

DESCRIPTION

2SA1235 is a super mini silicon NPN epitaxial type transistor designed with high collector current, small $V_{ce(sat)}$. Complementary with 2SC3440.

FEATURE

- Low collector to emitter saturation voltage.
 $V_{CE(sat)} = -0.2V$ typ
- Excellent linearity of DC forward current gain.
- Super mini package for easy mounting.
- High collector current $I_{CM} = -1A$
- High gain band width product $fT = 180MHz$ typ

APPLICATION

Small type motor drive, relay drive, power supply.

MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
V_{CBO}	Collector to Base voltage	-25	V
V_{EBO}	Emitter to Base voltage	-4	V
V_{CEO}	Collector to Emitter voltage	-20	V
I_{CM}	Peak Collector current	-1	A
I_C	Collector current	-700	mA
P_C	Collector dissipation (Ta=25°C)	200	mW
		※350	
T_j	Junction temperature	+125	°C
T_{stg}	Storage temperature	-55 ~ +125	°C

※package mounted on substrate.

ELECTRICAL CHARACTERISTICS (Ta=25°C)

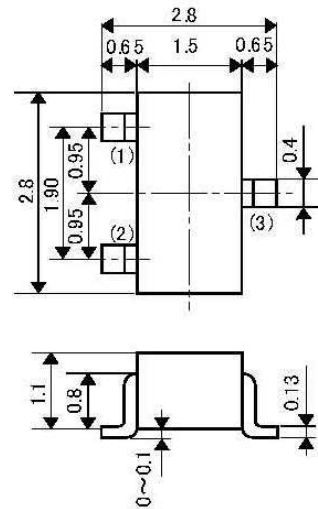
Parameter	Symbol	Test conditions	Limits			Unit
			Min	Typ	Max	
C to B break down voltage	$V(BR)_{CBO}$	$I_C = -10 \mu A, I_E = 0$	-25	-	-	V
E to B break down voltage	$V(BR)_{EBO}$	$I_E = -10 \mu A, I_C = 0$	-4	-	-	V
C to E break down voltage	$V(BR)_{CEO}$	$I_C = -100 \mu A, R_{BE} = \infty$	-20	-	-	V
Collector cut off current	I_{CBO}	$V_{CB} = -25V, I_E = 0$	-	-	-1	μA
Emitter cut off current	I_{EBO}	$V_{EB} = -2V, I_C = 0$	-	-	-1	μA
DC forward current gain	hFE	$V_{CE} = -4V, I_C = -100mA$	150	-	800	
C to E Saturation Vlotage	$V_{CE(sat)}$	$I_C = -500mA, I_B = -25mA$	-	-0.2	-0.5	V
Gain band width product	fT	$V_{CE} = -6V, I_E = 10mA$	100	180	-	MHz

※) It shows hFE classification in below table

Marking	AE	AF	AG
hFE	150 to 300	250 to 500	400 to 800

OUTLINE DRAWING

Unit: mm



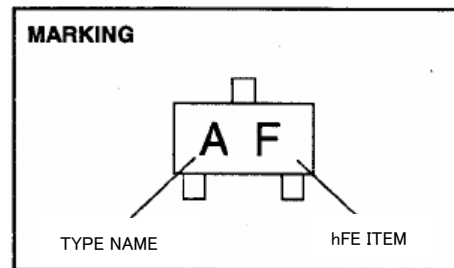
JEITA: SC-59
JEDEC: Similar to TO-236

TERMINAL CONNECTER
①: BASE
②: EMITTER
③: COLLECTOR

Note)

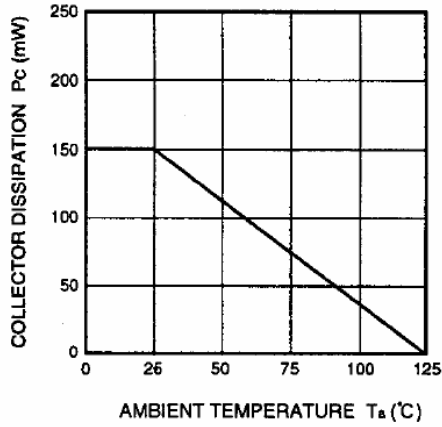
The dimension without tolerance represent central value.

