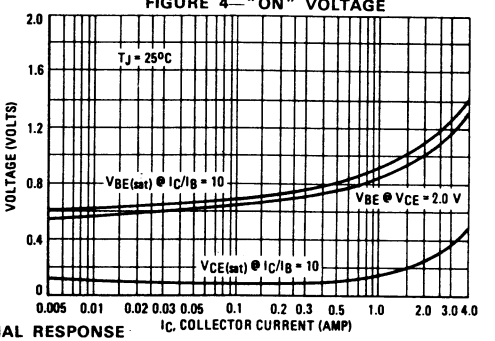
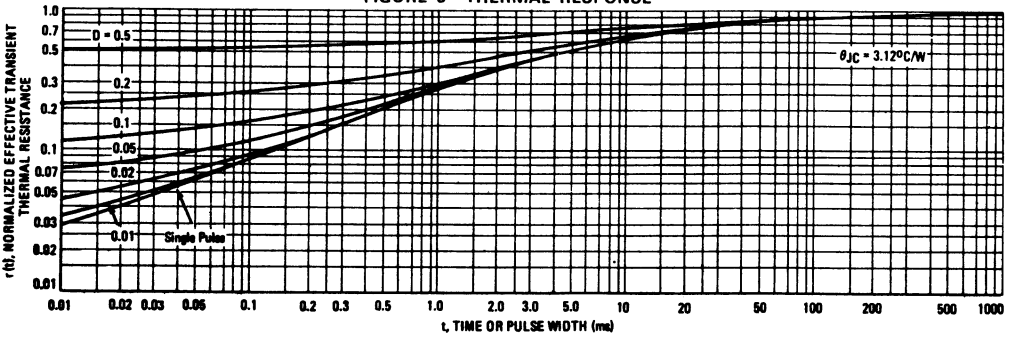


FIGURE 5—THERMAL RESPONSE



BD 586 • BD 588
BD 590 • BD 592

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SILICON PNP TRANSISTOR

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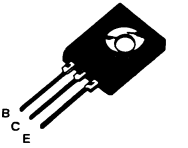
POWER TRANSISTOR

PNP SILICON

45, 60, 80, 100 VOLTS
40 WATTS



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MAXIMUM RATINGS

Rating	Symbol	Type	Value	Unit
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THERMAL CHARACTERISTICS

Characteristic	Symbol		Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}		3	° C/W

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Characteristic	Symbol	Type	Min	Max	Unit
Collector-Emitter Sustaining Voltage* (I_C = 0.1 Adc, I_B = 0)	BV_{CEO}*	BD 586 BD 588 BD 590 BD 592	45 60 80 100	– – – –	Vdc
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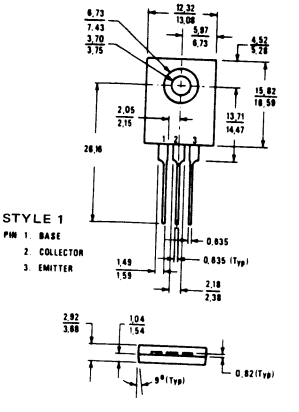
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)	I_{EBO}		—	1.0	mAdc
DC current Gain (I_C = 0.5 A, V_{CE} = 2 V) (I_C = 2A, V_{CE} = 2 V)	h_{FE}*	BD 586/588 BD 590/592 BD 586/588 BD 590/592	40 30 25 15	– – – –	
Collector-Emitter Saturation Voltage* (I_C = 2Adc, I_B = 0.2 Adc)	$V_{CE(sat)}$*		—	0.8	Vdc
Base-Emitter On Voltage* (I_C = 2Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$*		—	1.5	Vdc
Current-Gain-Bandwidth Product (I_C =0.25Adc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T		3.0	—	MHz

* Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.



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Case 199-04

Dimensions in millimeters

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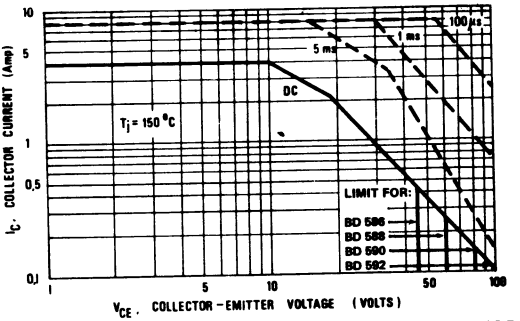

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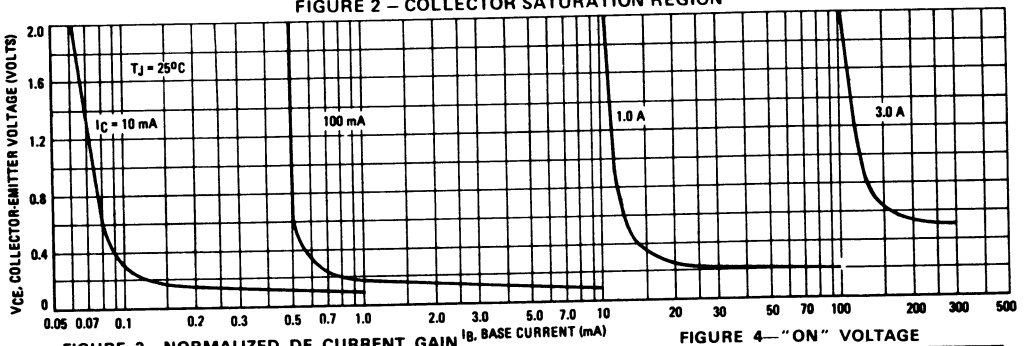

