REMOTE-CONTROL INTERFACE IC

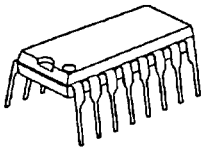
■ GENERAL DESCRIPTION

The NJM2129 is a remote-control interface for television, VCR, receiver, and others.

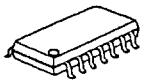
The signal flow of IN1 to OUT1 and IN2 to OUT2 is a first priority. When no signal is input from the IN2, a signal which is input from the IN1 is output to the OUT2 through the OUT1. Also when no signal is input from IN1 and IN2, a signal which is input from the OUT1 is output to the OUT2.

An internal regulator can operate a LED.

■ PACKAGE OUTLINE



NJM2129D



NJM2129M

■ FEATURES

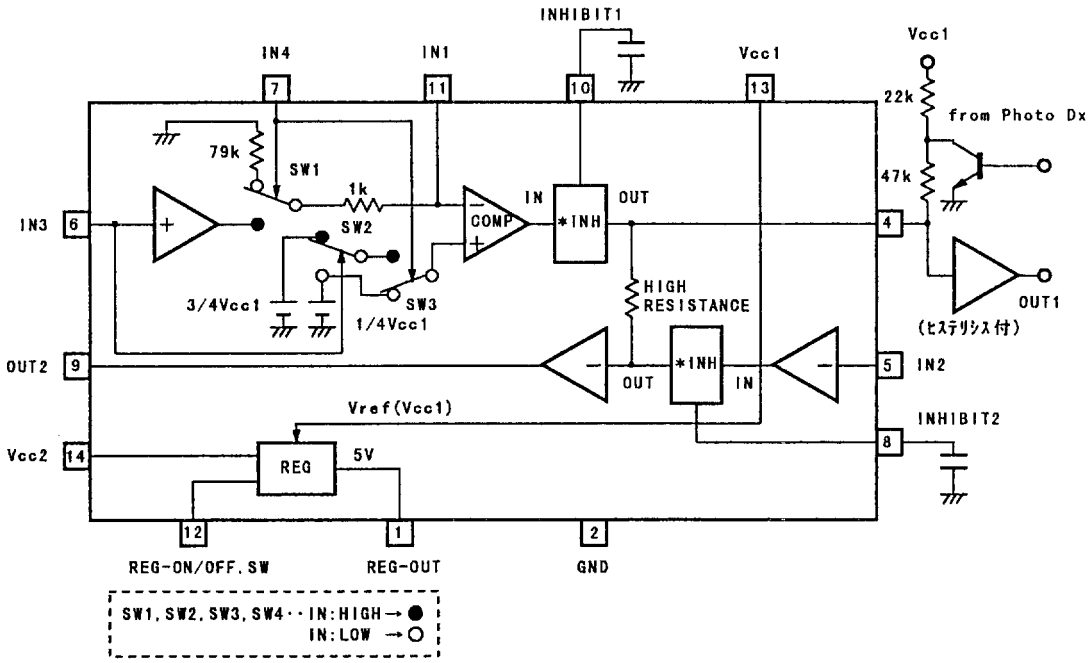
【INTERFACE BLOCK】

- IN4 switches One-Way or Two-Way communication

【REGULATOR BLOCK】

- Internal Current Limit Circuit
- Internal Output Short Protection
- ON/OFF Control
- Bipolar Technology
- Package Outline DIP14, DMP14

■ BLOCK DIAGRAM



*The output of INH becomes high impedance when its input is keeping over about 40 msec.

■ ABSOLUTE MAXIMUM RATINGS (Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	Vcc1, 2	15	V
Input Voltage	V_{IN}	15	V
Power Dissipation	P_D	DIP8 700 DMP8 300	mW
Operating Temperature Range	T_{opr}	-20 ~ +75	℃
Storage Temperature Range	T_{stg}	-40 ~ +125	℃

■ ELECTRICAL CHARACTERISTICS (Vcc1=5V, Ta=25℃)

