

OUTPUT COUPLING CAPACITOR-LESS Y/C MIX VIDEO AMPLIFIER WITH COAXIAL COMMUNICATION RECEIVER

■ GENERAL DESCRIPTION

The NJU71044 is a Low Voltage Video Amplifier with Coaxial Communication Receiver. By the internal charge pump circuit, output capacitor is unnecessary.

The NJU71044 features low power and small package, and is suitable for low power design on downsizing of portable video system and system with video output.

■ PACKAGE OUTLINE



NJU71044RB2
MSOP10(TVSP10)

■ FEATURES

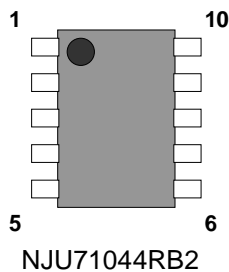
- Operating Voltage 2.5 to 3.45V
- Output coupling capacitor-less
- Coaxial Communication Receiver
- Internal Y/C MIX Circuit
- 12dB amplifier
- Internal 75Ω Driver Circuit (2-system drive)
- Internal LPF -1dB at 10MHz typ
 -40dB at 54MHz typ

- CMOS Technology
- Package Outline

MSOP10(TVSP10)*

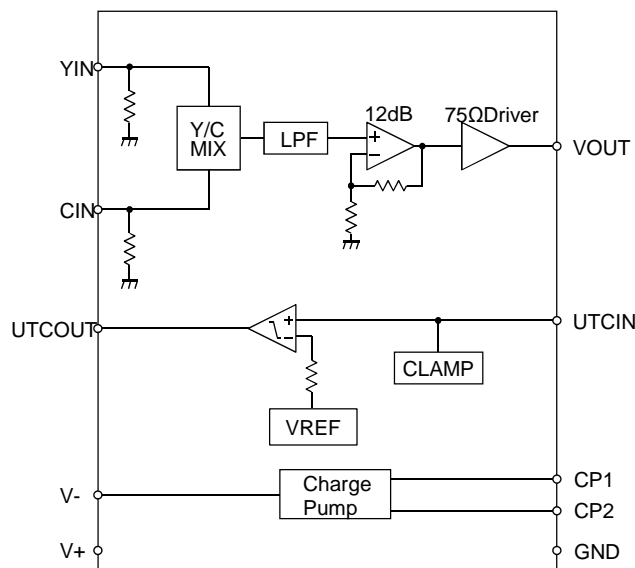
*MEET JEDEC MO-187-DA / THIN TYPE

■ PIN CONFIGURATION



- 1: CP1
- 2: V+
- 3: YIN
- 4: CIN
- 5: UTCOUT
- 6: UTCIN
- 7: VOUT
- 8: GND
- 9: V-
- 10: CP2

■ BLOCK DIAGRAM



NJU71044

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	3.55	V
Power Dissipation	P _D	MSOP10(TVSP10): 480(Note1)	mW
YIN Input Voltage (positive)	YIN+	+0.5	V
YIN Input Voltage (negative)	YIN-	-0.5	V
CIN Input Voltage (positive)	CIN+	+0.5	V
CIN Input Voltage (negative)	CIN-	-0.5	V
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-55 to +125	°C

(Note 1) At on a board of EIA/JEDEC specification. (114.3 x 76.2 x 1.6mm 2 layers, FR-4)

■ RECOMMENDED OPERATING CONDITION (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	Vopr		2.5	-	3.45	V

■ ELECTRICAL CHARACTERISTICS (V⁺=3.0V, R_L=150Ω, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
-----------	--------	----------------	------	------	------	------

◆ Power Supply

Operating Current	I _{CC}	No Signal	-	20	30	mA
-------------------	-----------------	-----------	---	----	----	----