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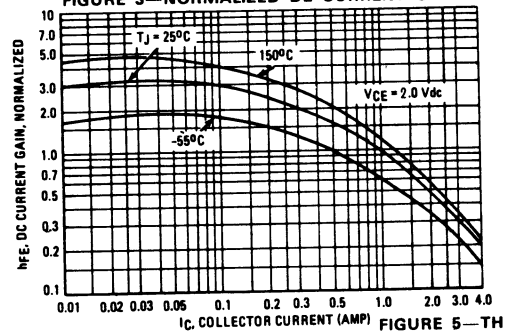

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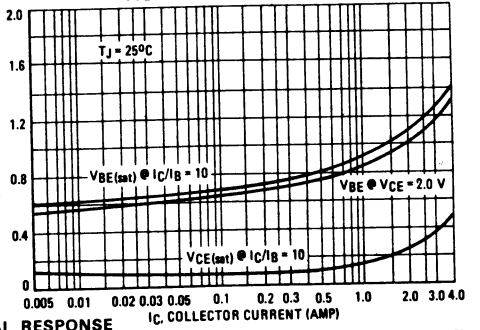

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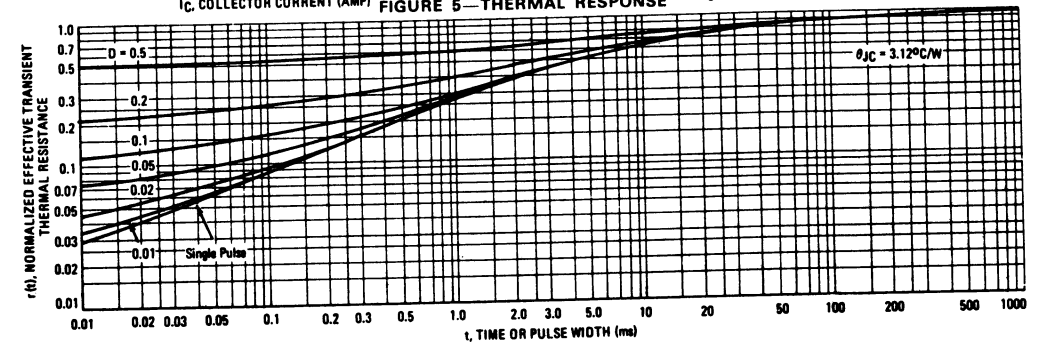


BD 595 • BD 597
BD 599 • BD 601

PLASTIC HIGH POWER SILICON NPN TRANSISTOR

. . . designed for use up to 30 Watt audio amplifiers utilizing complementary or quasi complementary circuits.

- DC Current Gain—h_{FE} = 40 (Min) @ I_C = 1.0 Adc
- BD 595, 597, 599, 601 are complementary with BD 596, 598, 600, 602

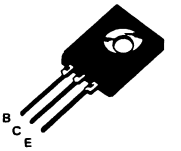
8 AMPERE POWER TRANSISTOR

NPN SILICON

45, 60, 80, 100 VOLTS
55 WATTS

MAXIMUM RATINGS

Rating	Symbol	Type	Value	Unit
Collector-Emitter Voltage	V_{CEO}	BD 595 BD 597 BD 599 BD 601	45 60 80 100	Vdc
Collector-Base Voltage	V_{CBO}	BD 595 BD 597 BD 599 BD 601	45 60 80 100	Vdc
Emitter-Base Voltage	V_{EBO}		5	Vdc
Collector Current	I_C		8.0	Adc
Base Current	I_B		3.0	Adc
Total Device Dissipation T_C=25°C	P_D		55	Watts
Operating and Storage Junction Temperature Range	T_J, T_{stg}		—55 to +150	°C



HARDWARE AVAILABLE:
1. MICA WASHER — 14B 52600 FO13
2. NYLON SHOULDER BUSHING - SB 51547 FO10

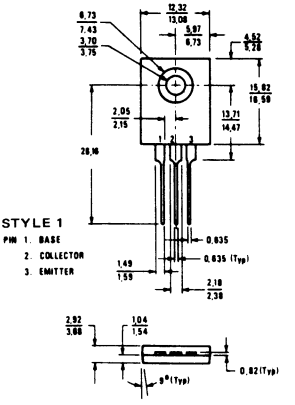
THERMAL CHARACTERISTICS

Characteristic	Symbol		Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}		2.3	° C/W

