
2SD1138

Silicon NPN Triple Diffused

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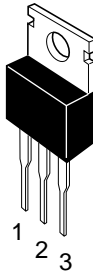
ADE-208-908 (Z)
1st. Edition
Sep. 2000

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 ($T_a = 25^\circ\text{C}$)

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	$I_{\text{C (peak)}}$	5	A
Collector power dissipation	P_{C}	1.8	W
	P_{C}^{*1}	30	W
Junction temperature	T_{j}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-45 to +150	$^\circ\text{C}$

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

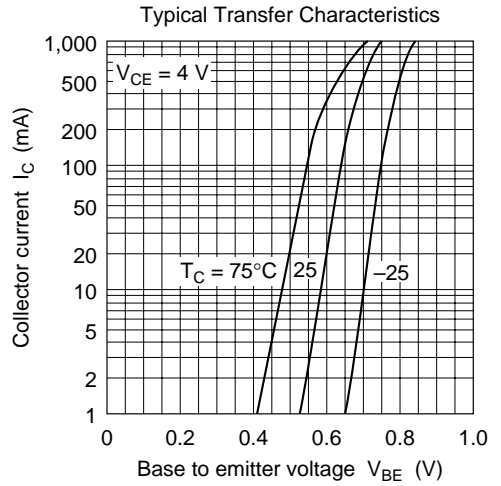
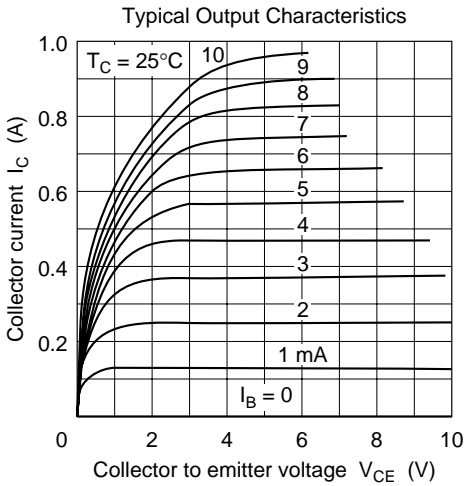
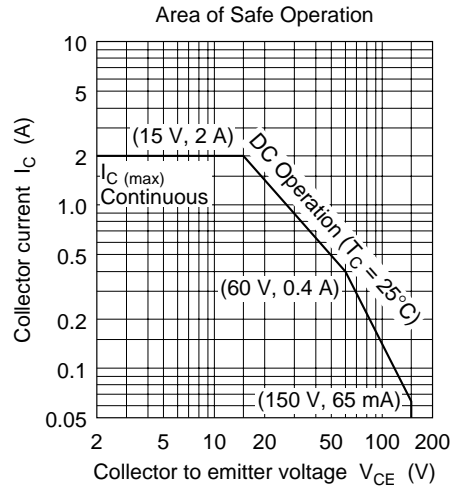
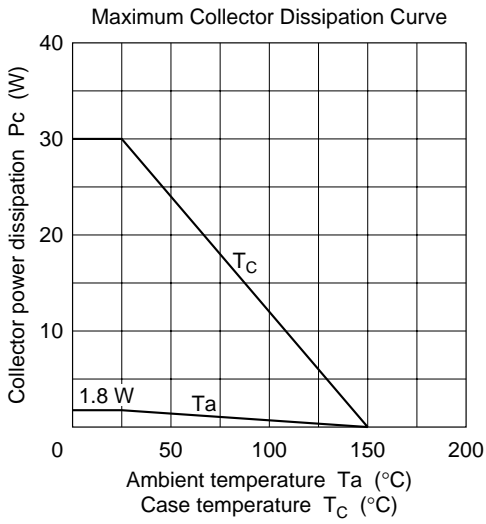
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

