
2SD1138

Silicon NPN Triple Diffused

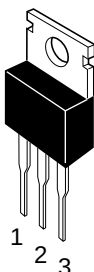
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Application

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	$I_{C\text{ (peak)}}$	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

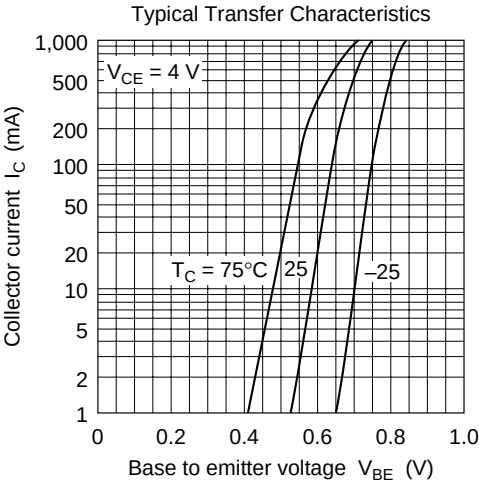
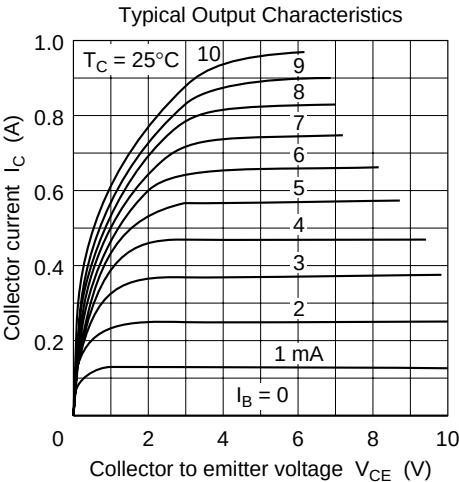
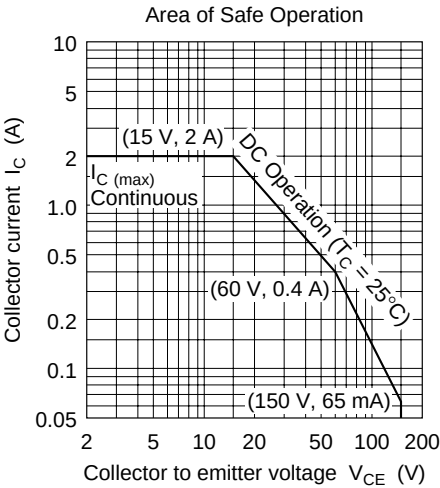
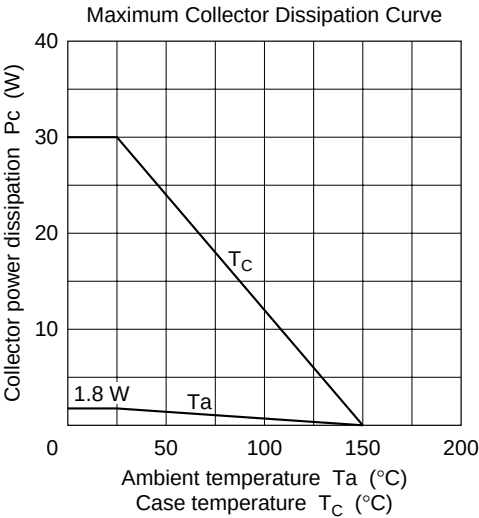
Note: 1. Value at $T_C = 25^\circ\text{C}$.

