REMOTE-CONTROL INTERFACE IC

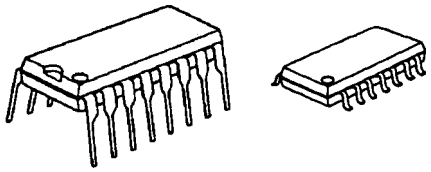
■ GENERAL DESCRIPTION

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

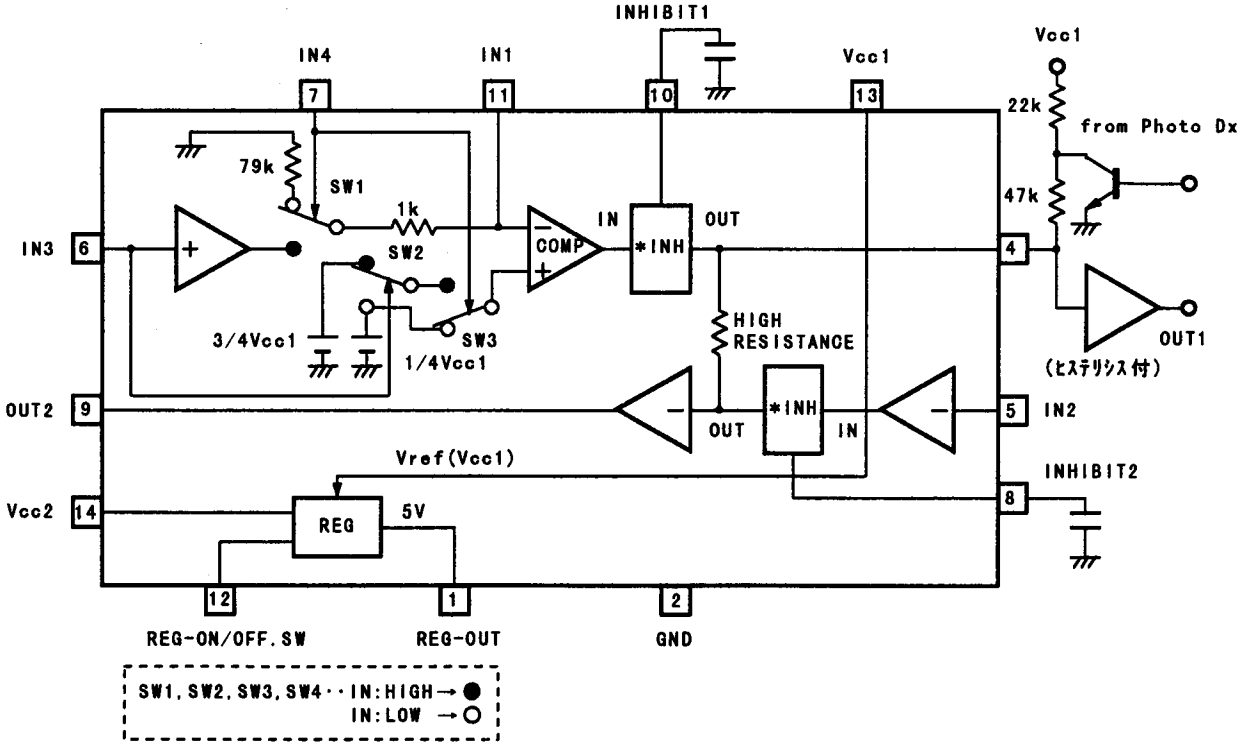
【INTERFACE BLOCK】

- IN4 switches One-Way or Tow-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 (T_a = 25ºC)

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 to + 75	ºC
Storage Temperature Range	T_{stg}	-40 to +125	ºC

