

2SD476(K), 2SD476A(K)

Silicon NPN Triple Diffused

HITACHI

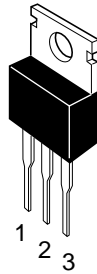
ADE-208-898 (Z)
1st. Edition
Sep. 2000

Application

Power switching complementary pair with 2SB566(K) and 2SB566A(K)

Outline

TO-220AB



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

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings		Unit
		2SD476(K)	2SD476A(K)	
Collector to base voltage	V_{CBO}	70	70	V
Collector to emitter voltage	V_{CEO}	50	60	V
Emitter to base voltage	V_{EBO}	5	5	V
Collector current	I_C	4	4	A
Collector peak current	$I_{C(peak)}$	8	8	A
Collector power dissipation	P_C^{*1}	40	40	W
Junction temperature	T_j	150	150	°C
Storage temperature	T_{stg}	-55 to +150	-55 to +150	°C

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

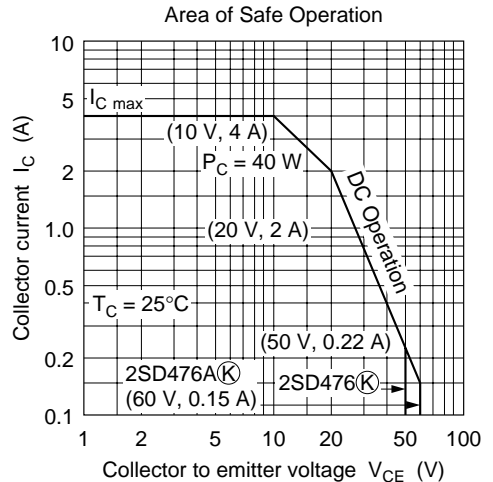
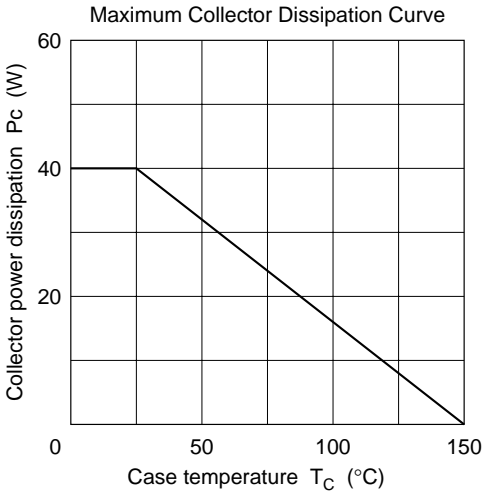
2SD476(K), 2SD476A(K)

Electrical Characteristics (Ta = 25°C)

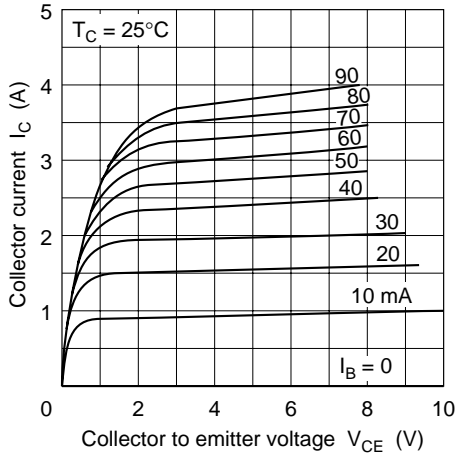
Item	Symbol	2SD476(K)			2SD476A(K)			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max		
Collector to base breakdown voltage	$V_{(BR)CBO}$	70	—	—	70	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	50	—	—	60	—	—	V	$I_C = 50 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	5	—	—	V	$I_E = 10 \mu A, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	1	—	—	1	μA	$V_{CB} = 50 \text{ V}, I_E = 0$
DC current transfer ratio	h_{FE1}	60	—	200	60	—	200		$V_{CE} = 4 \text{ V}, I_C = 1 \text{ A}$ (Pulse test)
	h_{FE2}	35	—	—	35	—	—		$V_{CE} = 4 \text{ V}, I_C = 0.1 \text{ A}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	—	—	1.0	V	$I_C = 2 \text{ A}, I_B = 0.2 \text{ A}$
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	1.2	—	—	1.2	V	
Gain bandwidth product	f_T	—	7	—	—	7	—	MHz	$V_{CE} = 4 \text{ V}, I_C = 0.5 \text{ A}$
Turn on time	t_{on}	—	0.3	—	—	0.3	—	μs	$V_{CC} = 10.5 \text{ V}$
Turn off time	t_{off}	—	3.0	—	—	3.0	—	μs	$I_C = 10 \text{ mA}, I_{B1} = -10 \text{ mA}, I_{B2} = 0$
Storage time	t_{stg}	—	2.5	—	—	2.5	—	μs	0.5 A

Note: 1. The 2SD476(K) and 2SD476A(K) are grouped by h_{FE1} as follows.

