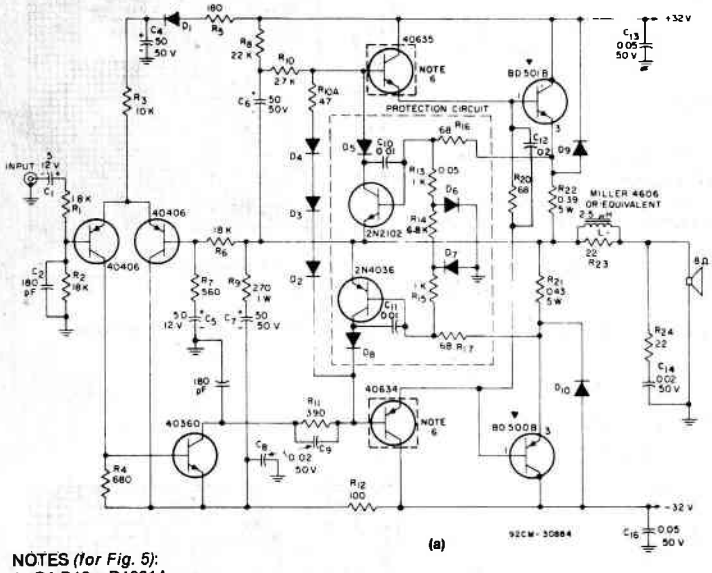
BD500, BD501 Series

ELECTRICAL CHARACTERISTICS, *At Case Temperature (T_C) = 25°C*

CHARACTERISTICS	TEST CONDITIONS	LIMITS▲ BD500* BD501 Min.	BD500* BD501 Max.	BD500A* BD501A Min.	BD500A* BD501A Max.	BD500B* BD501B Min.	BD500B* BD501B Max.	UNITS
I_{CER} R_{BE} = 100 Ω	V_{CE} = 45 V	—	1	—	—	—	—	mA
	V_{CE} = 55V	—	—	—	1	—	—	
	V_{CE} = 75 V	—	—	—	—	—	1	
I_{EBO}	V_{EB} = 5 V	—	1	—	1	—	1	mA
V_{CEO}	I_C = 0.1 A	50	—	60	—	80	—	V
V_{CER}	I_C = 0.1 A; R_{BE} = 100 Ω	55	—	65	—	85	—	V
f_T	I_C = 0.5 A; V_{CE} = 4 V	5	—	5	—	5	—	MHz
h_{FE}	I_C = 5 A; V_{CE} = 4 V	15	90	15	90	—	—	—
	I_C = 3.5 A; V_{CE} = 4 V	—	—	—	—	20	120	
$V_{CE(sat)}$	I_C = 5 A; I_B = 0.5 A	—	1.2	—	1.2	—	—	V
	I_C = 3.5 A; I_B = 0.35A	—	—	—	—	—	1	
V_{BE}	I_C = 5 A; V_{CE} = 4 V	—	1.8	—	1.8	—	—	V
	I_C = 3.5 A; V_{CE} = 4 V	—	—	—	—	—	1.5	
$I_{S/b}$	V_{CE} = 20 V; t = 0.55 s	3.75	—	—	—	—	—	A
	V_{CE} = 25 V; t = 0.55 s	—	—	3	—	—	—	
	V_{CE} = 30 V; t = 0.55 s	—	—	—	—	2.5	—	

▲For characteristics curves and test conditions, refer to published data for prototypes (File 678): 2N6487 (BD501, BD501A); 2N6488 (BD501B); 2N6490 (BD500, BD500A); 2N6491 (BD500B).

*For p-n-p devices, voltage and current values are negative.



NOTES *(for Fig. 5)*:
1. D1-D10—D1201A.
2. Resistors are ½-watt, ±10%, unless otherwise specified; values are in ohms.
3. Non-inductive resistors.
4. Capacitances are in μF unless otherwise specified.
5. 55°C thermal cutout attached to heat sink of output devices.
6. TO-39 case devices with heat radiator attached.
7. Provide heat sink of approx. 1.2°C/W per output device with a contact thermal resistance of 1.3°C/W max. and T_A = 40°C max.

Fig. 5 - 40-watt amplifier circuit featuring full-complementary-symmetry output using load line limiting: (a) basic amplifier circuit, (b) power-supply circuit.

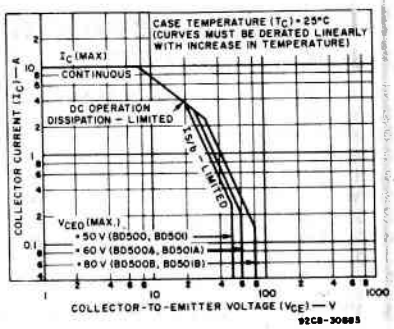


Fig. 4 - Maximum operating areas for all types.

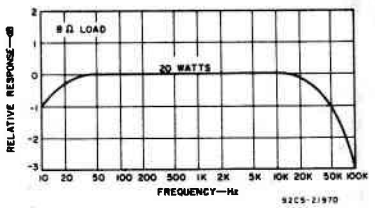


Fig. 6 - Typical frequency response.

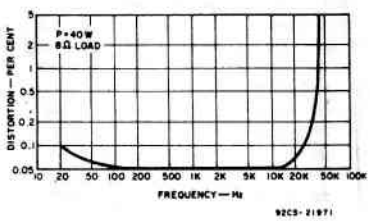


Fig. 7 - Typical total harmonic distortion as a function of frequency.