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

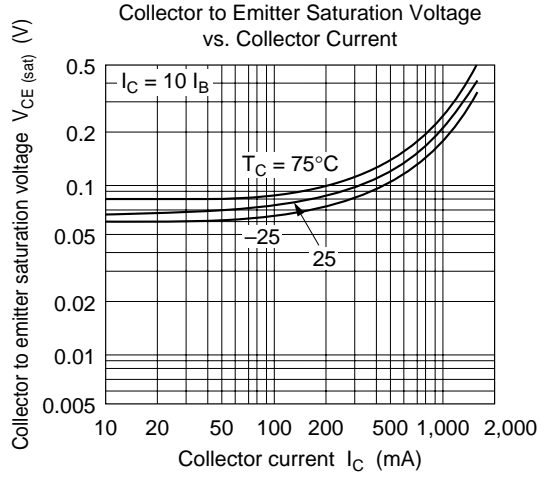
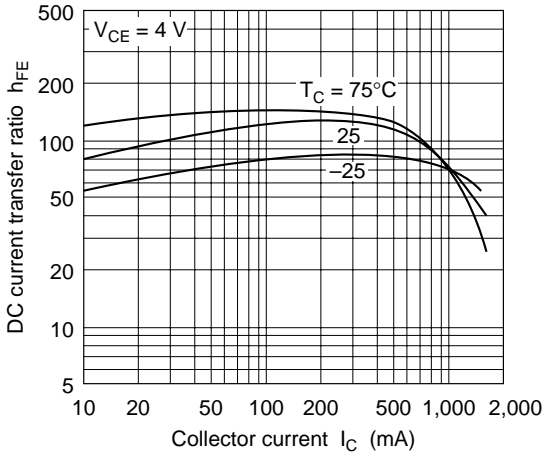
Note: 1. The 2SD1138 is grouped by h_{FE1} as follows.

2. Pulse test.

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

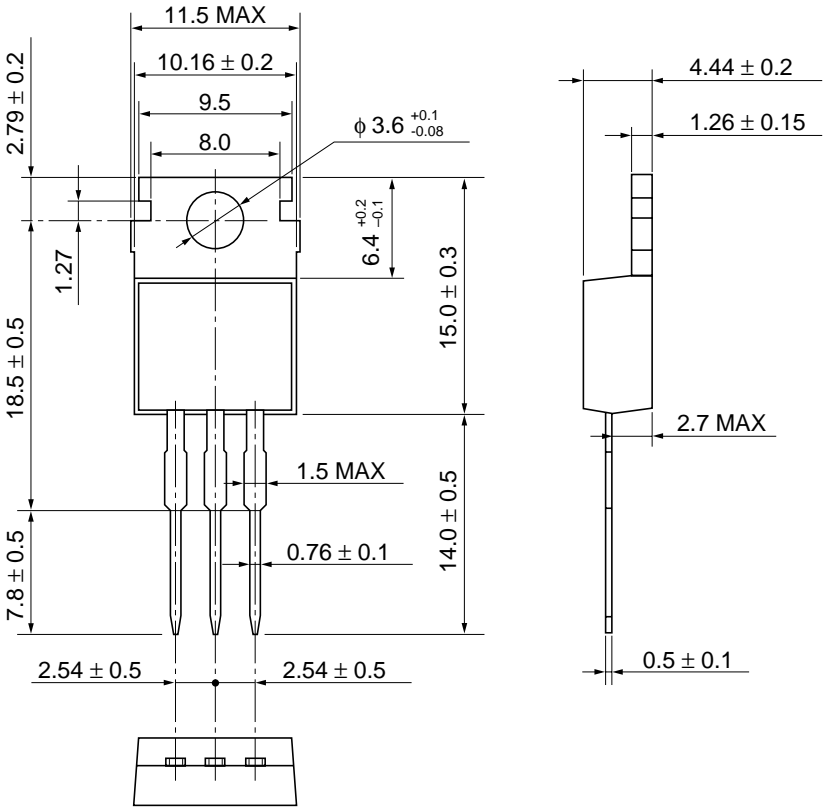


DC Current Transfer Ratio vs. Collector Current



Package Dimensions

Unit: mm



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

Cautions

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Hitachi, Ltd.

Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL NorthAmerica : <http://semiconductor.hitachi.com/>
 Europe : <http://www.hitachi-eu.com/hel/ecg>
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For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive,
San Jose, CA 95134
Tel: <1> (408) 433-1990
Fax: <1> (408) 433-0223

Hitachi Europe GmbH
Electronic Components Group
Dornacher Straße 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 585160

Hitachi Asia Ltd.
Hitachi Tower
16 Collyer Quay #20-00,
Singapore 049318
Tel: <65>-538-6533/538-8577
Fax : <65>-538-6933/538-3877
URL : <http://www.hitachi.com.sg>

Hitachi Asia Ltd.
(Taipei Branch Office)
4/F, No. 167, Tun Hwa North Road,
Hung-Kuo Building,
Taipei (105), Taiwan
Tel: <886>-(2)-2718-3666
Fax : <886>-(2)-2718-8180
Telex : 23222 HAS-TP
URL : <http://www.hitachi.com.tw>

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower,
World Finance Centre,
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon,
Hong Kong
Tel : <852>-(2)-735-9218
Fax : <852>-(2)-730-0281
URL : <http://www.hitachi.com.hk>

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