ELECTRICAL CHARACTERISTICS (T_c = 25°C unless otherwise noted)

Characteristic	Symbol	Type	Min	Max	Unit
Collector-Emitter Sustaining Voltage* (I_C = 0.1 Adc, I_B = 0)	BV_{CEO}*	BD 595	45	—	Vdc
		BD 597	60	—	
		BD 599	80	—	
(I_C = 0.05 Adc, I_B = 0)		BD 601	100	—	
Collector Cutoff Current	I_{CBO}				mAdc
(V_{CB} = 45 Vdc, I_E = 0)		BD 595	—	0.1	
(V_{CB} = 60 Vdc, I_E = 0)		BD 597	—	0.1	
(V_{CB} = 80 Vdc, I_E = 0)		BD 599	—	0.1	
(V_{CB} = 100 Vdc, I_E = 0)		BD 601	—	0.1	
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)	I_{EBO}		—	1.0	mAdc
DC current Gain	h_{FE}*				
(I_C = 1 A, V_{CE} = 2 V)		BD 595	40	—	
		BD 597	30	—	
(I_C = 3 A, V_{CE} = 2 V)		BD 599	25	—	
		BD 601	15	—	
Collector-Emitter Saturation Voltage* (I_C = 3 Adc, I_B = 0.3 Adc)	$V_{CE(sat)}$*		—	1.0	Vdc
Base-Emitter On Voltage* (I_C = 3 Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$*		—	1.6	Vdc
Current-Gain-Bandwidth Product (I_C =0.25Adc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T		3.0	—	MHz

* Pulse Test: Pulse Width ≤ 300 μs. Duty Cycle ≤ 2.0%.



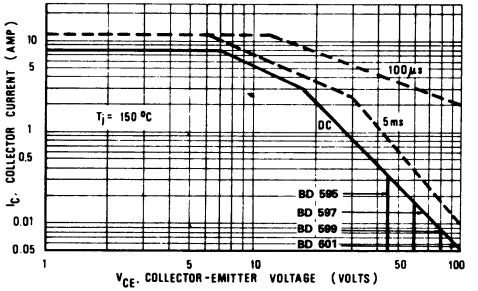
If lead bending is required use suitable clamps or other supports between transistor case and point of bend

Case 199-04

Dimensions in millimeters

BD 595, 597, 599, 601 (continued)

FIGURE 1 – ACTIVE REGION SAFE OPERATING AREA



The Safe Operating Area Curves indicate I_C–V_{CE} limits below which the device will not enter secondary breakdown. Collector load lines for specific circuits must fall within the applicable Safe Area to avoid causing a catastrophic failure. To insure operation below the maximum T_J, power-temperature derating must be observed for both steady state and pulse power conditions.