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

PARAMETER	SYMBOL	TEST CONDITION								MIN.	TYP.	MAX.	UNIT
【INTERFACE】		INPUT CONDITION					CIRCUIT						
		OUT1	IN1	IN2	IN3	IN4	SW1	SW2	SW3				
Operating Supply Voltage1	V_{CC}1	—	—	—	—	—				4.75	5.0	5.25	V
Operating Current 1	Icc1	—	L	L	L	L				—	2	4	mA
Operating Current 2	Icc2	—	—	H	H	H	3	2	3	—	4.5	7	mA
IN2/3-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
OUT 1 (Low)	OUT1-L		H	—	—	—		2		0	—	1.5	V
OUT 1 (High)	OUT1-H		*L	—	—	—		1		3.5	—	5.0	V
OUT 1(Hi-Imp)	OUT 1-Hi-Imp		L	—	—	—		1		0	—	1.5	V
			L	—	—	—		2		3.5	—	5.0	V
OUT2 (Low)	OUT 2-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				
OUT 2 (Hsgt)	OUT 2-H	L	H	H	—	—		2	2	3.5	—	5.0	V
		H	*L	H	—	—		1	2				
		L/H	L	H	—	—		1/2	2				
		H	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℃)

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 Switch 1(IN1 → OUT2)		Vcc1:OFF, IN1 = 3.5V							3	3.0	—	—	V
【POWER SUPPLY】(note 2)													
Operating Power Supply 2	Vcc2									5.75	5.9	12 (note3)	V
Operating Current 2	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	ΔVo-Vcc2	Vcc2 = 5.75 to 12V, Io = 50mA								—	—	300	mA
Load Regulation	ΔVo-Io	Vcc2 = 5.9V, Io = 0 to 50mA								—	—	300	mA
REG-SW (ON)	Reg-ON									3.0	—	5.0	V
REG-SW (OFF)	Reg-OFF									0	—	2.0	V

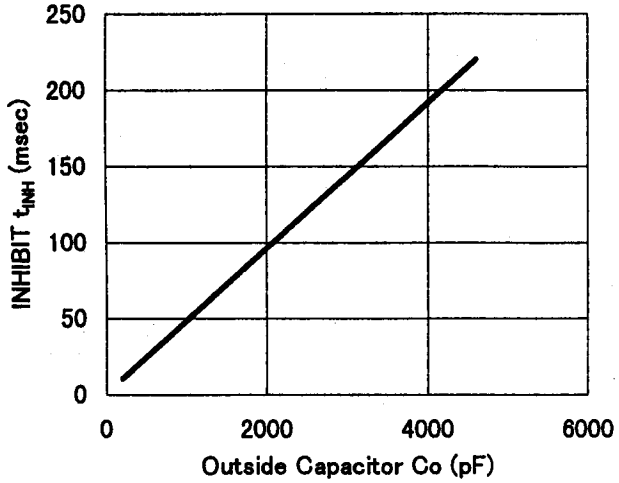
(note 2) The Vref in Power Supply block is the Vcc1, so that its specification is guaranteed at Vcc1 = 5V.

(note 3) The Supply voltage of Vcc2 must be chose less then power dissipation.

■ TYPICAL CHARACTERISTICS

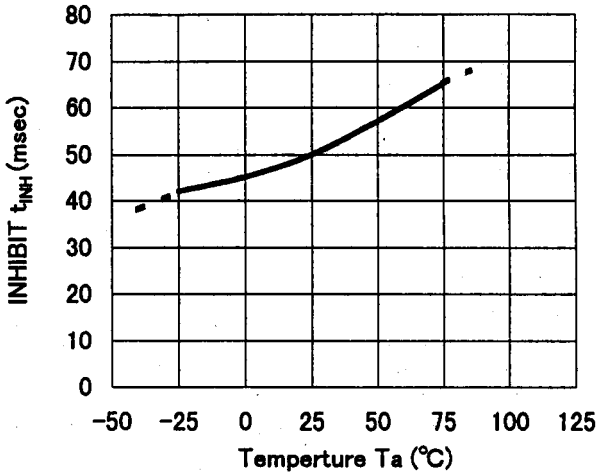
INHIBIT Time vs, Outside Capacitor

(Vcc1=5V,Ta=25°C)