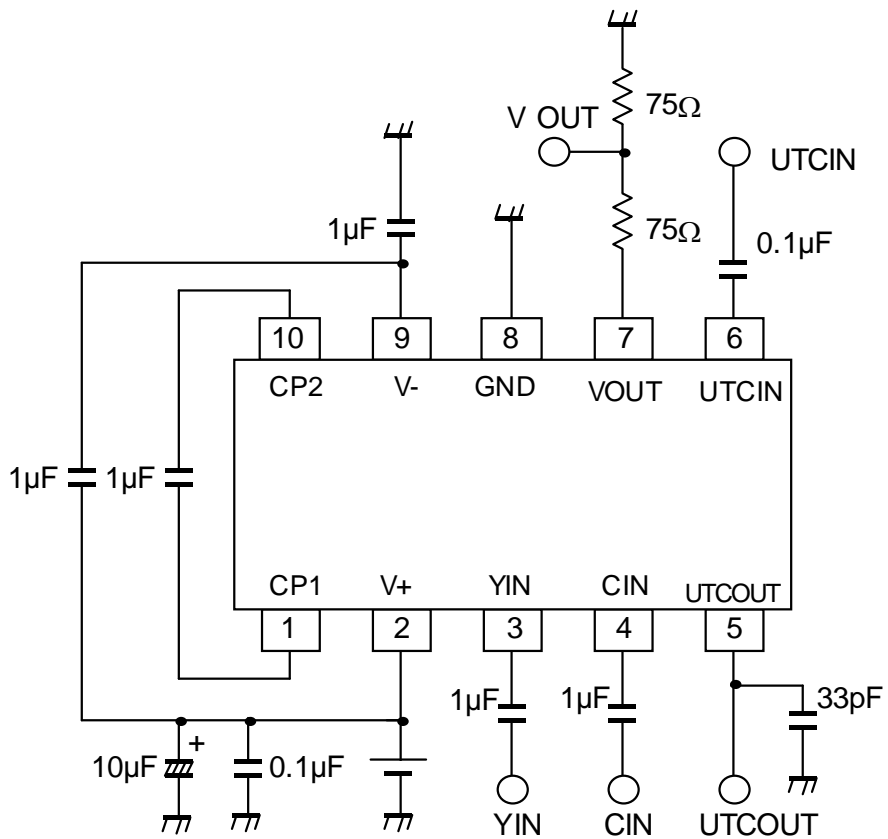
◆ Video Amplifier Characteristics

Maximum Output Voltage Swing	V _{om}	f=100kHz, THD=1%	3.6	-	-	V _{p-p}
Voltage Gain 1	G _{v1}	Y _{in} =100kHz, 0.5V _{p-p} , Input Sine Signal	11.6	12.0	12.4	dB
Voltage Gain 2	G _{v2}	C _{in} =3.58MHz, 0.15V _{p-p} , Input Sine Signal	11.6	12.0	12.4	dB
Low Pass Filter Characteristic	G _{fy6.75M}	Y _{in} =6.75MHz/100kHz, 0.5V _{p-p}	-1.0	0	1.0	dB
	G _{fy10M}	Y _{in} =10MHz/100kHz, 0.5V _{p-p}	-	-1.0	-	
	G _{fy54M}	Y _{in} =54MHz/100kHz, 0.5V _{p-p}	-	-40	-24	
Differential Gain	DG	Y _{in} =0.5V _{p-p} , 10step Video Signal	-	0.5	-	%
Differential Phase	DP	Y _{in} =0.5V _{p-p} , 10step Video Signal	-	0.5	-	deg
S/N Ratio	SN _v	100kHz to 6MHz, Y _{in} =0.5V _{p-p} 100% White Video Signal, R _L =75Ω	-	+65	-	dB
Switching Noise Level	N _{swpl}	R _L =75Ω, 10% White Video Signal Input	-	4	7	mV _{pp}

◆ Coaxial Communication Receiver Characteristics

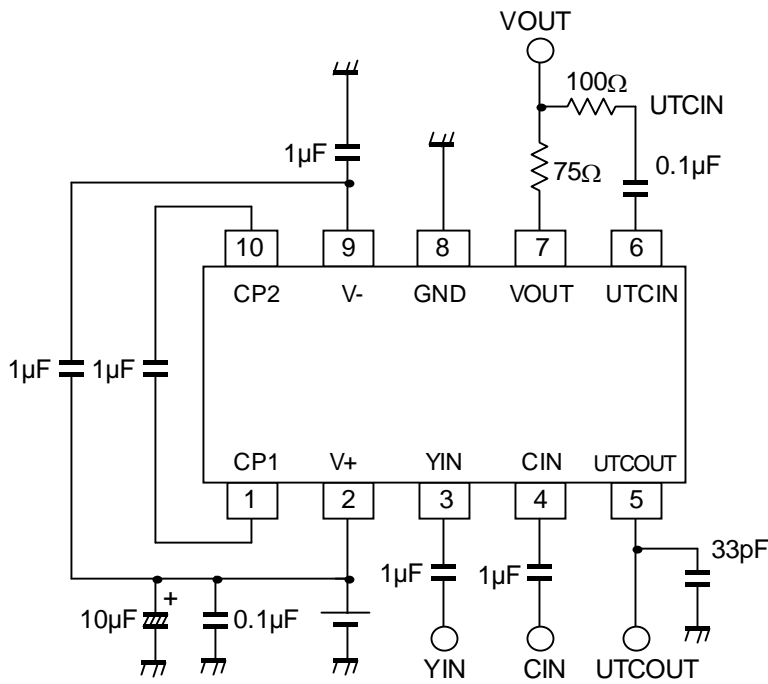
Data Threshold Voltage	V _{th}	Referenced to sync-tip	-	0.65	-	V
Data Output Voltage High Level	V _{OH}	I _{source} =3mA	2.7	-	-	V
Data Output Voltage Low Level	V _{OL}	I _{sink} =3mA	-	-	0.3	