FIGURE 2 – COLLECTOR SATURATION REGION

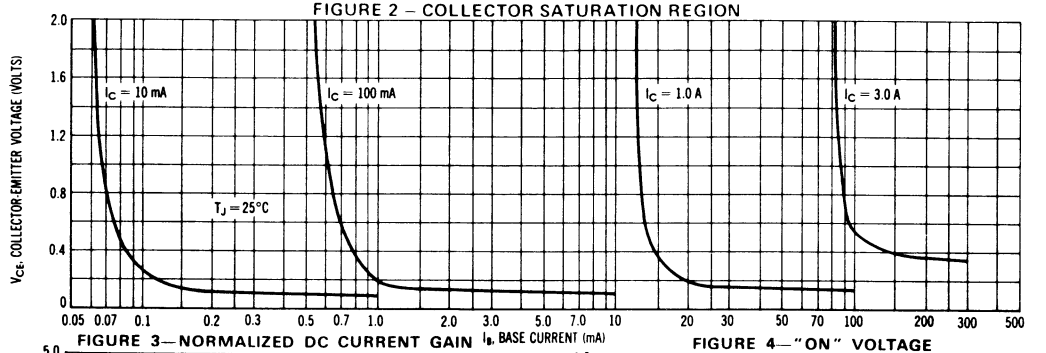


FIGURE 3—NORMALIZED DC CURRENT GAIN

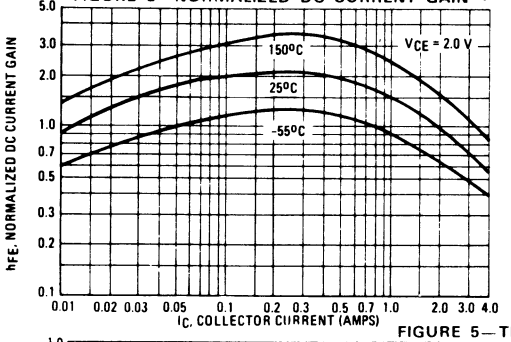


FIGURE 4—"ON" VOLTAGE

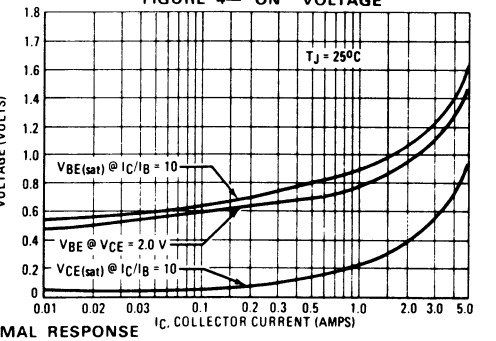
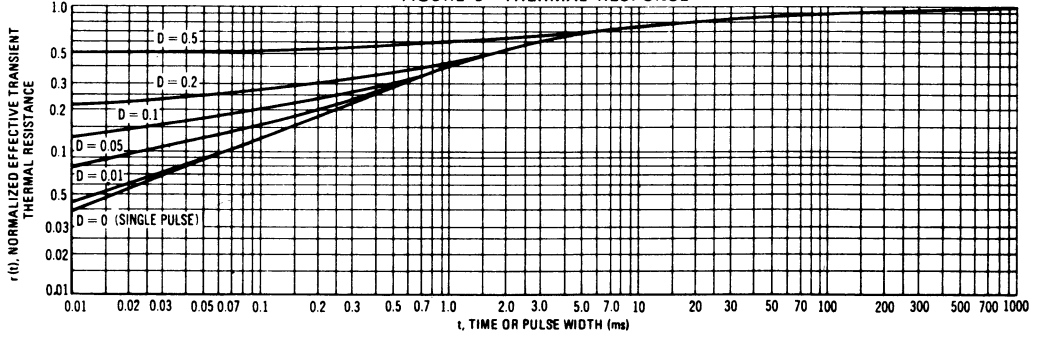


FIGURE 5—THERMAL RESPONSE



BD 596 • BD 598
BD 600 • BD 602

PLASTIC HIGH POWER SILICON PNP TRANSISTOR

. . . designed for use up to 30 Watt audio amplifiers utilizing complementary or quasi complementary circuits.

- DC Current Gain—h_{FE} = 40 (Min) @ I_C = 1.0 Adc
- BD 596, 598, 600, 602 are complementary with BD 595, 597, 599, 600

8 AMPERE POWER TRANSISTOR

PNP SILICON

45, 60, 80, 100 VOLTS
55 WATTS

HARDWARE AVAILABLE:
1. MICA WASHER – 14B 52600 FO13
2. NYLON SHOULDER BUSHING - SB 51547 FO10

MAXIMUM RATINGS

Rating	Symbol	Type	Value	Unit
Collector-Emitter Voltage	V_{CEO}	BD 596 BD 598 BD 600 BD 602	45 60 80 100	Vdc
Collector-Base Voltage	V_{CBO}	BD 596 BD 598 BD 600 BD 602	45 60 80 100	Vdc
Emitter-Base Voltage	V_{EBO}		5	Vdc
Collector Current	I_C		8.0	Adc
Base Current	I_B		3.0	Adc
Total Device Dissipation T_C=25°C	P_D		55	Watts
Operating and Storage Junction Temperature Range	T_J, T_{stg}		—55 to +150	°C

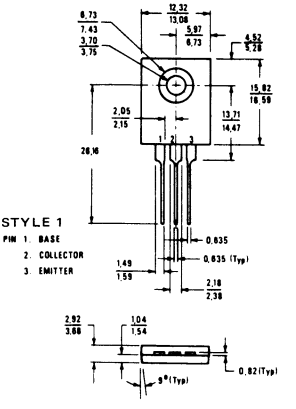
THERMAL CHARACTERISTICS

Characteristic	Symbol		Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}		2.3	° C/W

ELECTRICAL CHARACTERISTICS (T_c = 25°C unless otherwise noted)

Characteristic	Symbol	Type	Min	Max	Unit
Collector-Emitter Sustaining Voltage* (I_C = 0.1 Adc, I_B = 0) (I_C = 0.05 Adc, I_B = 0)	BV_{CEO}*	BD 596 BD 598 BD 600 BD 602	45 60 80 100	— — — —	Vdc
Collector Cutoff Current (V_{CB} = 45 Vdc, I_E = 0) (V_{CB} = 60 Vdc, I_E = 0) (V_{CB} = 80 Vdc, I_E = 0) (V_{CB} = 100 Vdc, I_E = 0)	I_{CBO}	BD 596 BD 598 BD 600 BD 602	— — — —	0.1 0.1 0.1 0.1	mAdc
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)	I_{EBO}		—	1.0	mAdc
DC current Gain (I_C = 1 A, V_{CE} = 2 V) (I_C = 3 A, V_{CE} = 2 V)	h_{FE}*	BD 596 BD 598 BD 600 BD 602	40 30 25 15	— — — —	
Collector-Emitter Saturation Voltage* (I_C = 3 Adc, I_B = 0.3 Adc)	$V_{CE(sat)}$*		—	1.0	Vdc
Base-Emitter On Voltage* (I_C = 3 Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$*		—	1.6	Vdc
Current-Gain-Bandwidth Product (I_C =0.25Adc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T		3.0	—	MHz

* Pulse Test: Pulse Width ≤ 300 μs. Duty Cycle ≤ 2.0%.

