

**FOR GENERAL PURPOSE HIGH CURRENT DRIVE APPLICATION  
SILICON PNP EPITAXIAL TYPE**

**DESCRIPTION**

2SA1399 is a silicon PNP epitaxial type transistor designed with high collector current, high voltage.

Complementary with 2SC3581.

**FEATURE**

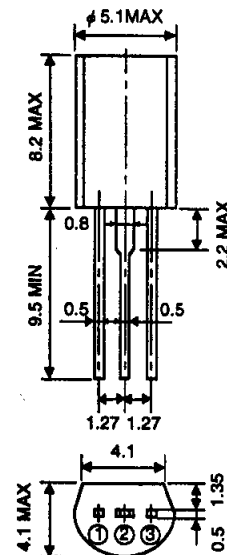
- High collector current  $I_{CM}=600\text{mA}$
- High gain band width product  $f_T=150\text{MHz typ}$
- High  $V_{CE0}$   $V_{CE0}=50\text{V}$
- Excellent linearity of DC forward current gain

**APPLICATION**

For switching, small type motor drive application.

**OUTLINE DRAWING**

Unit:mm



**TERMINAL CONNECTOR**

- ① : EMITTER
  - ② : COLLECTOR
  - ③ : BASE
- EIAJ : —  
JEDEC : —

Note)  
The dimension without tolerance represent central value.

**MAXIMUM RATINGS (Ta=25°C)**

Symbol	Parameter	Ratings	Unit
V <sub>CB0</sub>	Collector to Base voltage	-55	V
V <sub>EB0</sub>	Emitter to Base voltage	-4	V
V <sub>CE0</sub>	Collector to Emitter voltage	-50	V
I <sub>CM</sub>	Peak Collector current	-600	mA
I <sub>C</sub>	Collector current	-400	mA
P <sub>C</sub>	Collector dissipation (Ta=25°C)	900	mW
T <sub>J</sub>	Junction temperature	+150	°C
T <sub>stg</sub>	Storage temperature	-55 to +150	°C

**ELECTRICAL CHARACTERISTICS (Ta=25°C)**

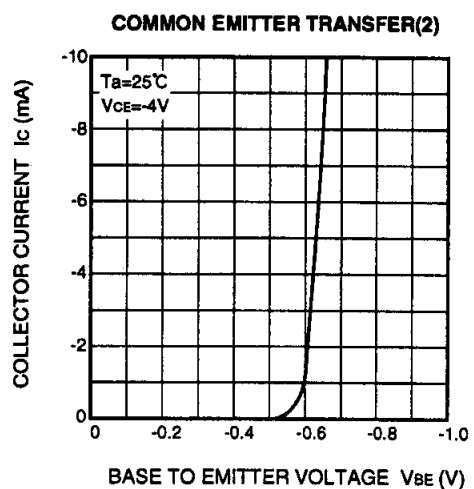
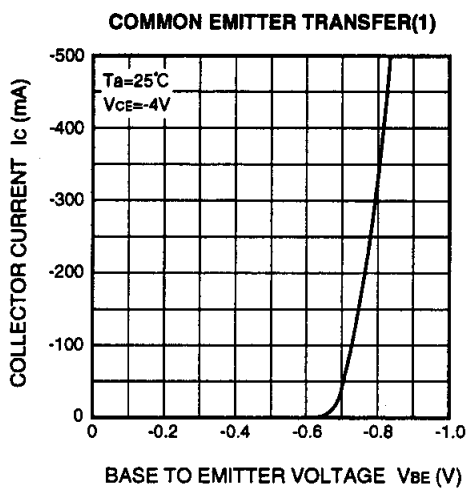
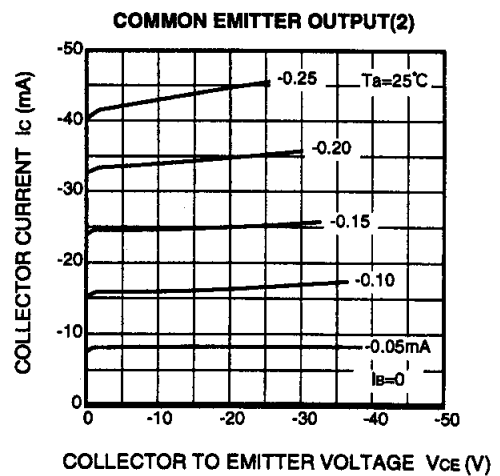
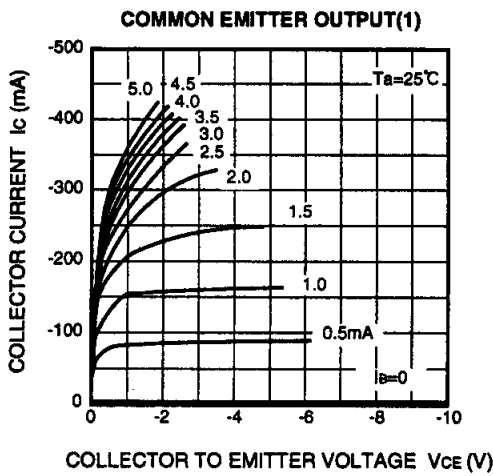
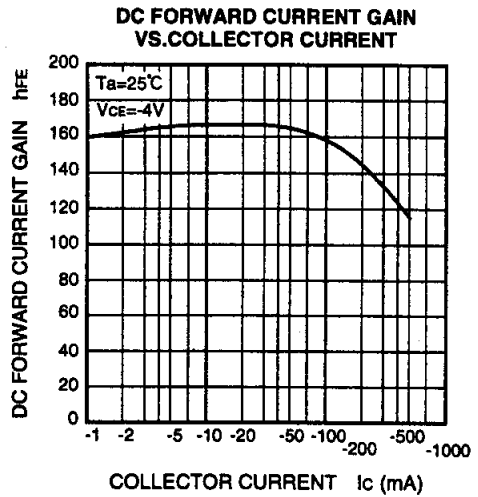
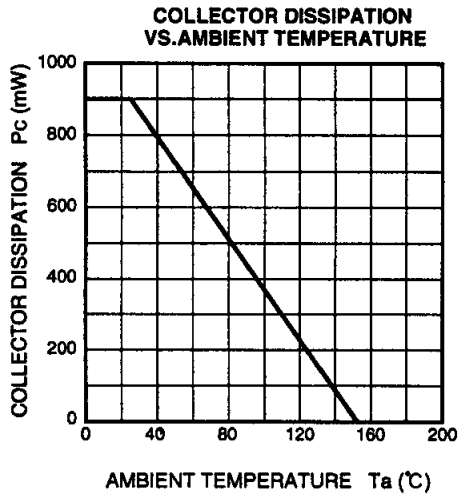
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V <sub>(BR)CBO</sub>	C to B break down voltage	I <sub>C</sub> =-10 μA, I <sub>E</sub> =0	-55			V
V <sub>(BR)EBO</sub>	E to B break down voltage	I <sub>E</sub> =-10 μA, I <sub>C</sub> =0	-4			V
V <sub>(BR)CEO</sub>	C to E break down voltage	I <sub>C</sub> =-100 μA, R <sub>BE</sub> =∞	-50			V
I <sub>CB0</sub>	Collector cut off current	V <sub>CB</sub> =-25V, I <sub>E</sub> =0			-1	μA
I <sub>EB0</sub>	Emitter cut off current	V <sub>EB</sub> =-2V, I <sub>C</sub> =0			-1	μA
h <sub>FE</sub> *	DC forward current gain	V <sub>CE</sub> =-4V, I <sub>C</sub> =-100mA	90		500	—
V <sub>CE(sat)</sub>	C to E saturation voltage	I <sub>C</sub> =-200mA, I <sub>B</sub> =-10mA		-0.17	-0.5	V
f <sub>T</sub>	Gain band width product	V <sub>CE</sub> =-6V, I <sub>E</sub> =10mA		150		MHz