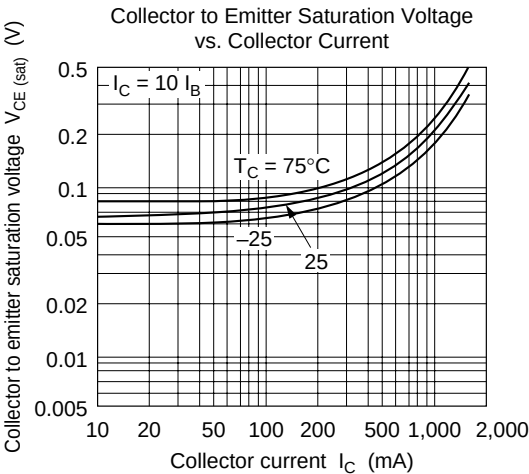
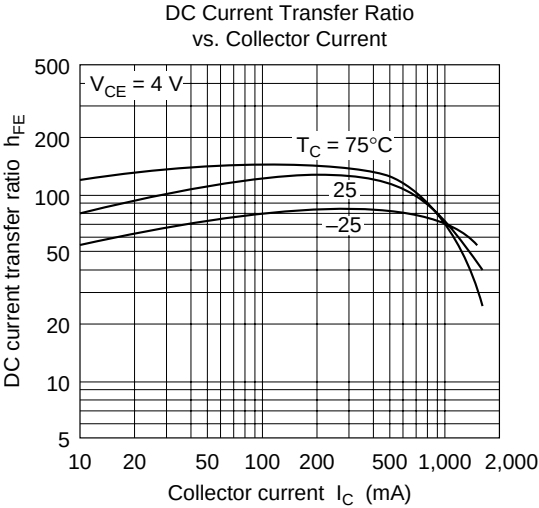
Electrical Characteristics (Ta = 25°C)

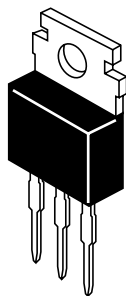
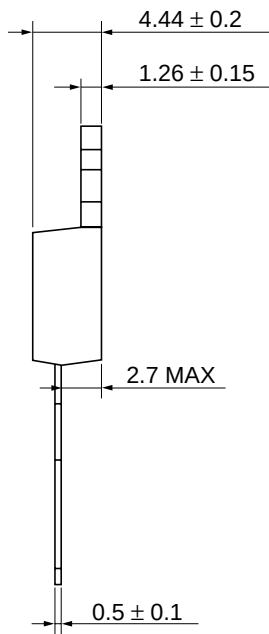
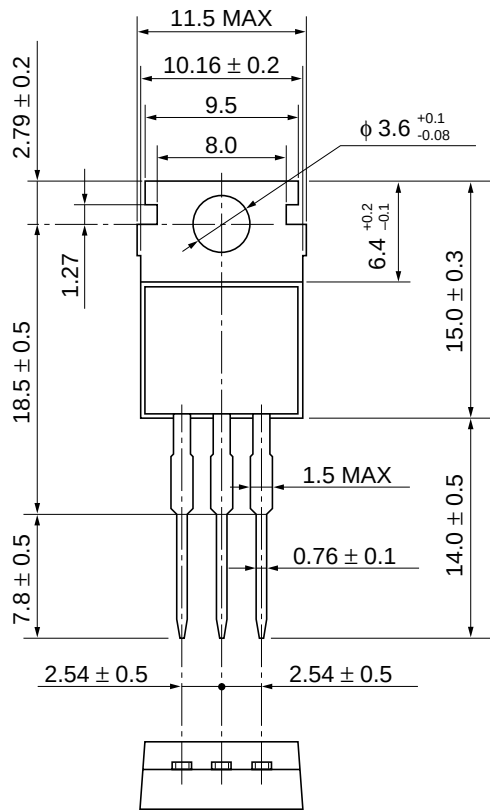
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	150	—	—	V	$I_C = 50\text{ mA}$, $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	6	—	—	V	$I_E = 5\text{ mA}$, $I_C = 0$
Collector cutoff current	I_{CBO}	—	—	1	μA	$V_{CB} = 120\text{ V}$,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

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







Hitachi Code	TO-220AB
JEDEC	Conforms
EIAJ	Conforms
Weight (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

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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) 778322
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Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 049318
Tel: 535-2100
Fax: 535-1533

Hitachi Asia Ltd.
Taipei Branch Office
3F, Hung Kuo Building, No.167,
Tun-Hwa North Road, Taipei (105)
Tel: <886> (2) 2718-3666
Fax: <886> (2) 2718-8180

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
Telex: 40815 HITEC HX

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