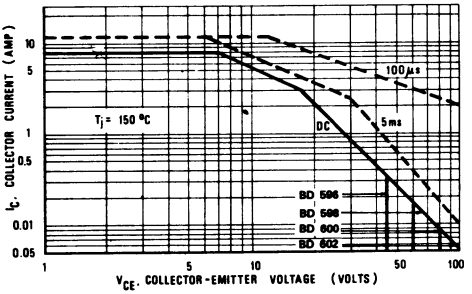


If lead bending is required use suitable clamps or other supports between transistor case and point of bend

Case 199-04

Dimensions in millimeters

FIGURE 1 – ACTIVE REGION SAFE OPERATING AREA



The Safe Operating Area Curves indicate I_C–V_{CE} limits below which the device will not enter secondary breakdown. Collector load lines for specific circuits must fall within the applicable Safe Area to avoid causing a catastrophic failure. To insure operation below the maximum T_J, power-temperature derating must be observed for both steady state and pulse power conditions.

FIGURE 2 – COLLECTOR SATURATION REGION

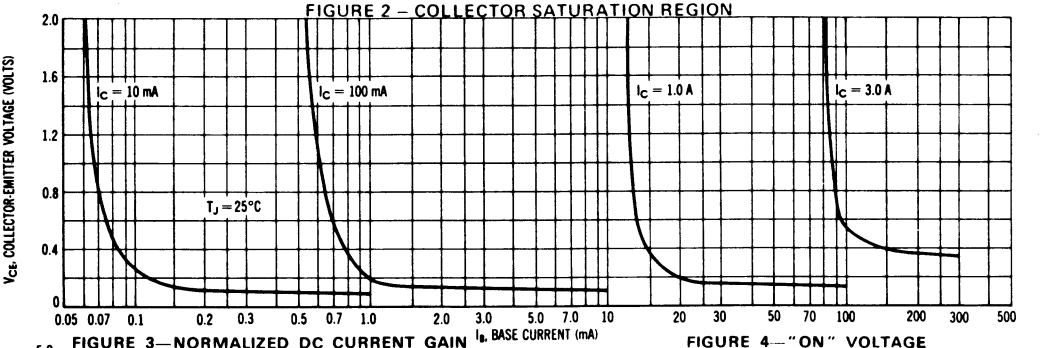


FIGURE 3—NORMALIZED DC CURRENT GAIN

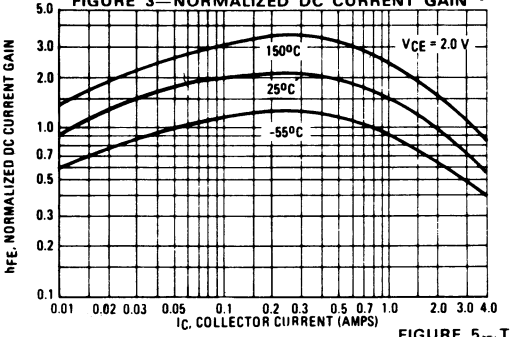


FIGURE 4—"ON" VOLTAGE

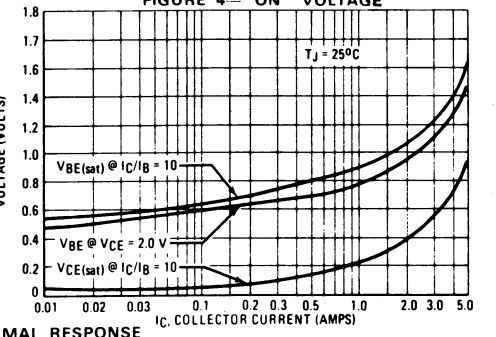
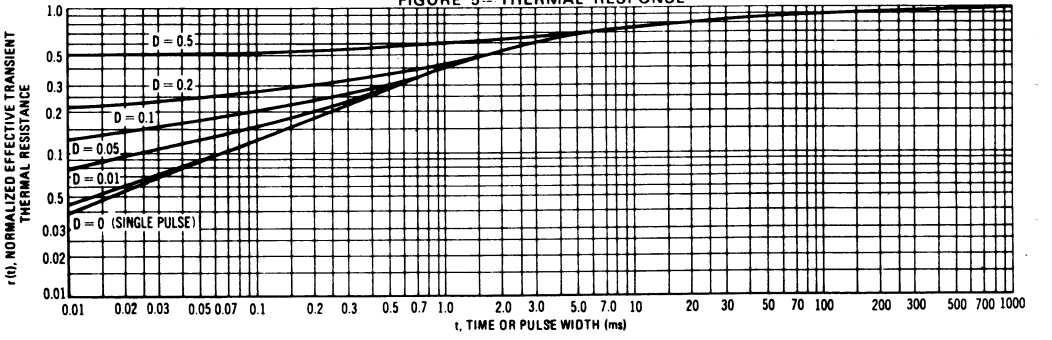


FIGURE 5– THERMAL RESPONSE



BD 605
BD 607
BD 609

PLASTIC HIGH POWER SILICON NPN TRANSISTOR

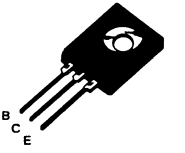
. . . designed for use in high power audio amplifiers utilizing complementary or quasi complementary circuits.