PARAMETER	SYMBOL	TEST CONDITION								MIN.	TYP.	MAX.	UNIT
【INTERFACE】		INPUT CONDITION					CIRCUIT						
		OUT1	IN1	IN2	IN3	IN4	SW1	SW2	SW3				
Operating Supply Voltage1	Vcc1	—	—	—	—	—				4.75	5.0	5.25	V
Operating Current1	Icc1	—	L	L	L	L				—	2	4	mA
Operating Current2	Icc2	—	—	H	H	H	3	2	3	—	4.5	7	mA
IN2/3/4-Vth	IN2/3/4-Vth	—	—	—	—	—				2.0	2.5	3.0	V
IN1-Vth (note 1)	IN1-Vth	—		—	L	H				1.0	1.3	2.0	V
		—		—	H/L	L				1.0	1.3	2.0	V
		—		—	H	H				3.0	3.6	4.0	V
OUT1 (Low)	OUT1-L		H	—	—	—		2		0	—	1.5	V
OUT1 (High)	OUT1-H		*L	—	—	—		1		3.5	—	5.0	V
OUT1 (Hi-Imp)	OUT1-Hi-Imp		L	—	—	—		1		0	—	1.5	V
			L	—	—	—		2		3.5	—	5.0	V
OUT2 (Low)	OUT2-L	L	H	*L	—	—		2	1	0	—	1.5	V
		H	*L	*L	—	—		1	1				
		L/H	L	*L	—	—		1/2	1				
		H	*L	L	—	—		1	1				
			L	L	—	—		2	1				
OUT2 (Hsgt)	OUT2-H	L	H	H	—	—		2	2	3.5	—	5.0	V
		H	*L	H	—	—		1	2				
		L/H	L	H	—	—		1/2	2				
		L	H	L	—	—		2	2				
			L	L	—	—		1	2				

(note 1) : The Vth of IN1 is changed by condition of IN3 and IN4.
*: For INHIBIT.

■ ELECTRICAL CHARACTERISTICS (Vcc1=5V, Ta=25°C)

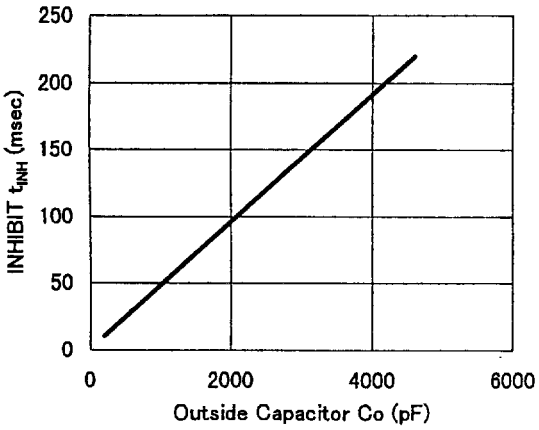
PARAMETER	SYMBOL	TEST CONDITION								MIN.	TYP.	MAX.	UNIT
【INTERFACE】		INPUT CONDITION					CIRCUIT						
		OUT1	IN1	IN2	IN3	IN4	SW1	SW2	SW3				
IN1 Input Impedance	IN1-Rin	—		-	-	-	1			47	80	120	kΩ
IN1-OUT(Low)	IN1-Lout			-	L	H	2			2	2.5	3	V
				-	L	H	3			0	—	1.0	V
IN1-OUT(High)	IN1-Hout	—		-	H	H	2			3.5	—	5.0	V
		—		-	H	H	3			2	2.5	3	V
IN1-OPEN	IN1-Open	—		-	H	H	1			4.0	—	5.0	V
INHIBIT1 Time	INH1-time	—	*L	-	-	L				20	40	80	ms
INHIBIT2 Time	INH2-time	—	-	*L	-	-		1		20	40	80	ms
Slew Switch1(IN1→OUT2)		Vcc1:OFF, IN1=3.5V							3	3.0	—	—	V
【POWER SUPPLY】	(note 3)												
Operating Power Supply2	Vcc2									5.75	5.9	12 (note4)	V
Operating Current2	Icc2	Io=0mA								—	2	3	mA
		Io=50mA								—	20	30	mA
Output Voltage	Vout	Vcc2=5.9V, Io=60mA								4.5	5.0	5.3	V
Line Regulation	△Vo-Vcc2	Vcc2=5.75V～12V, Io=50mA								—	—	300	mA
Load Regulation	△Vo-Io	Vcc2=5.9V, Io=0～50mA								—	—	300	mA
REG-SW(ON)	Reg-ON									3.0	—	5.0	V
REG-SW(OFF)	Reg-OFF									0	—	2.0	V

(note 3) The Vref in Power Supply block is the Vcc1, so that its specification is guaranteed at Vcc1=5V.

