

REMOTE-CONTROL INTERFACE

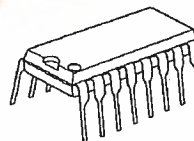
GENERAL DESCRIPTION

The NJM2145 is a remote-control interface for television, VCR, receiver, and others.

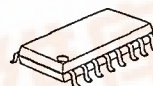
Some items are connected through the OUT2 (two-way) terminal, then all of items are controlled when the control signal from any remote-control commander is transmitted to one of items.

If a few OUT2 terminals are open, the NJM2145 operates normally by its error protection circuit.

PACKAGE OUTLINE



NJM2145D



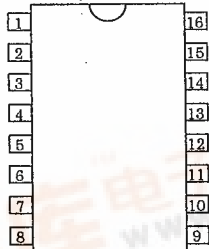
NJM2145M

FEATURES

- Operating Voltage (4.75V~5.25V)
- Internal Error Protection Circuit against open OUT2 terminal
- OUT2 (Two-Way) × 3
- Internal Output Short Protection
- Bipolar Technology
- Package Outline DIP16, DMP16

PIN CONFIGURATION

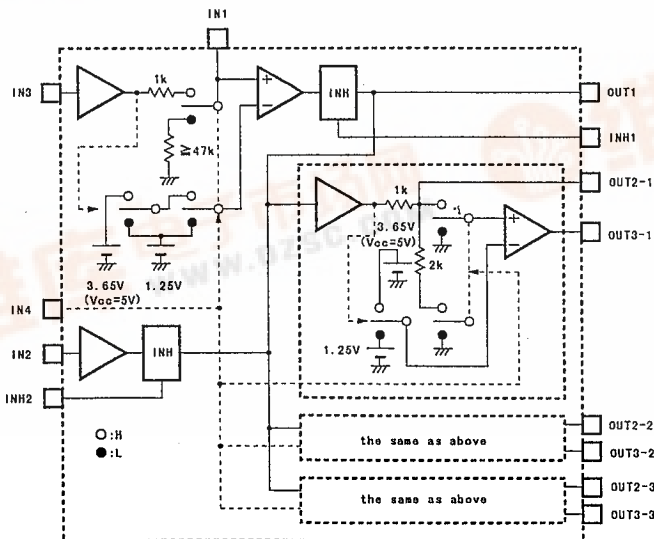
D, M Type
(Top View)



PIN FUNCTION

- | | |
|-------------------|------------|
| 1. V ⁺ | 9. OUT2-3 |
| 2. OUT1 | 10. OUT2-2 |
| 3. IN4 | 11. OUT2-1 |
| 4. IN3 | 12. NC |
| 5. IN2 | 13. IN1 |
| 6. OUT3-1 | 14. INH2 |
| 7. OUT3-2 | 15. INH1 |
| 8. OUT3-3 | 16. GND |

BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	7	V
Power Dissipation	P _d	(DIP16) 700 (DMP16) 300	mW
Operating Temperature Range	Topr	-20~75	°C
Storage Temperature Range	Tstg	-40~125	°C

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

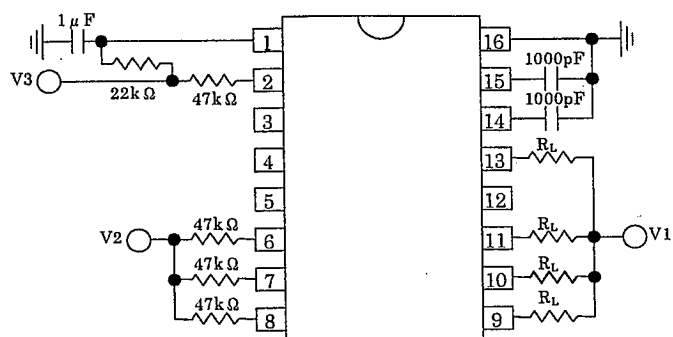
PARAMETER	SYMBOL	TEST CONDITION							MIN.	TYP.	MAX.	UNIT
		IN2	IN3	IN4	V1	V2	V3	RL				
Operating Supply Voltage	Vopr	-	-	-	-	-	-	-	4.75	5.0	5.25	V
Operating Current1	Icc1	1.5	1.5	1.5	0.0	0.0	Open	47kΩ	-	2.0	4.0	mA
Operating Current2	Icc2	3.5	3.5	3.5	0.0	0.0	Open	1kΩ	-	10	13	mA
IN1-High Electric Potential Output Voltage1	IN1-H1	-	3.5	3.5	5.0	-	-	1kΩ	3.5	-	5.0	V
IN1-Low Electric Potential Output Voltage1	IN1-L1	-	1.5	3.5	5.0	-	-	1kΩ	2.0	2.5	3.0	V
IN1-High Electric Potential Output Voltage2	IN1-H2	-	3.5	3.5	0.0	-	-	1kΩ	2.0	2.5	3.0	V
IN1-Low Electric Potential Output Voltage2	IN1-L2	-	1.5	3.5	0.0	-	-	1kΩ	0.0	-	1.5	V
IN1-Input Impedance	IN1-Imp	-	3.5	1.5	5.0	-	-	47kΩ	47	80	120	kΩ