- DC Current—h_{FE} = 30 (Min) @ I_C = 2.0 Adc
- BD 605, 607, 609 are complementary with BD 606, 608, 610

10 AMPERE POWER TRANSISTOR

NPN SILICON

45, 60, 80 VOLTS
90 WATTS



HARDWARE AVAILABLE:
1. MICA WASHER – 14B 52600 FO13
2. NYLON SHOULDER BUSHING - SB 51547 FO10

MAXIMUM RATINGS

Rating	Symbol	Type	Value	Unit
Collector-Emitter Voltage	V_{CEO}	BD 605 BD 607 BD 609	45 60 80	Vdc
Collector-Base Voltage	V_{CBO}	BD 605 BD 607 BD 609	55 70 80	Vdc
Emitter-Base Voltage	V_{EBO}		5	Vdc
Collector Current	I_C		10.0	Adc
Base Current	I_B		6.0	Adc
Total Device Dissipation T_C=25°C Derate above 25°C	P_D		90 720	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}		—55 to +150	°C

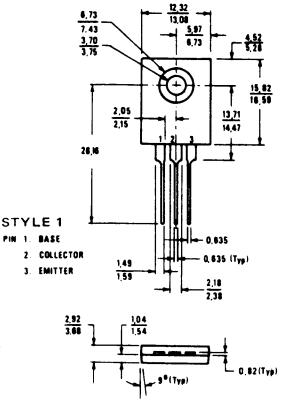
THERMAL CHARACTERISTICS

Characteristic	Symbol		Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}		1.39	° C/W

ELECTRICAL CHARACTERISTICS (T_c = 25°C unless otherwise noted)

Characteristic	Symbol	Type	Min	Max	Unit
Collector-Emitter Sustaining Voltage* (I_C = 0.2 Adc, I_B = 0)	BV_{CEO}*	BD 605 BD 607 BD 609	45 60 80	— — —	Vdc
Collector Cutoff Current (V_{CB} = 55 Vdc, I_E = 0) (V_{CB} = 70 Vdc, I_E = 0) (V_{CB} = 80 Vdc, I_E = 0)	I_{CBO}	BD 605 BD 607 BD 609	— — —	1.0 1.0 1.0	mAdc
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)	I_{EBO}		—	2.0	mAdc
DC current Gain (I_C = 2A, V_{CE} = 2 V) (I_C = 4A, V_{CE} = 2 V)	h_{FE}*		30 15	— —	
Collector-Emitter Saturation Voltage* (I_C = 4 Adc, I_B = 0.4 Adc)	$V_{CE(sat)}$*		—	1.1	Vdc
Base-Emitter On Voltage* (I_C = 4 Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$*		—	1.6	Vdc
Current-Gain-Bandwidth Product (I_C = 1.0 Adc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T		1.5	—	MHz

* Pulse Test: Pulse Width ≤ 300 μs. Duty Cycle ≤ 2.0%.



