

<Transistor>

2SC5384

For High Frequency Amplify, Medium Frequency Amplify Application
Silicon NPN Epitaxial Type Ultra Super Mini

DESCRIPTION

2SC5384 is a super mini silicon NPN epitaxial type transistor designed for high frequency amplify, oscillating, frequency exchange, medium frequency amplify application.

FEATURE

- High gain (@10.7MHz), MAG=45dB typ
- Low noise (@10.7MHz), NF=3.0dB typ
- Small τ_{re} (@10.7MHz), τ_{re} =-J0.11mS typ
- Super mini package for easy mounting

APPLICATION

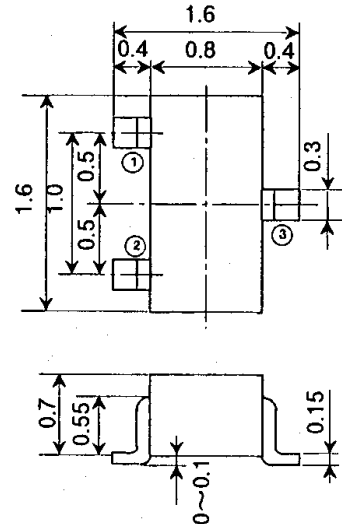
High frequency amplify, oscillating, frequency exchange, medium frequency amplify for small communication machine, FM/AM radio.

MAXIMUM RATINGS (Ta=25°C)

SYMBOL	PARAMETER	RATINGS	UNIT
V _{CB0}	Collector to Base voltage	30	V
V _{EB0}	Emitter to Base voltage	4	V
V _{CE0}	Collector to Emitter voltage	25	V
I _c	Collector current	30	mA
P _c	Collector dissipation (Ta=25°C)	125	mW
T _j	Junction temperature	+125	°C
T _{stg}	Storage temperature	-55 to +125	°C

OUTLINE DRAWING

UNIT:mm



Terminal Connector

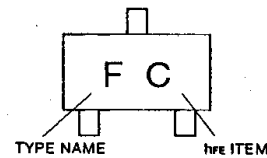
- ① : Base
- ② : Emitter
- ③ : Collector

EIAJ : —
JEDEC : —

Note)

The dimension without tolerance represent central value.

MARKING



ELECTRICAL CHARACTERISTICS (Ta=25°C)

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
I _{CBO}	Collector cut off current	V _{CB} =25V, I _E =0			1	μA
I _{EBO}	Emitter cut off current	V _{EB} =4V, I _C =0			1	μA
h _{FE} *	DC forward current gain	V _{CE} =6V, I _C =1mA	35		180	—
V _{CE(sat)}	C to E saturation voltage	I _C =10mA, I _B =1mA		0.1	0.3	V
f _T	Gain band width product	V _{CE} =6V, I _E =-1mA	150	200		MHz
C _{ob}	Collector output capacitance	V _{CB} =6V, I _E =0, f=1MHz		2.0	2.7	pF
C _{crb'b}	Base time constant	V _{CB} =6V, I _E =-1mA, f=31.8MHz		20	60	pS
NF	Noise figure	V _{CE} =6V, I _E =-1mA, f=10.7MHz, R _G =500Ω		3.0		dB

ITEM	B	C	D
h _{FE}	35~70	55~110	90~180

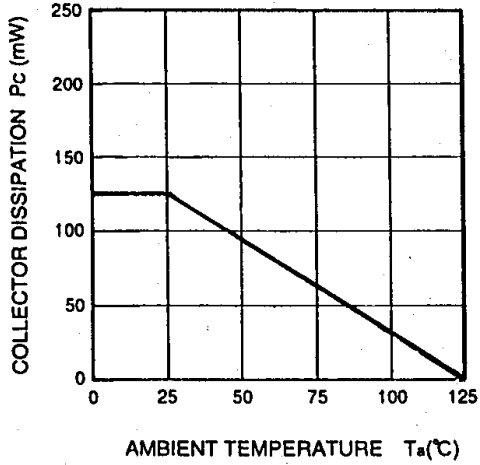
(Transistor)

2SC5384

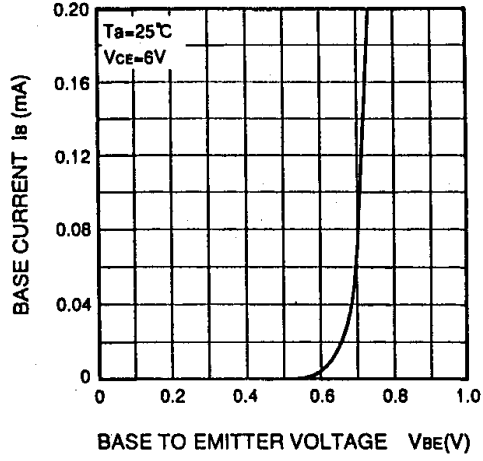
For High Frequency Amplify, Medium Frequency Amplify Application
Silicon NPN Epitaxial Type Ultra Super Mini

TYPICAL CHARACTERISTICS

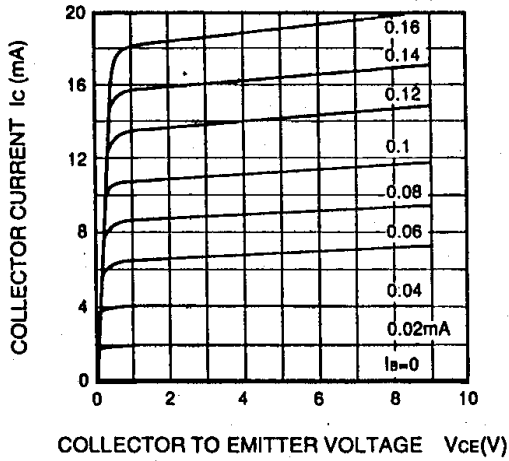
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



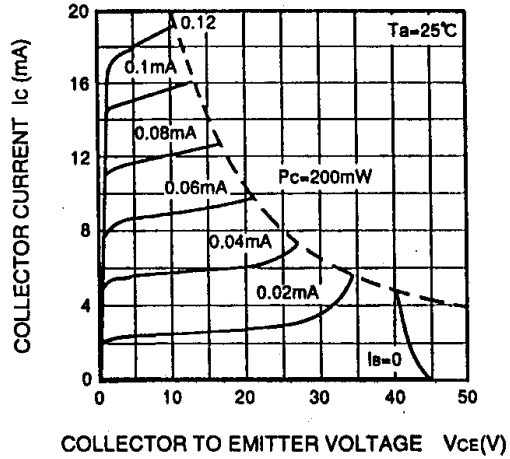
COMMON EMITTER INPUT



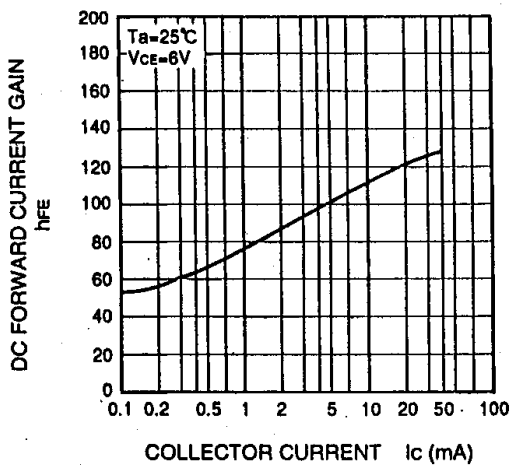
COMMON EMITTER OUTPUT (1)



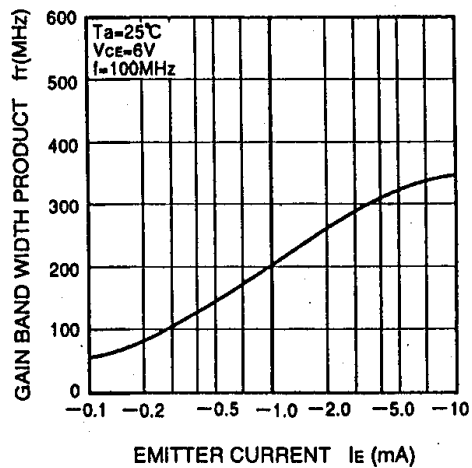
COMMON EMITTER OUTPUT (2)



DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



<Transistor>

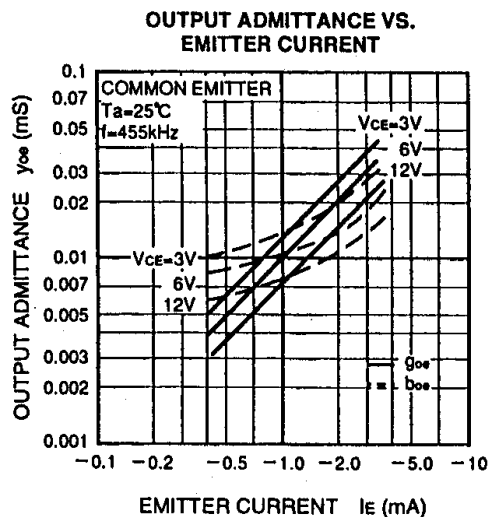
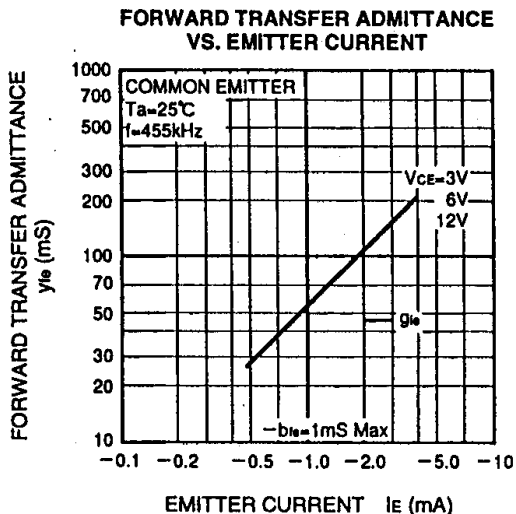
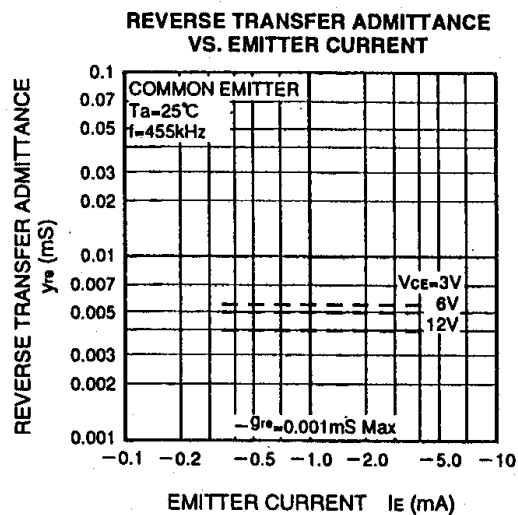
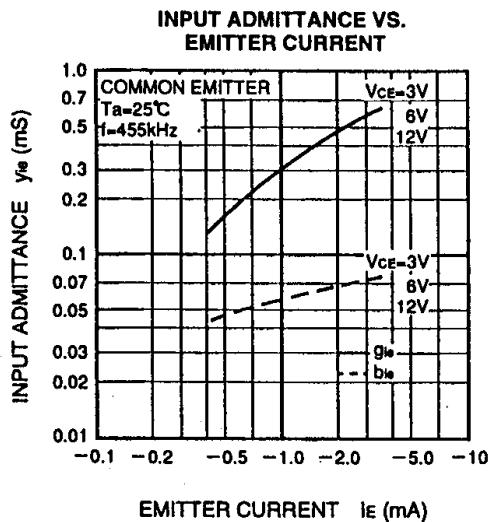
2SC5384

For High Frequency Amplify, Medium Frequency Amplify Application
Silicon NPN Epitaxial Type Ultra Super Mini

COMMON EMITTER, y PARAMETER (TYPICAL VALUE)

Test conditions		f=455kHz VCE=6V IE=-1mA	f=1MHz VCE=6V IE=-1mA	f=10.7MHz VCE=6V IE=-1mA	f=100MHz VCE=6V IE=-1mA
y _{ie} (mS)	g _{ie}	0.30	0.30	0.38	4.4
	b _{ie}	0.06	0.12	1.40	11.0
y _{re} (mS)	-g _{re}	0.001Max	0.001Max	0.005Max	0.05Max
	-b _{re}	0.005	0.010	0.11	1.0
y _{fe} (mS)	g _{fe}	50	46	37	25
	-b _{fe}	1.0Max	1.0Max	2.8	16
y _{oe} (mS)	g _{oe}	0.010	0.012	0.03	0.32
	b _{oe}	0.011	0.022	0.18	1.3

COMMON EMITTER, 455kHz y PARAMETER

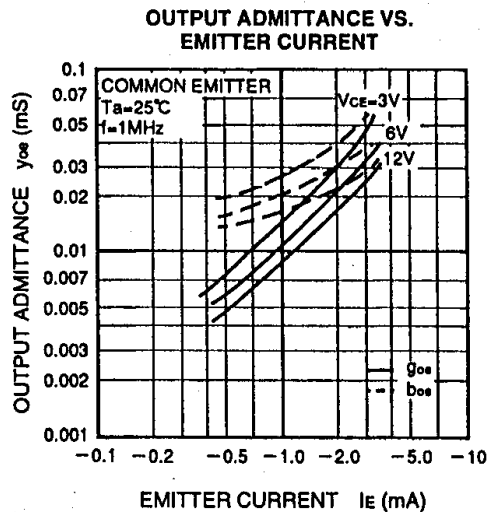
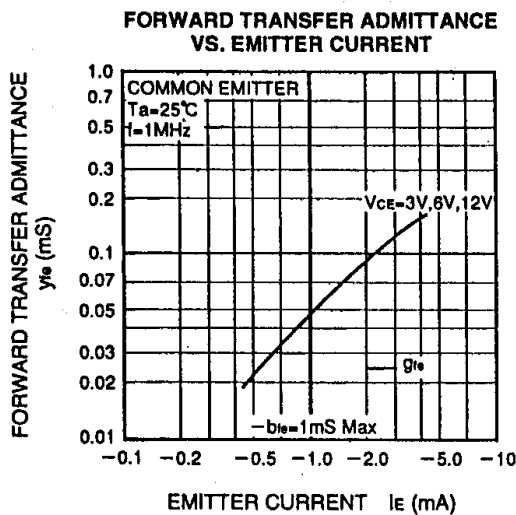
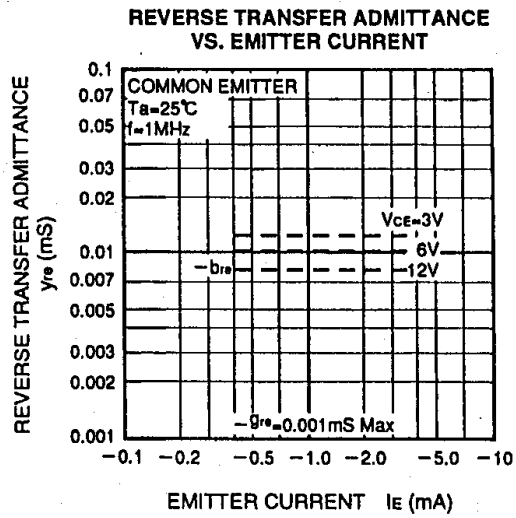
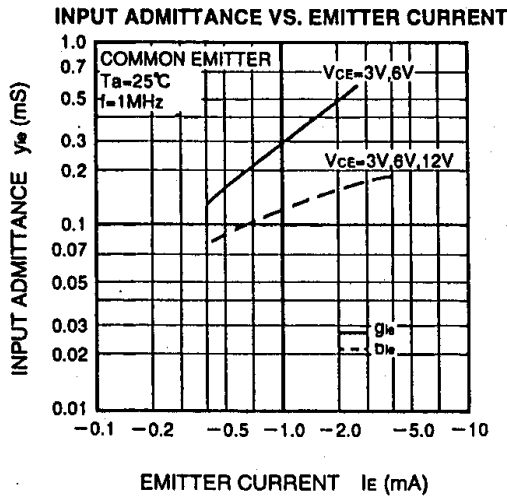


<Transistor>

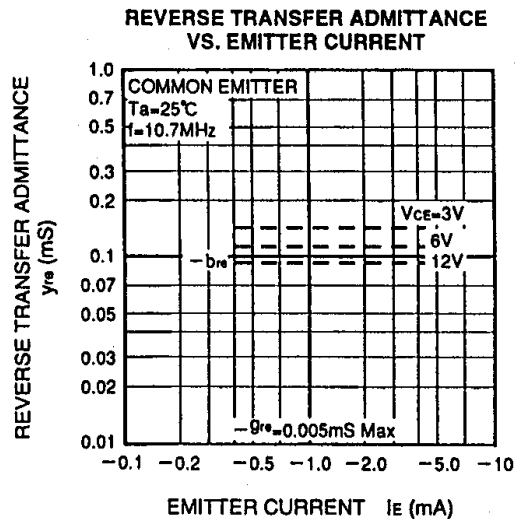
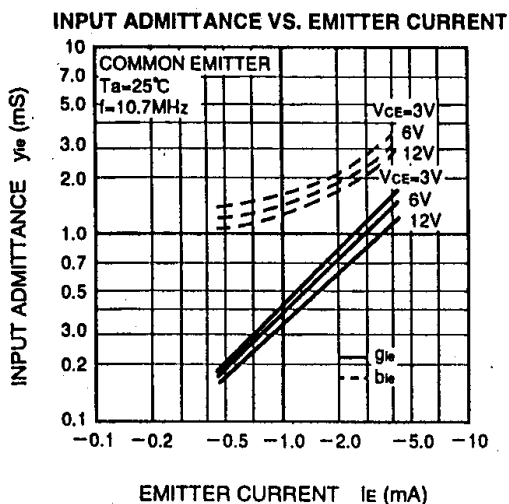
2SC5384

For High Frequency Amplify, Medium Frequency Amplify Application
Silicon NPN Epitaxial Type Ultra Super Mini

COMMON EMITTER, 1MHz y PARAMETER



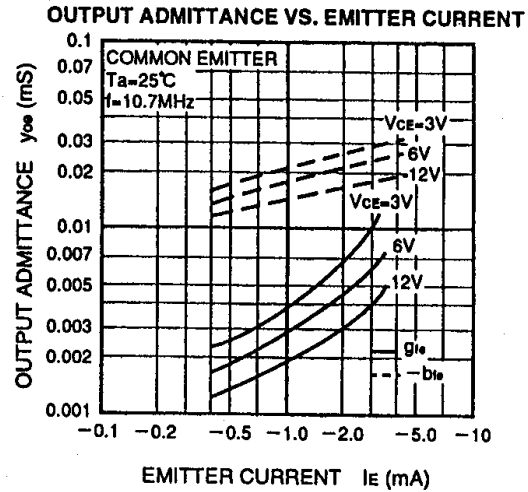
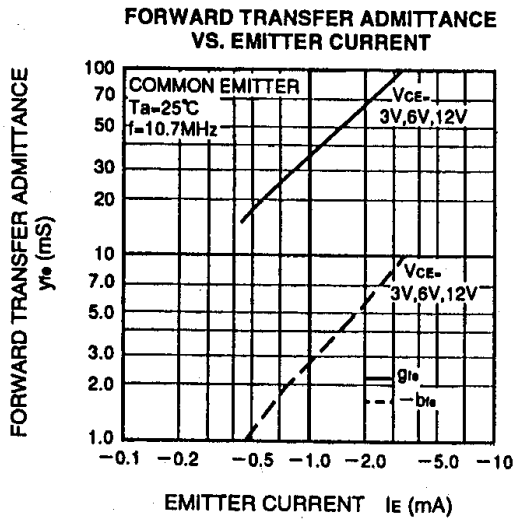
COMMON EMITTER, 10.7MHz y PARAMETER



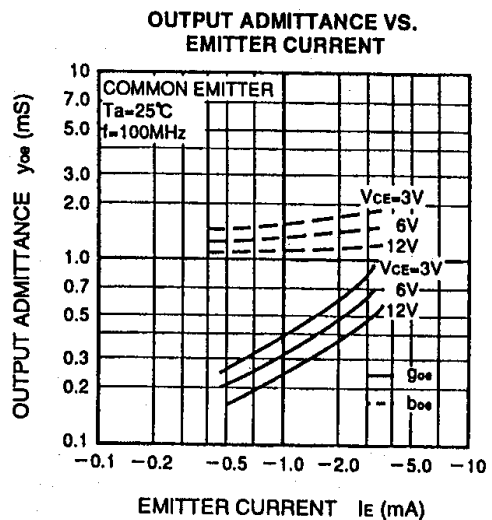
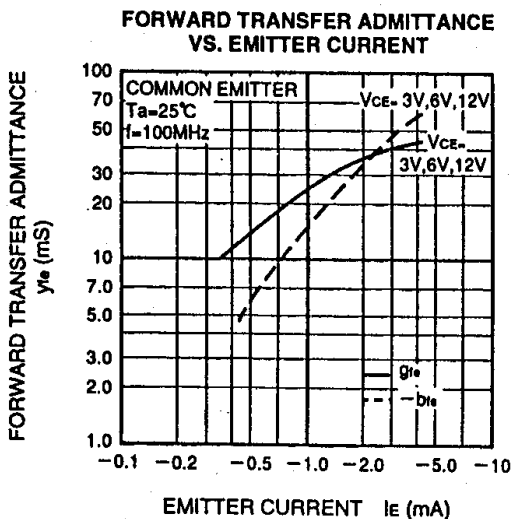
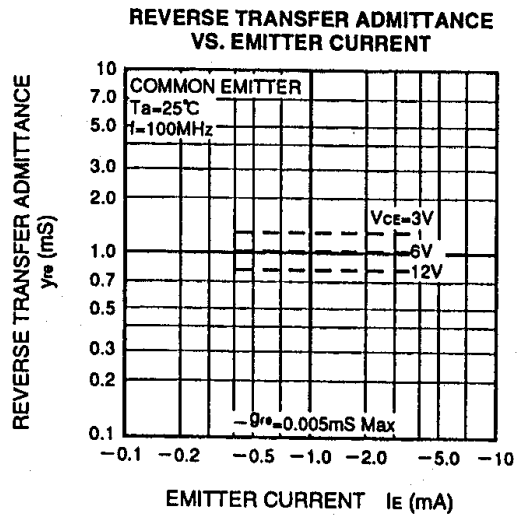
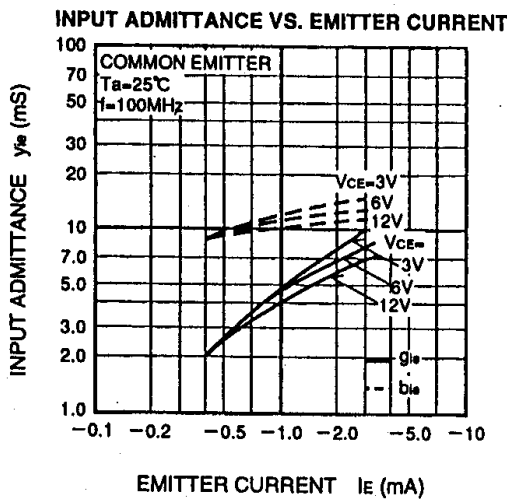
(Transistor)

2SC5384

For High Frequency Amplify, Medium Frequency Amplify Application
Silicon NPN Epitaxial Type Ultra Super Mini



COMMON EMITTER, 100MHz y PARAMETER



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 bold, 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.