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ELECTRICAL CHARACTERISTICS (V⁺=5V, T_a=25°C)

PARAMETER	SYMBOL	TEST CONDITION							MIN.	TYP.	MAX.	UNIT
		IN2	IN3	IN4	V1	V2	V3	RL				
OUT1-High Electric Potential Output Voltage1	OUT1-H1	-	3.5	3.5	1.0	-	Open	1kΩ	3.5	-	5.0	V
OUT1-High Electric Potential Output Voltage2	OUT1-H2	-	1.5	3.5	INH*	-	0.0	1kΩ	3.5	-	5.0	V
OUT1-Low Electric Potential Output Voltage	OUT1-L	-	3.5	3.5	4.0	-	Open	1kΩ	0.0	-	1.5	V
OUT2-High Electric Potential Output Voltage1	OUT2-H1	INH*	-	3.5	-	5.0	Open	1kΩ	3.5	4.0	4.5	V
OUT2-Low Electric Potential Output Voltage1	OUT2-L1	1.5	-	3.5	-	5.0	Open	1kΩ	1.5	2.0	2.5	V
OUT2-High Electric Potential Output Voltage2	OUT2-H2	INH*	-	3.5	-	0.0	Open	1kΩ	1.5	2.0	2.5	V
OUT2-Low Electric Potential Output Voltage2	OUT2-L2	1.5	-	3.5	-	0.0	Open	1kΩ	0.0	-	1.5	V
OUT2-High Electric Potential Output Voltage3	OUT2-H3	1.5	-	1.5	-	0.0	1.5	47kΩ	3.5	-	5.0	V
OUT2-Low Electric Potential Output Voltage3	OUT2-L3	1.5	-	1.5	-	5.0	Open	47kΩ	0.0	-	1.5	V
OUT3-High Electric Potential Output Voltage	OUT3-H	3.5	-	3.5	4.0	0.0	Open	47kΩ	3.5	-	5.0	V
OUT3-Low Electric Potential Output Voltage1	OUT3-L1	1.5	-	3.5	1.0	5.0	Open	47kΩ	0.0	-	1.5	V
OUT3-Low Electric Potential Output Voltage2	OUT3-L2	3.5	-	1.5	1.0	5.0	Open	47kΩ	0.0	-	1.5	V
IN1, OUT2 Input Threshold Voltage1	V _{TH1-1}	-	-	1.5	-	-	-	-	1.0	1.3	2.0	V
IN1, OUT2 Input Threshold Voltage2	V _{TH1-2}	-	3.5	3.5	-	-	-	-	3.0	3.65	4.5	V
IN2, IN3, IN4 Input Threshold Voltage	V _{TH2}	-	-	-	-	-	-	-	2.0	2.5	3.0	V
Inhibit Time1 (IN1→OUT1)	INH1	-	1.5	3.5	INH*	-	0.0	1kΩ	20	60	100	msec
Inhibit Time2 (IN2→OUT2)	INH2	INH*	-	3.5	-	5.0	0.0	1kΩ	20	60	100	msec
Slew Switch	SS	V ⁺ =0V, IN1=3.5V						47kΩ	3.5	-	4.0	V