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Case 199-04

Dimensions in millimeters

FIGURE 1 — ACTIVE REGION DC SAFE OPERATING AREA

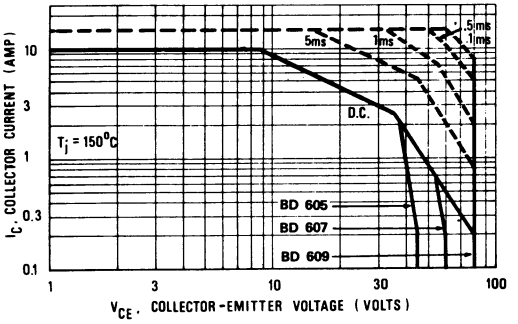


FIGURE 2 — POWER-TEMPERATURE DERATING CURVE

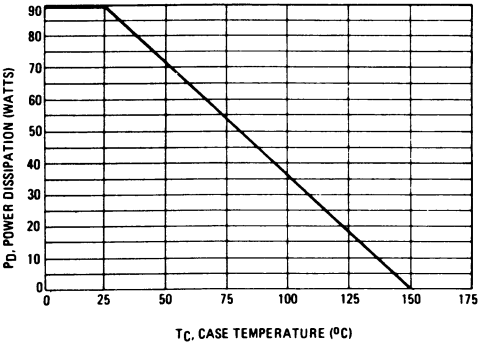


FIGURE 3 — "ON" VOLTAGES

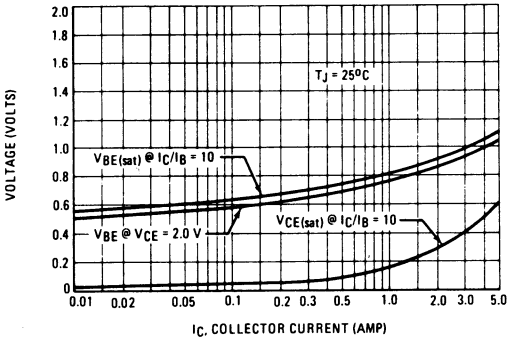


FIGURE 4 — CURRENT GAIN

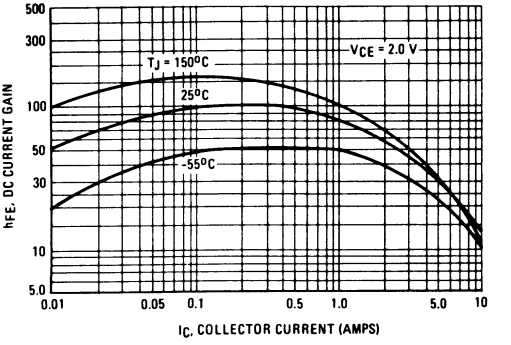
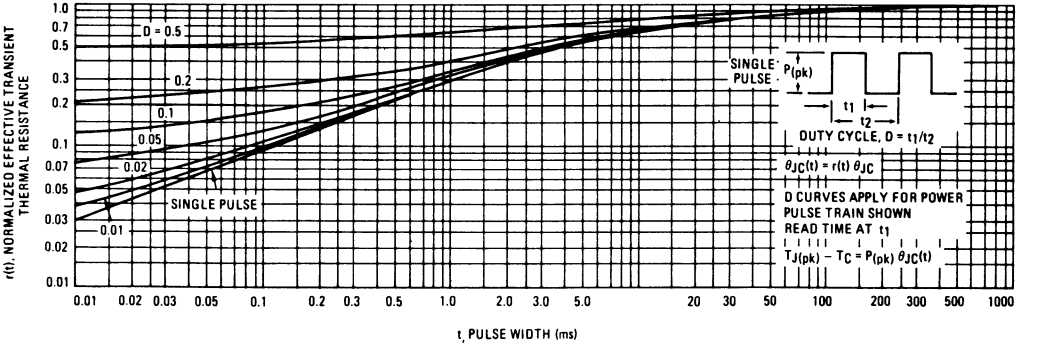


FIGURE 5 — THERMAL RESPONSE



Note 1:

There are two limitations on the power handling ability of a transistor; average junction temperature and second breakdown. Safe operating area curves indicate I_C - V_{CE} limits of the transistor that must be observed for reliable operation; i.e., the transistor must not be subjected to greater dissipation than the curves indicate.

The data of Figure 1 is based on $T_{J(pk)}$ = 150°C; T_C is variable depending on conditions. Second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(pk)} \leq 150°C$. At high case temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by second breakdown. (See AN-415)

BD 606
BD 608
BD 610

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SILICON PNP TRANSISTOR

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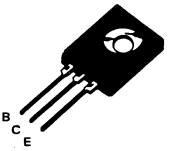
10 AMPERE
POWER TRANSISTOR

PNP SILICON

45, 60, 80 VOLTS
90 WATTS



HARDWARE AVAILABLE:
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- SB 51547 FO10

MAXIMUM RATINGS

Rating	Symbol	Type	Value	Unit
Collector-Emitter Voltage	V_{CEO}	BD 606 BD 608 BD 610	45 60 80	Vdc
Collector-Base Voltage	V_{CBO}	BD 606 BD 608 BD 610	55 70 80	Vdc
Emitter-Base Voltage	V_{EBO}		5	Vdc
Collector Current	I_C		10.0	Adc
Base Current	I_B		6.0	Adc
Total Device Dissipation T_C=25°C Derate above 25°C	P_D		90 720	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}		–55 to +150	°C

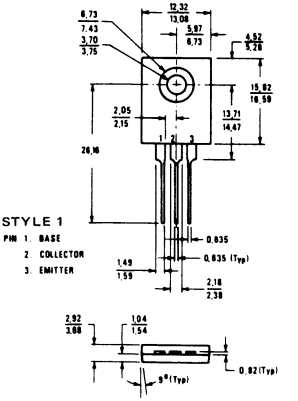
THERMAL CHARACTERISTICS

Characteristic	Symbol		Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}		1.39	° C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Type	Min	Max	Unit
Collector-Emitter Sustaining Voltage* (I_C = 0.2 Adc, I_B = 0)	BV_{CEO}*	BD 606 BD 608 BD 610	45 60 80	– – –	Vdc
Collector Cutoff Current (V_{CB} = 55 Vdc, I_E = 0) (V_{CB} = 70 Vdc, I_E = 0) (V_{CB} = 80 Vdc, I_E = 0)	I_{CBO}	BD 606 BD 608 BD 610	– – –	1.0 1.0 1.0	mAdc
Emitter Cutoff Current (V_{BE} = 5.0 Vdc, I_C = 0)	I_{EBO}		—	2.0	mAdc
DC current Gain (I_C = 2A, V_{CE} = 2 V) (I_C = 4A, V_{CE} = 2 V)	h_{FE}*		30 15	— —	
Collector-Emitter Saturation Voltage* (I_C = 4 Adc, I_B = 0.4 Adc)	$V_{CE(sat)}$*		—	1.1	Vdc
Base-Emitter On Voltage* (I_C = 4 Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$*		—	1.6	Vdc
Current-Gain-Bandwidth Product (I_C = 1.0 Adc, V_{CE} = 10 Vdc, f = 1.0 MHz)	f_T		1.5	—	MHz

* Pulse Test: Pulse Width ≤ 300 μs. Duty Cycle ≤ 2.0%.



