MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

BD795 BD799
BD797 BD801

PLASTIC HIGH POWER SILICON NPN TRANSISTOR

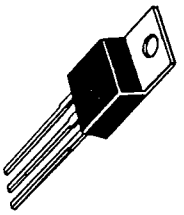
. . . designed for use up to 30 Watt audio amplifiers utilizing complementary or quasi complementary circuits.

- DC Current Gain—h_{FE} = 40 (Min) @ I_C = 1.0 Adc
- BD 795, 797, 799, 801 are complementary with BD 796, 798, 800, 802

8 AMPERE POWER TRANSISTOR

NPN SILICON

45, 60, 80, 100 VOLTS
65 WATTS



MAXIMUM RATINGS

Rating	Symbol	Type	Value	Unit
Collector-Emitter Voltage	V_{CEO}	BD795 BD797 BD799 BD801	45 60 80 100	Vdc
Collector-Base Voltage	V_{CBO}	BD795 BD797 BD799 BD801	45 60 80 100	Vdc
Emitter-Base Voltage	V_{EBO}		5	Vdc
Collector Current	I_C		8	Adc
Base Current	I_B		3	Adc
Total Device Dissipation T_C=25°C Derate avove 25°C	P_D		65 522	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}		—55 to +150	°C

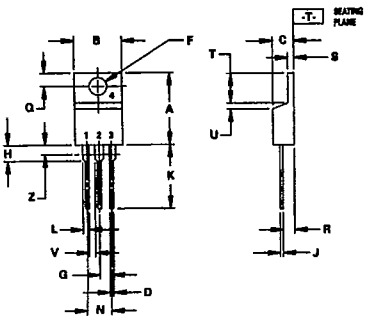
THERMAL CHARACTERISTICS

Characteristic	Symbol		Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}		1.92	° 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}*	BD795 BD797 BD799 BD801	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}	BD795 BD797 BD799 BD801	— — — —	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 795/797 BD 799/801 BD 795/797 BD 799/801	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%.



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIM Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

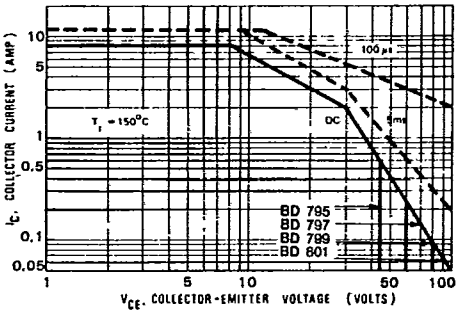
DIM	MILLIMETERS MIN	MILLIMETERS MAX	INCHES MIN	INCHES MAX
A	14.48	15.75	0.570	0.620
B	9.66	10.28	0.380	0.405
C	4.07	4.82	0.160	0.190
D	0.64	0.88	0.025	0.035
F	3.61	3.73	0.142	0.147
G	2.42	2.66	0.095	0.105
H	2.80	3.93	0.110	0.155
J	0.46	0.71	0.018	0.028
K	12.70	14.27	0.500	0.562
L	1.15	1.39	0.045	0.055
N	4.83	5.33	0.190	0.210
Q	2.54	3.04	0.100	0.120
R	2.04	2.79	0.080	0.110
S	1.15	1.39	0.045	0.055
T	5.97	6.47	0.235	0.255
U	0.00	1.27	0.000	0.050
V	1.15	—	0.045	—
Z	—	2.04	—	0.080