■ TEST CIRCUIT

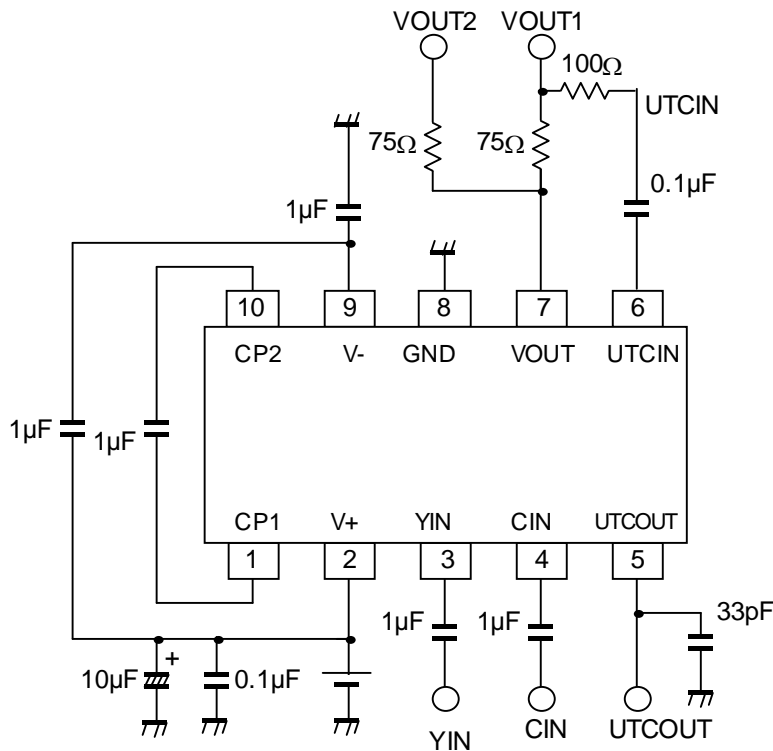


NJU71044

■ APPLICATION CIRCUIT 1 (Standard circuit)



■ APPLICATION CIRCUIT 2 (Two-line drive circuit)



• Application flow about the UTC receiver of the NJU71044

1. The output-signal from VOUT (pin7) superimposes a camera control signal by a camera control unit.
2. The superimposed signal is inputted to the camera output block.(.)
3. The superimposed signal is inputted to UTCIN (pin6).
4. Its signal is clamped to sync-tip to reference voltage.
5. The clamped signal is amplified two times. After that, its signal is passed through comparator, and converted to high level (V+) or low level (0V). And then, the converted signal is outputted from UTCOUT (pin5).
6. The outputted signal from UTCOUT (pin5) is inputted to CCTV' s camera control unit.

Note) The control signal cannot use 2-system drive. Refer to Fig2.