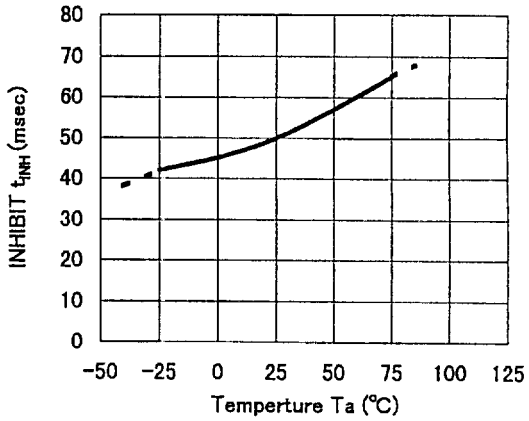
(note 4) The Supply voltage of Vcc2 must be chose less then power dissipation.

■ TYPICAL CHARACTERISTICS

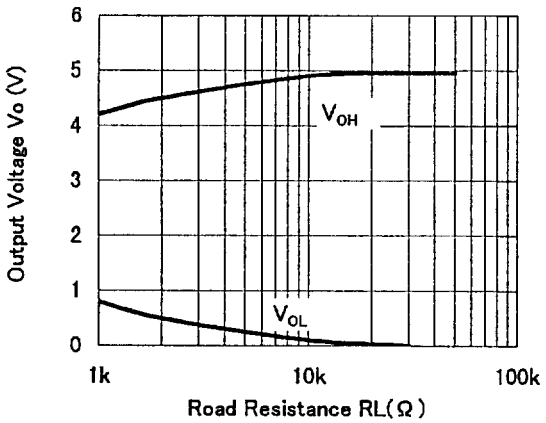
INHIBIT Time vs. Outside Capacitor
(Vcc1=5V,Ta=25°C)



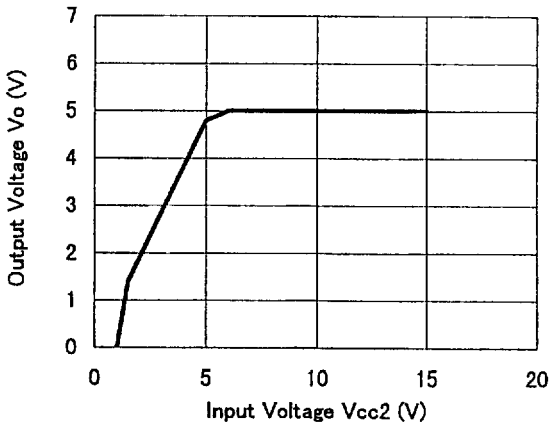
INHIBIT Time vs. Temperture
(Vcc1=5V,C=1000pF)



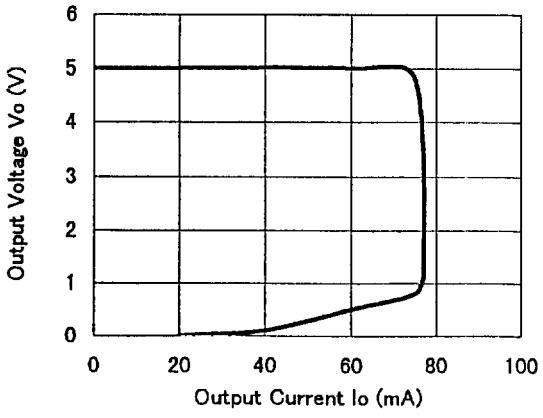
Out2 Output Voltage vs. Load Resistance
(Vcc1=IN2=5V,Ta=25°C)



Regulator Output Characteristics
(Vcc1=5V,R_L=100Ω,Ta=25°C)



Regulator Load Characteristics
(Vcc1=5V,Vcc2=5.9V,Ta=25°C)



Ripple Rejection
(Vcc1=5V,Vcc2=5.9V+300mVrms,R_L=100Ω,Ta=25°C)