\* : It shows h<sub>FE</sub> classification in right table.

Item	D	E	F
h <sub>FE</sub>	90 to 180	150 to 300	250 to 500

FOR GENERAL PURPOSE HIGH CURRENT DRIVE APPLICATION  
SILICON PNP EPITAXIAL TYPE

TYPICAL CHARACTERISTICS



---

The logo for IDC ISAHAYA ELECTRONICS CORPORATION features the letters 'IDC' in a stylized blue font with a red triangle above the 'I', followed by the company name 'ISAHAYA ELECTRONICS CORPORATION' in a black serif font.

<http://www.idc-com.co.jp>  
6-41, TSUKUBA, ISAHAYA, NAGASAKI, 854-0065, JAPAN

Keep safety in your circuit designs !

Isahaya Electronics Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of non-flammable material or (iii) prevention against any malfunction or mishap.

Notes regarding these materials

·These materials are intended as reference to assist out customers in the selection of the Isahaya semiconductor product best suited to the customer's application, they do not convey any license under any intellectual property rights, or any other rights, belonging to Isahaya Electronics Corporation or a third party.  
·Isahaya Electronics Corporation assumes no responsibility for any damage, or infringement of any third-party rights, originating in the use of any product data, diagrams, charts or circuit application examples contained in the materials.  
·All information contained in these materials, including product data, diagrams and charts, represent information on products at the time of publication of these materials, and are subject to change by Isahaya Electronics Corporation without notice due to product improvements or other reasons. It is therefore recommended that customers contact Isahaya Electronics Corporation or authorized Isahaya Semiconductor product distributor for the latest product information before purchasing a product listed herein.  
·The prior written approval of Isahaya Electronics Corporation is necessary to reprint or reproduce in whole or in part these materials.  
·If these products or technologies are subject to the Japanese export control restrictions, they must be exported under a license from the Japanese government and cannot be imported into a country other than the approved destination. Any diversion or reexport contrary to the export control laws and regulations of Japan and/or the country of destination is prohibited.  
·Please contact Isahaya Electronics Corporation or an authorized Isahaya Semiconductor product distributor for further details on these materials or the products contained therein.

---