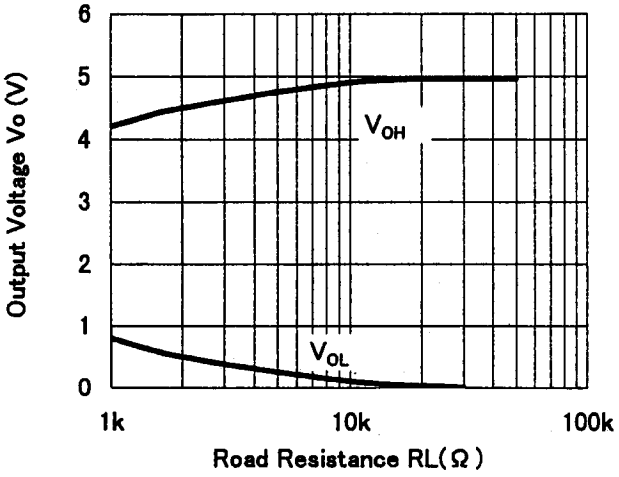
INHIBIT Time vs. Temperture

(Vcc1 = 5V, C = 1000pF)



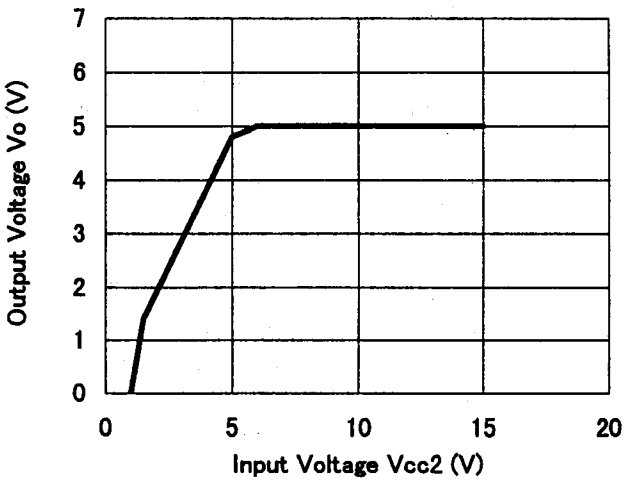
Out2 Output Voltage vs. Load Resistance

(Vcc1=IN2=5V,Ta=25°C)



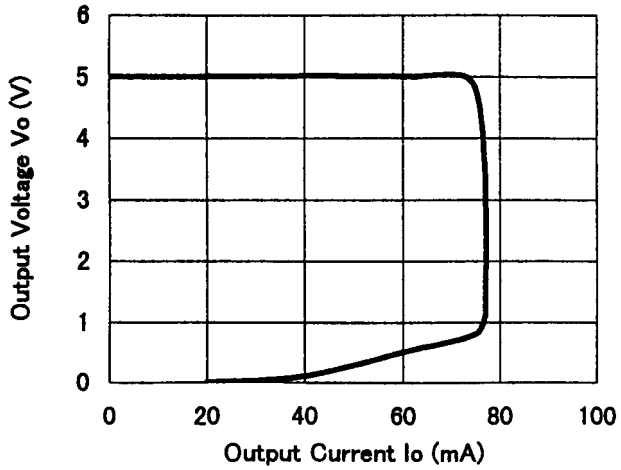
Regulator Output Characteristics

(Vcc1=5V,R_L=100Ω,Ta=25°C)



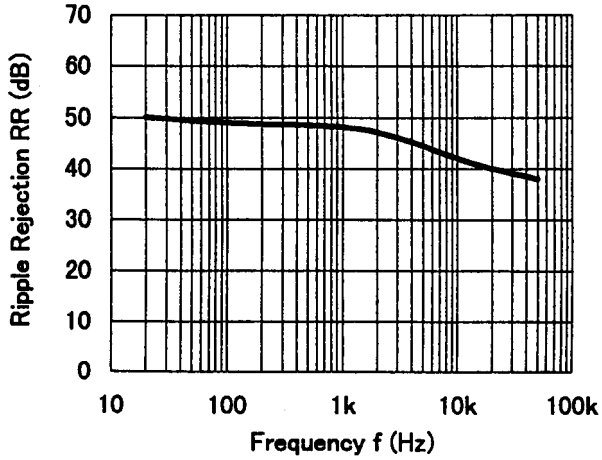
Regulator Load Characteristics

(Vcc1=5V,Vcc2=5.9V,Ta=25°C)



Ripple Rejection

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



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