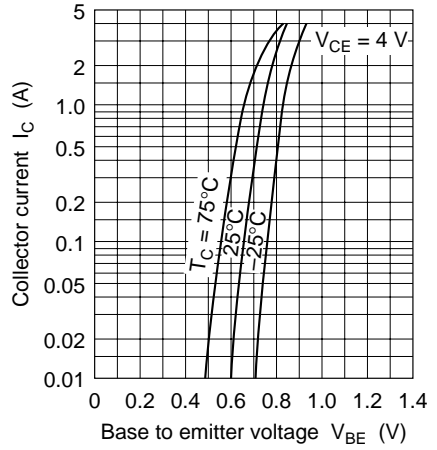
B	C
60 to 120	100 to 200



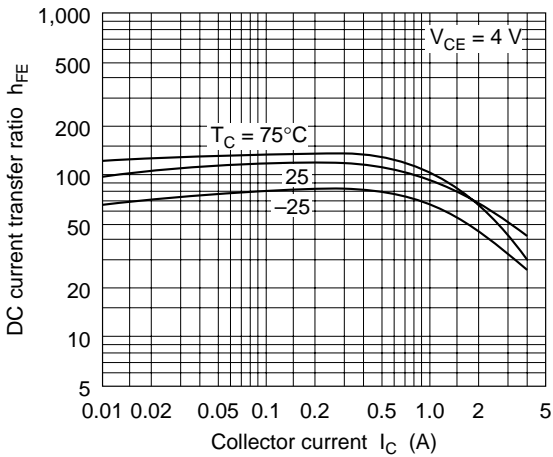
Typical Output Characteristics



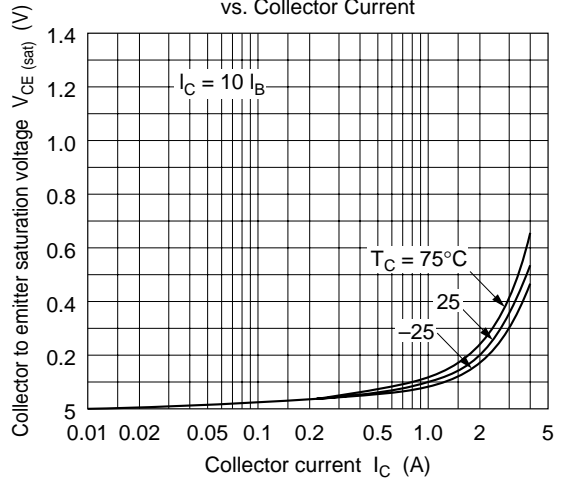
Typical Transfer Characteristics



DC Current Transfer Ratio vs. Collector Current



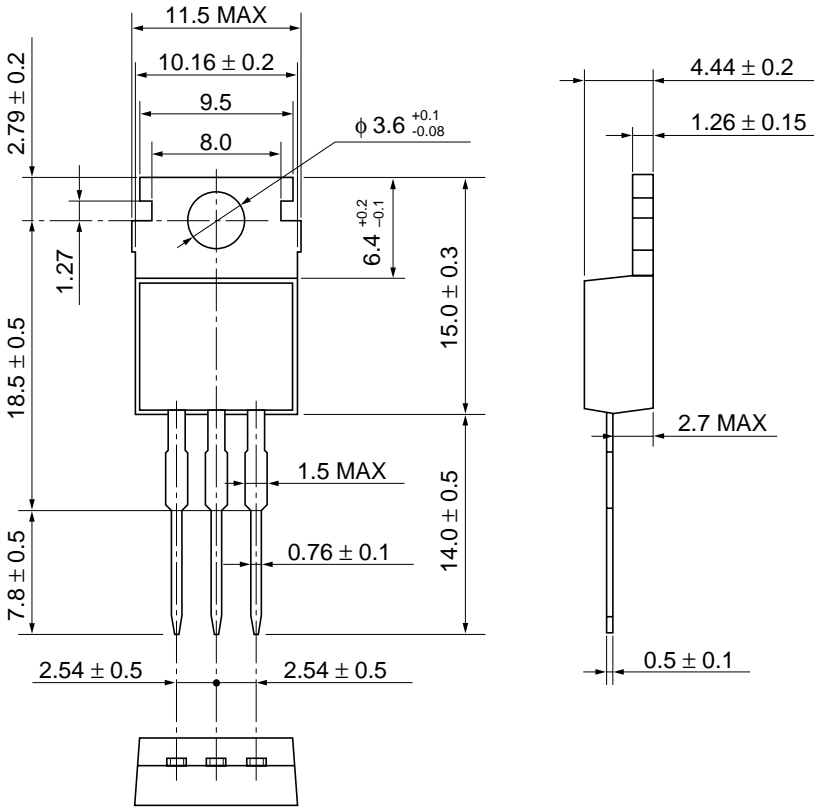
Collector to Emitter Saturation Voltage vs. Collector Current



2SD476(K), 2SD476A(K)

Package Dimensions

Unit: mm



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

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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	North America	: 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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