MARKING

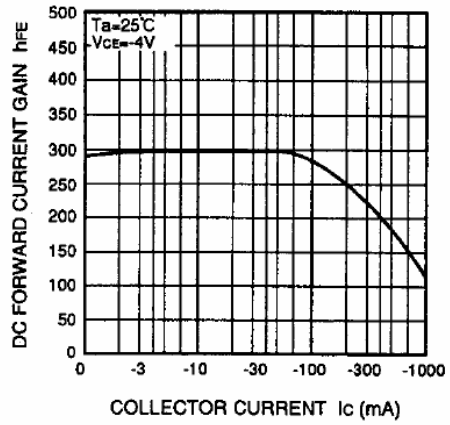


TYPICAL CHARACTERISTICS

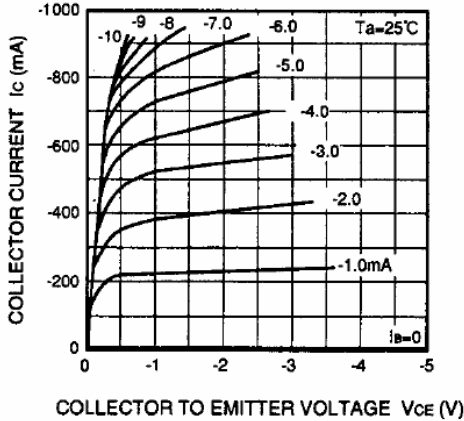
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



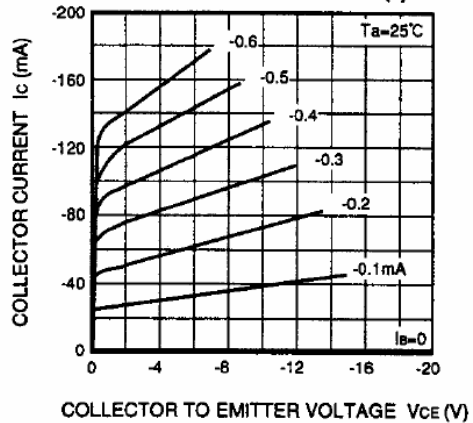
DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



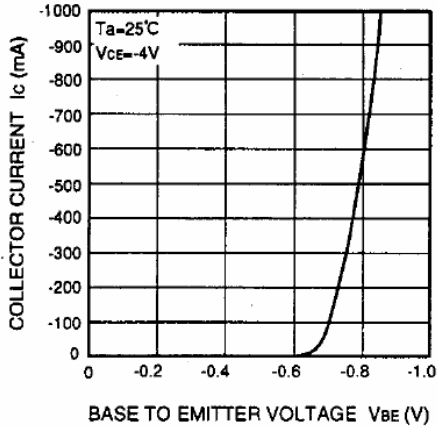
COMMON EMITTER OUTPUT (1)



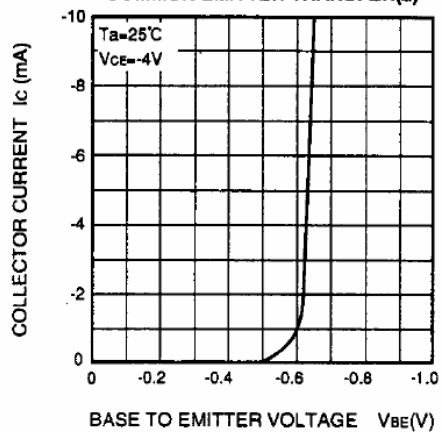
COMMON EMITTER OUTPUT (2)



COMMON EMITTER TRANSFER (1)



COMMON EMITTER TRANSFER(2)





6-41 Tsukuba, Isahaya, Nagasaki, 854-0065 Japan

Keep safety first 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 due consideration to safety when making your circuit designs, with appropriate measures such as (1) placement of substitutive, auxiliary, (2) use of non-flammable material or (3) prevention against any malfunction or mishap.

Notes regarding these materials

- These materials are intended as a reference to our customers in the selection of the ISAHAYA products best suited to the customer's application; they don't convey any license under any intellectual property rights, or any other rights, belonging ISAHAYA or third party.
- ISAHAYA Electronics Corporation assumes no responsibility for any damage, or infringement of any third party's rights, originating in the use of any product data, diagrams, charts or circuit application examples contained in these 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 an authorized ISAHAYA products distributor for the latest product information before purchasing product listed herein.
- ISAHAYA Electronics Corporation products are not designed or manufactured for use in a device or system that is used under circumstances in which human life is potentially at stake. Please contact ISAHAYA electronics corporation or an authorized ISAHAYA products distributor when considering the use of a product contained herein for any specific purposes, such as apparatus or systems for transportation, vehicular, medical, aerospace, nuclear, or undersea repeater use.
- 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 re-export contrary to the export control laws and regulations of Japan and/or the country of destination is prohibited.
- Please contact ISAHAYA Electronics Corporation or authorized ISAHAYA products distributor for further details on these materials or the products contained therein.