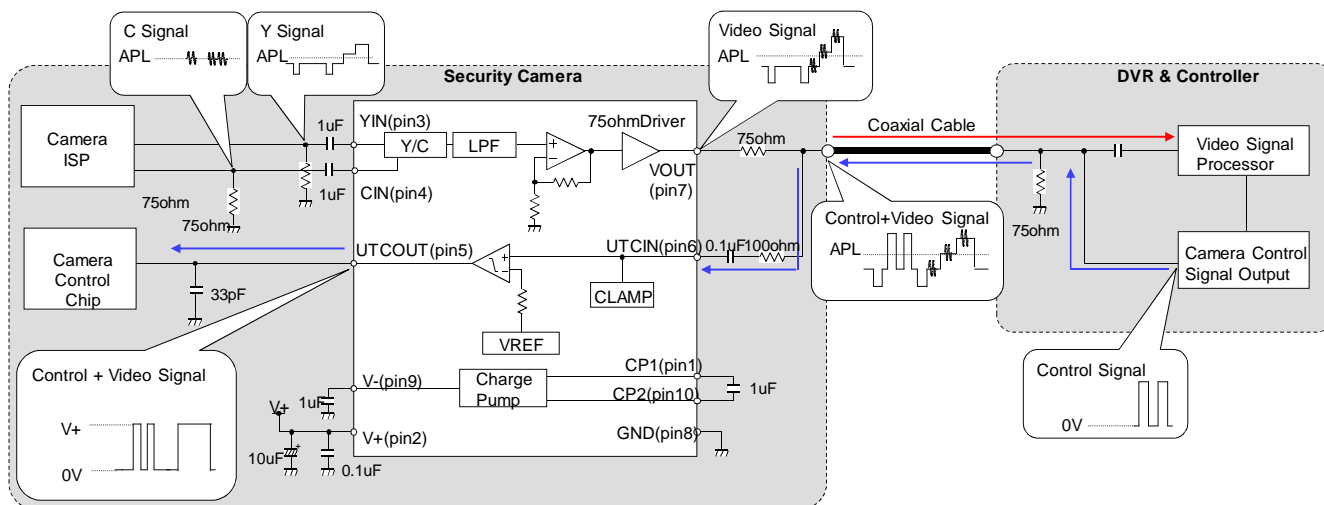


Fig.1: Application of UTC

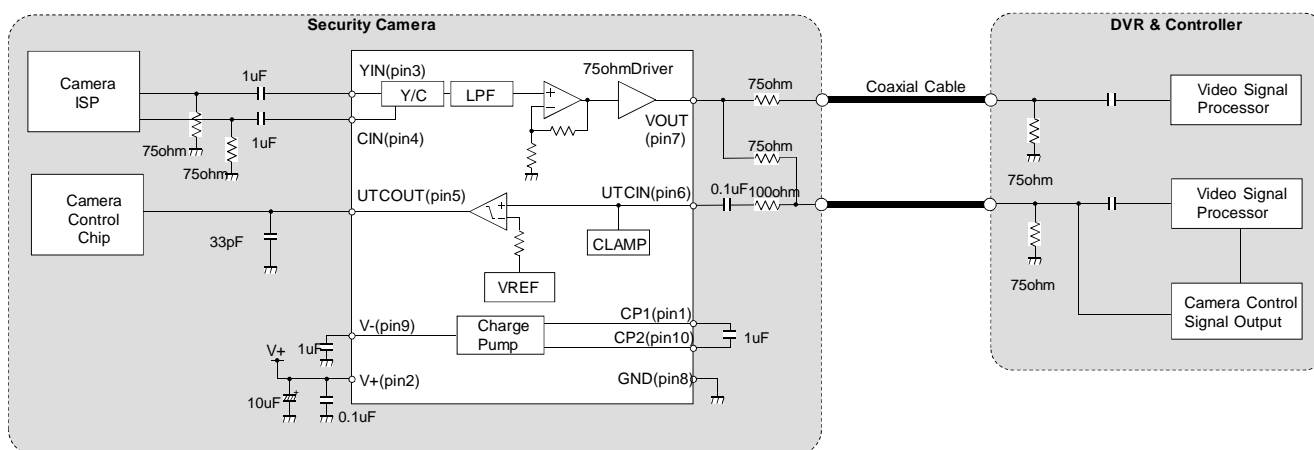


Fig.2: 2 - system drive application

■ TERMINAL DISRIPTION

PIN No.	PIN NAME	FUNCTION	EQUIVALENT CIRCUIT	DC VOLTAGE
1	CP1	Flying Capacitor Terminal		-
2	V+	V+ Power Supply	-	-
3	YIN	Input for Y signal		0V
4	CIN	Input for C signal		0V
5	UTC OUT	Output for UTC receiver		-

■ TERMINAL DIScription

PIN No.	PIN NAME	FUNCTION	EQUIVALENT CIRCUIT	DC VOLTAGE
6	UTCIN	Input for UTC receiver		0.35V
7	VOUT	Output for video signal		0V
8	GND	ground	-	-
9	V-	V- power supply for charge-pump	-	-
10	CP2	Flying Capacitor Terminal		-

[CAUTION]
 The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[NJR:](#)

[NJU71044RB2](#)

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru