■ Product summary

CA0024AN is a video selector IC that switches two video signals. The IC includes three circuits of 2-input/1-output switches, and optimum for switching of RGB signals and component signals.
Its QFN-16pin package (3.0mm x 3.0mm) conserves mounting space.
Because the operation temperature range and the storage temperature range is wide, the IC can be also used for car AV equipment.

■ Features

- Includes three circuits of 2-input/1-output selectors
- Power supply voltage: 5.0±0.5V (Maximum rating: 7.0V)
- Wide operation temperature range: from -40°C to 85°C
- Wideband frequency characteristics: 100kHz to 20MHz 0dB（typ）
- Package: QFN-16pin 3.0mm × 3.0mm 0.5mm pitchs
- Bias input

■ Maximum ratings

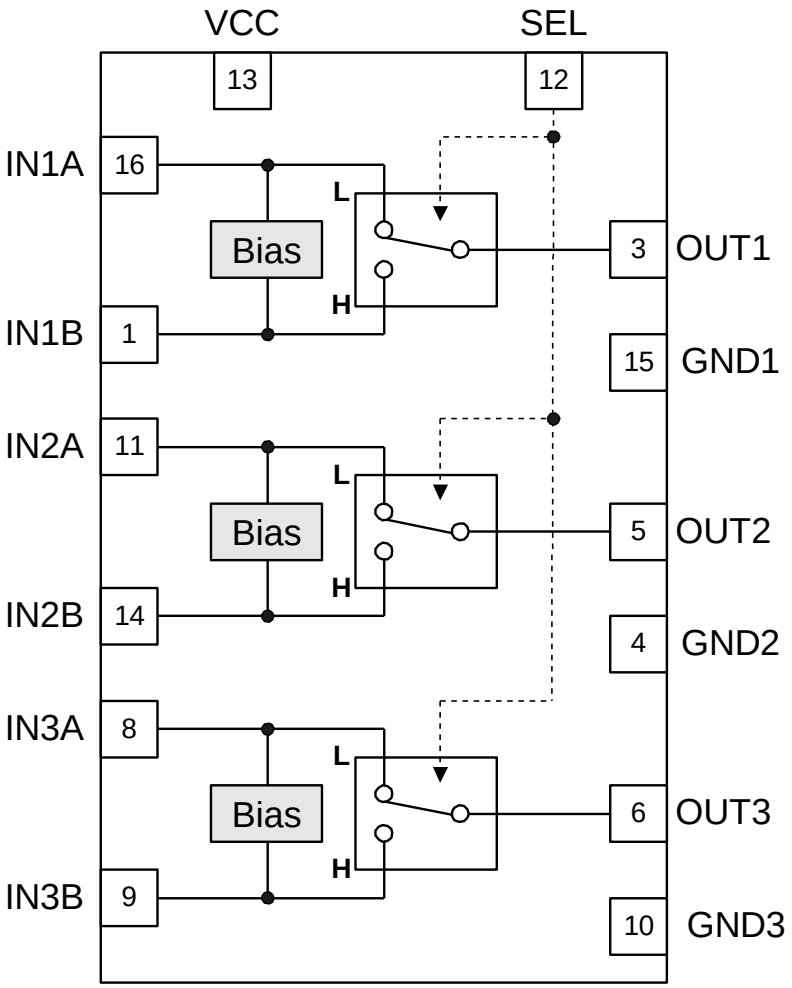
Item	Symbol	Rating	Unit
Power supply voltage	VCC	7.0	V
Power dissipation	Pd	215 (Ta<25°C)	mW
Input voltage range	Vin	0 to VCC+0.2	V
Operating ambient temperature	Topr	-40 to +85	°C
Storage temperature	Tstg	-40 to +125	°C

■ Recommended operating conditions

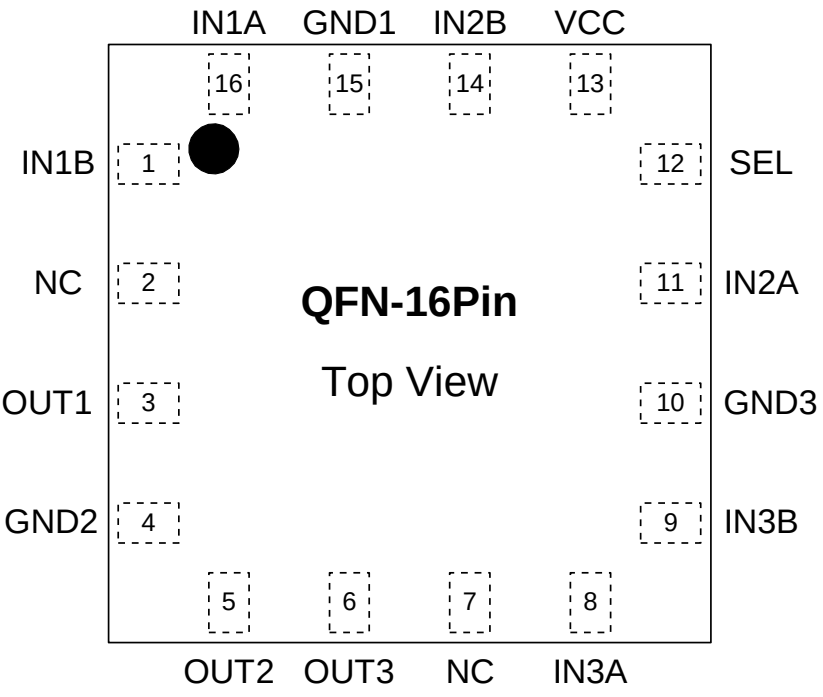
Item	Symbol	Rating	Unit
Power supply voltage	VCC	5.0±0.5	V

Note: The contents of this documents may be subject to change without prior notice, please contact our sales representative for the latest version.

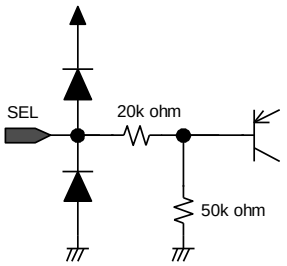
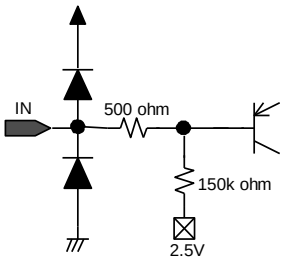
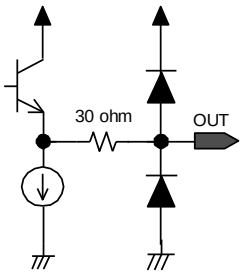
■Block diagram



■Pin allocation



■Equivalent circuit of input and output terminal

No.	Symbol	I/O	Equivalent circuit	DC voltage	Explanation
13	VCC	IN	–	5V	Power supply terminal
15 4 10	GND1 GND2 GND3	IN	–	0V	Ground terminal
12	SEL	IN		0V	Video signal switching terminal
16 1 11 14 8 9	IN1A IN1B IN2A IN2B IN3A IN3B	IN		2.6V	Video signal input terminal
3 5 6	VOUT1 VOUT2 VOUT3	OUT		1.8V	Video signal output terminal

■Electrical characteristics

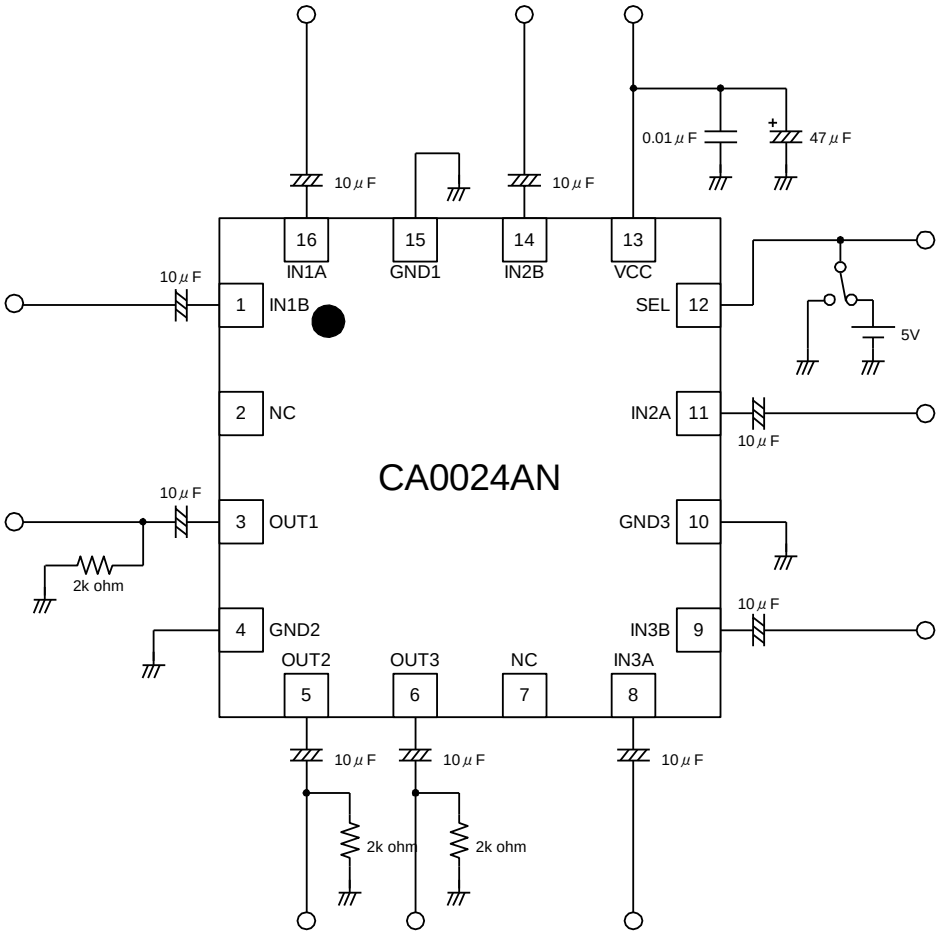
Measurement conditions: VCC=5.0V, Ta=25°C

Item	Symbol	Condition	MIN	TYP	MAX	UNIT
Consumption current	ICC	No signal	8.0	11.5	15.0	mA
Maximum input voltage	Vimax		2.4	-	-	Vpp
Maximum output voltage	Vomax	f=100kHz, THD=1%	2.4	-	-	Vpp
Voltage gain	Gv	Vin=2Vpp, f=100kHz	-0.6	-0.1	0.4	dB
Frequency response	Gf	Vin=2Vpp, f=100kHz reference 20MHz	-1	0	1	dB
Cross talk *1	CT1	Vin=2Vpp, f=4.43MHz	-	-75	-	dB
Cross talk 2 *1	CT2	Vin=2Vpp, f=20MHz	-	-55	-	dB
Differential gain *1	DG	Vin=1Vpp, Standard stair step signal	-	0.3	-	%
Differential phase *1	DP	Vin=1Vpp, Standard stair step signal	-	0.3	-	deg.
S/N ratio *1	S/NV	Vin=1Vpp, 100% white signal	-	75	-	dB
SEL pin switch voltage	VSH	B system output	2.5	-	5.0	V
	VSL	A system output	0	-	1.0	

*1 Design guarantee item

*2 Input terminals which doesn't input a signal are connected to GND.

■Measurement circuit diagram



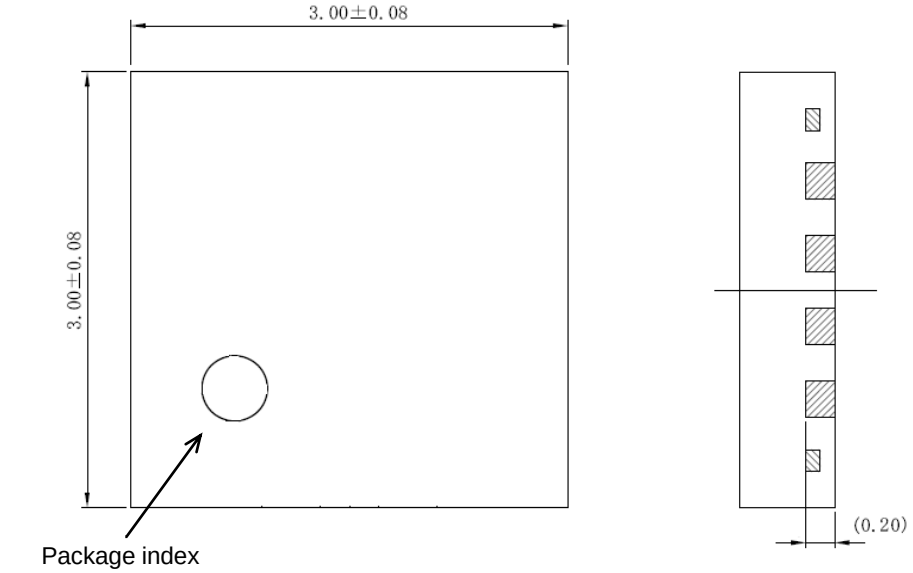
■ Attention

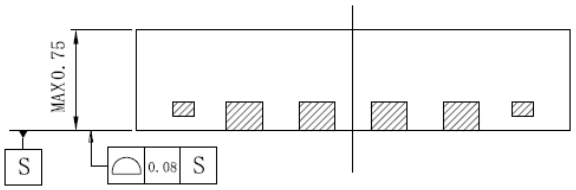
・Be sure to connect 0.01μF bypass capacitor to between power supply terminals in order to lower the impedance of a power supply line.

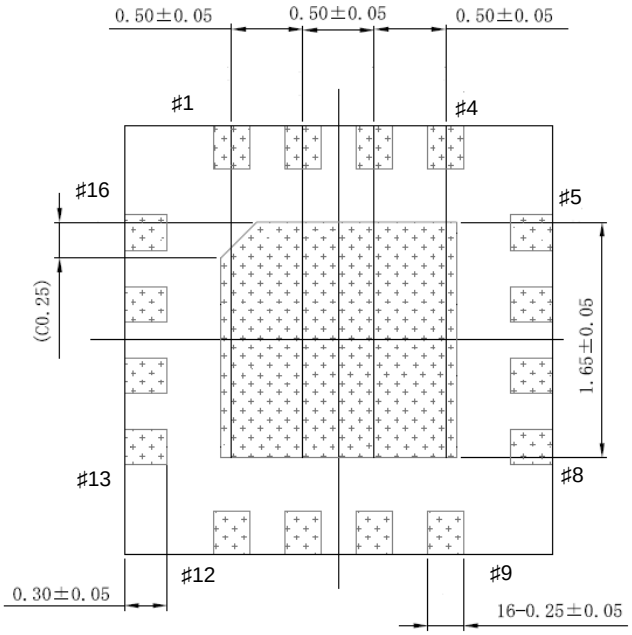
・Bypass capacitor should consider pattern of Printed Circuit to be able to arrange to near the IC

・This IC cannot drive 75Ω directly. When driving 75Ω, connect a video driver IC behind this IC.

■ External dimensions

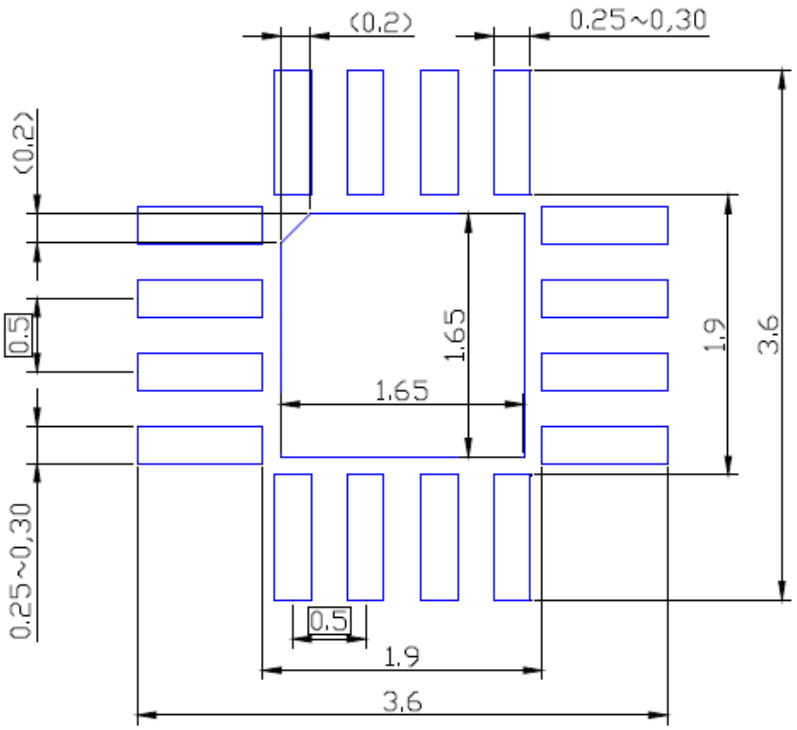






Unit: mm
※not to scale

■ Reference land pattern



Unit: mm
※not to scale

To our valued customers

If any product described in this document corresponds to goods or technologies which are restricted to export under the Japanese "Foreign Exchange and Foreign Trade Control Law" or other applicable laws of a government having jurisdiction, then, appropriate permission for exporting such products or technologies are required to be taken.

In relation to use of the information contained in this document, no license is granted to you with regard to any intellectual property rights of YITOA MICRO TECHNOLOGY CORPORATION (hereinafter referred to as "MTC") or any third party. MTC will not be liable in any way for any claim related to infringement of intellectual property rights or other rights of third parties arising from the use of the information contained in this document.

The information concerning the circuits and other related information contained in this document is provided for referential purpose only to explain the operation or application of the products, and it will be your sole responsibility to use such information for designing of your own devices. MTC will not be liable in any way for any loss or damages incurred to you or any other party arising from the use of such information.

In general, failures in semiconductor products occur at certain percentage. Therefore, upon designing your own devices, please give due consideration to the redundancy, safety of your devices and methods to prevent occurrence of malfunction in order to avoid personal injuries, accidents or other social damages which might happen as the result of a failure of semiconductor products used in your devices.

For application of MTC products to medical equipment or other purposes where high reliability of the device is required, please contact MTC sales representative.

The contents of this document may be subject to change without any notice, due to improvement of reliability or design of the products.
It is inhibited to reproduce or copy the whole or part of this document without the permission of MTC.

YITOA Micro Technology Corporation
Sales Division
465 Osato-Cho, Kofu, Yamanashi-Pref.
400-0053 Japan
TEL: +81-55-241-8622
FAX: +81-55-241-8769