
2SD1138

Silicon NPN Triple Diffused

HITACHI

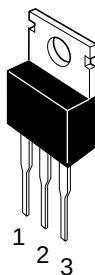
ADE-208-908 (Z)
1st. Edition
Sep. 2000

Application

Low frequency high voltage power amplifier TV vertical deflection output complementary pair with 2SB861

Outline

TO-220AB



- 1. Base
- 2. Collector
(Flange)
- 3. Emitter

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	200	V
Collector to emitter voltage	V_{CEO}	150	V
Emitter to base voltage	V_{EBO}	6	V
Collector current	I_C	2	A
Collector peak current	$I_{C\ (peak)}$	5	A
Collector power dissipation	P_C	1.8	W
	P_C^{*1}	30	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−45 to +150	°C

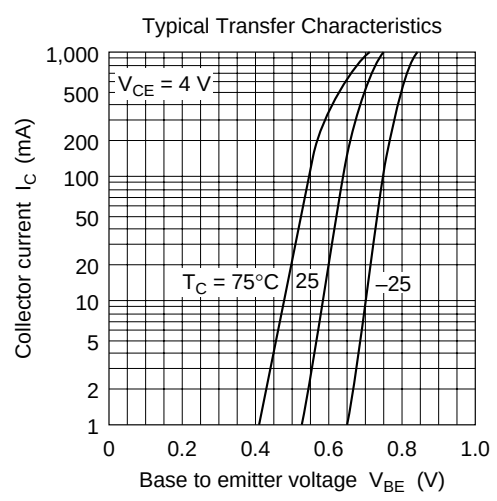
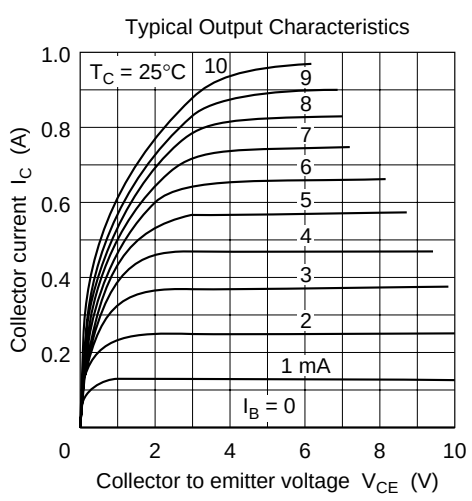
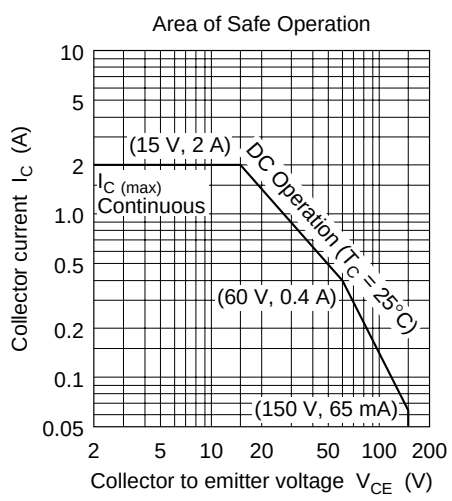
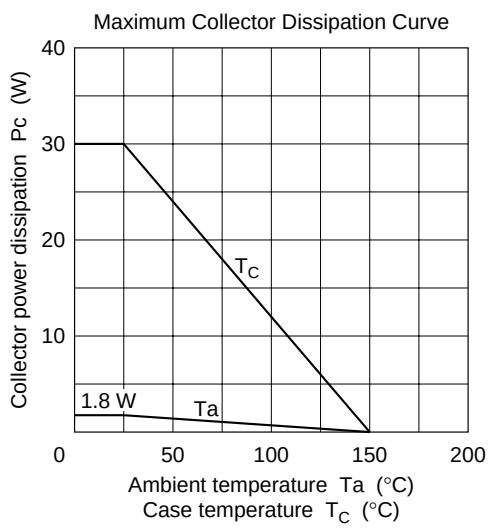
Note: 1. Value at $T_C = 25^{\circ}C$.

Electrical Characteristics (Ta = 25°C)

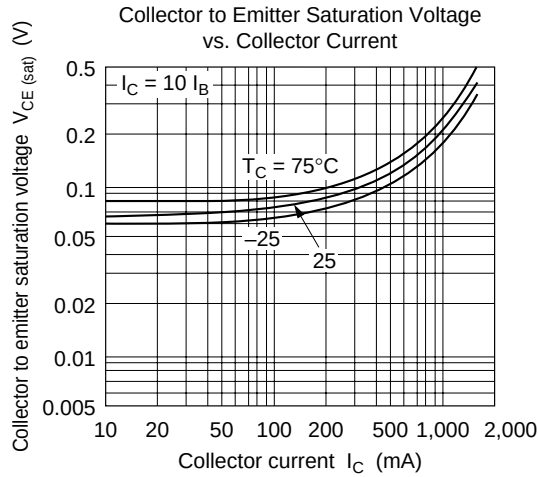
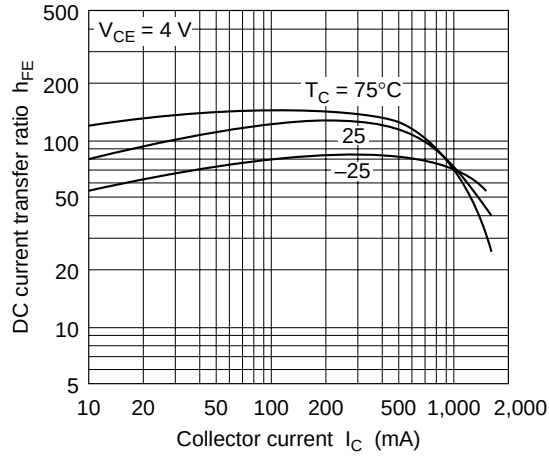
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	150	—	—	V	$I_C = 50\ mA, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	6	—	—	V	$I_E = 5\ mA, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	1	μA	$V_{CB} = 120\ V, I_E = 0$
DC current transfer ratio	h_{FE1}^{*1}	60	—	320		$V_{CE} = 4\ V, I_C = 50\ mA$
	h_{FE2}	60	—	—		$V_{CE} = 10\ V, I_C = 500\ mA^{*2}$
Collector to emitter saturation voltage	$V_{CE\ (sat)}$	—	—	3.0	V	$I_C = 500\ mA, I_B = 50\ mA^{*2}$
Base to emitter voltage	V_{BE}	—	—	1.0	V	$V_{CB} = 4\ V, I_C = 50\ mA$
Collector output capacitance	C_{ob}	—	20	—	pF	$V_{CB} = 100\ V, I_E = 0, f = 1\ MHz$

Note: 1. The 2SD1138 is grouped by h_{FE1} as follows.
2. Pulse test.

B	C	D
60 to 120	100 to 200	160 to 320

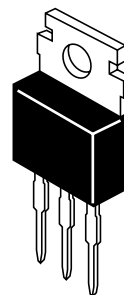
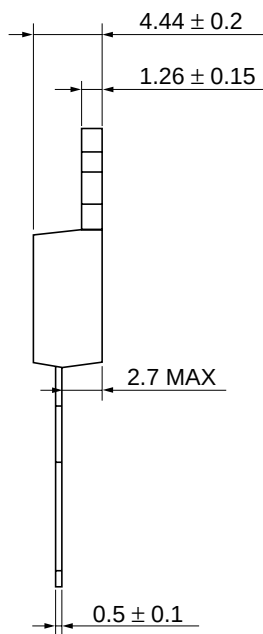


DC Current Transfer Ratio
vs. Collector Current



Technical drawing of a probe head assembly. The drawing shows a side view of the probe head with three vertical pins. Key dimensions are labeled:

- Overall width: 11.5 MAX
- Width of the upper section: 10.16 ± 0.2
- Width of the middle section: 9.5
- Width of the lower section: 8.0
- Pin diameter: $\phi 3.6^{+0.1}_{-0.08}$
- Pin length: 1.27
- Pin diameter: $\phi 3.6^{+0.1}_{-0.08}$
- Pin length: 6.4 $^{+0.2}_{-0.1}$
- Pin length: 15.0 ± 0.3
- Pin length: 14.0 ± 0.5
- Pin length: 7.8 ± 0.5
- Pin length: 1.5 MAX
- Pin length: 0.76 ± 0.1
- Pin length: 2.54 ± 0.5
- Pin length: 2.54 ± 0.5



Hitachi Code	TO-220AB
JEDEC	Conforms
EIAJ	Conforms
Mass (reference value)	1.8 g

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