STYLE 1:
PIN 1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR

CASE 221A-04
TO-220AB

3

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

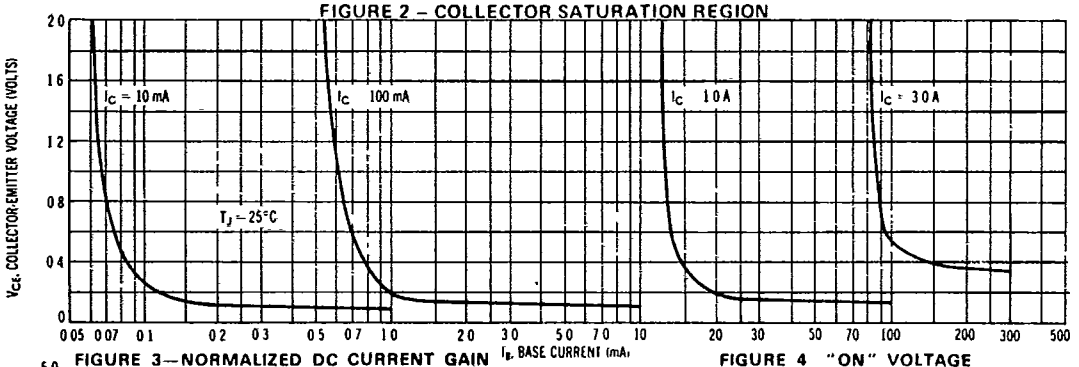


FIGURE 3—NORMALIZED DC CURRENT GAIN

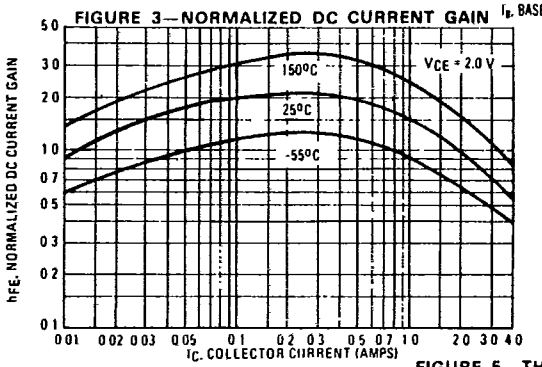


FIGURE 4 "ON" VOLTAGE

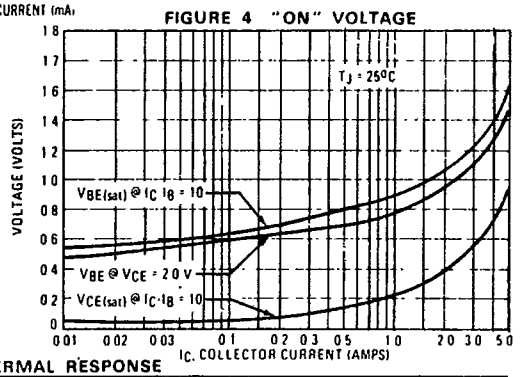
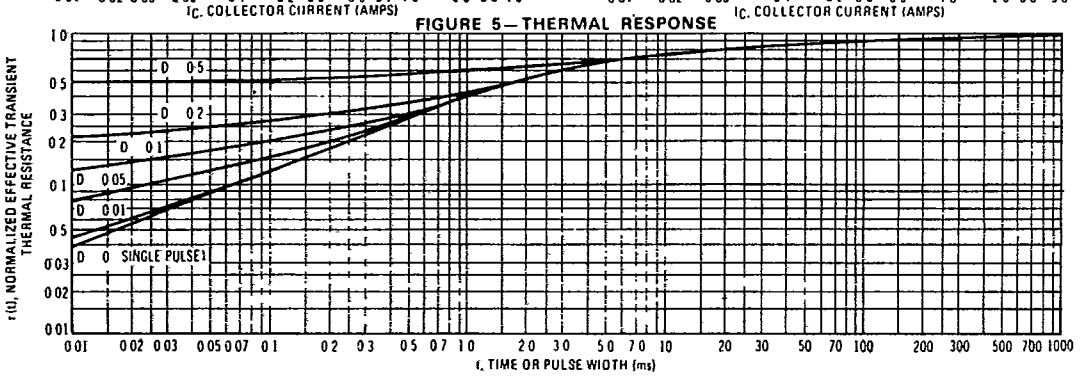


FIGURE 5—THERMAL RESPONSE



3