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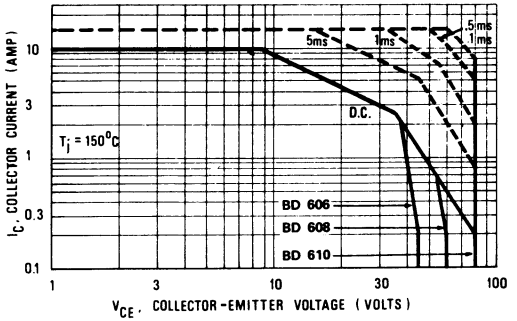
Case 199-04

Dimensions in millimeters

FIGURE 1 — ACTIVE REGION DC SAFE OPERATING AREA



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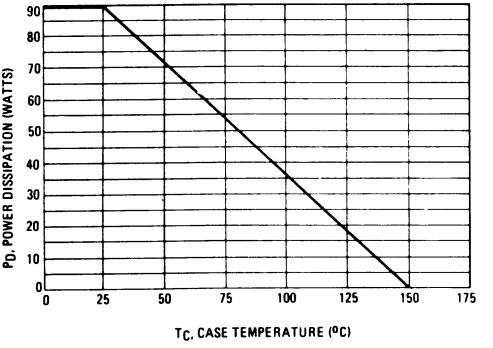
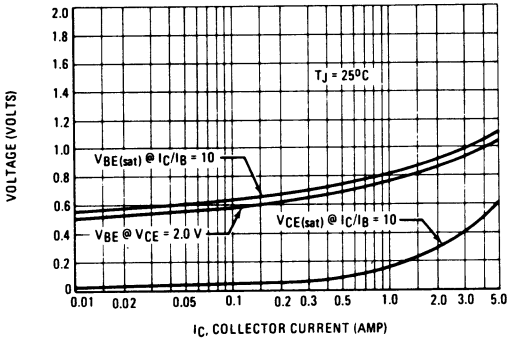


FIGURE 3 — "ON" VOLTAGES



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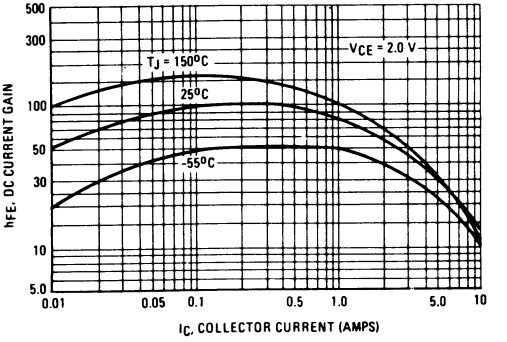

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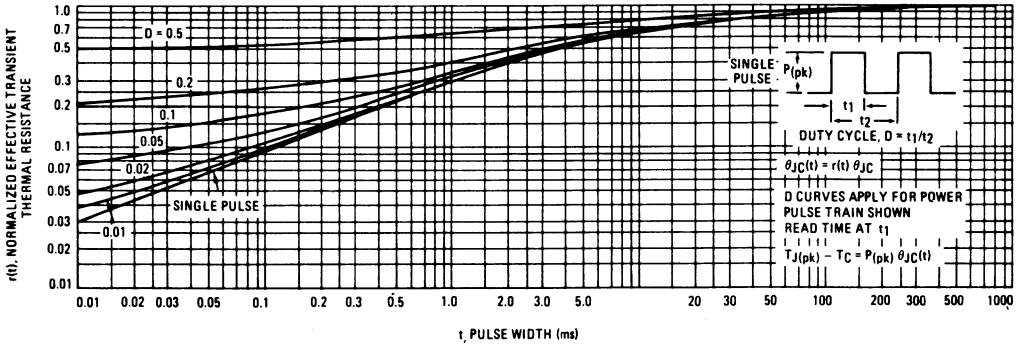

Note 1:

There are two limitations on the power handling ability of a transistor; average junction temperature and second breakdown. Safe operating area curves indicate I_C - V_{CE} limits of the transistor that must be observed for reliable operation; i.e., the transistor must not be subjected to greater dissipation than the curves indicate.

The data of Figure 1 is based on $T_{J(pk)}$ = 150°C; T_C is variable depending on conditions. Second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(pk)}$ ≤150°C. At high case temperatures, thermal limitations will reduce the power that can be handled to values less than the limitations imposed by second breakdown. (See AN-415)