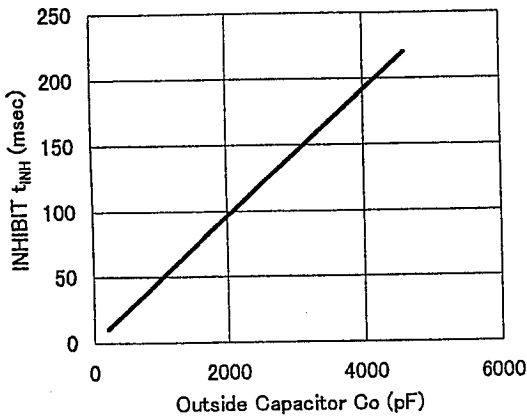
■ TEST CIRCUIT



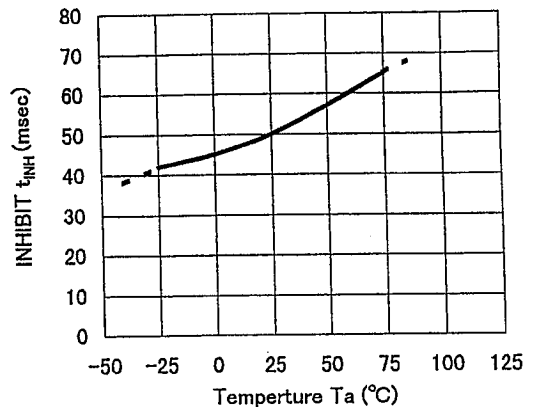
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TYPICAL CHARACTERISTICS

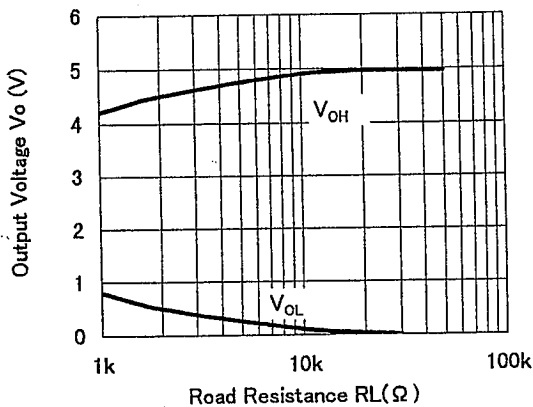
INHIBIT Time vs. Outside Capacitor
($V_{cc1}=5V, T_a=25^\circ C$)



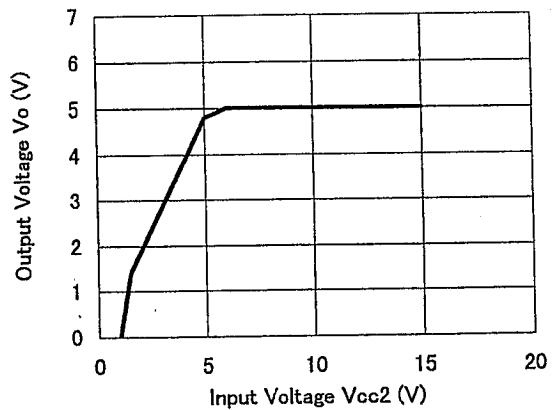
INHIBIT Time vs. Temperature
($V_{cc1}=5V, C=1000pF$)



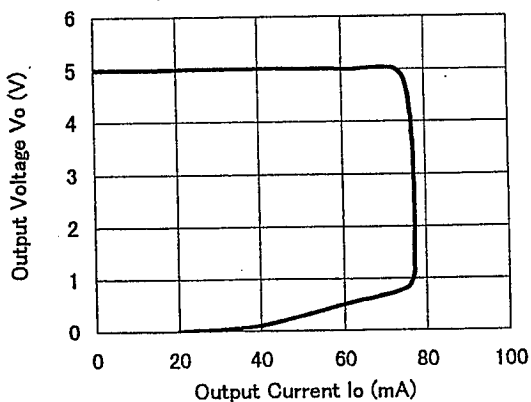
Out2 Output Voltage vs. Load Resistance
($V_{cc1}=IN2=5V, T_a=25^\circ C$)



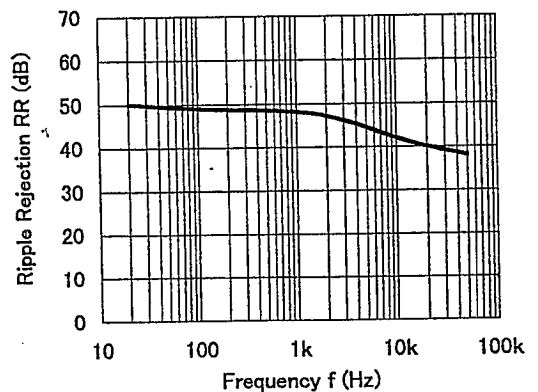
Regulator Output Characteristics
($V_{cc1}=5V, R_L=100\Omega, T_a=25^\circ C$)



Regulator Load Characteristics
($V_{cc1}=5V, V_{cc2}=5.9V, T_a=25^\circ C$)



Ripple Rejection
($V_{cc1}=5V, V_{cc2}=5.9V+300mV_{rms}, R_L=100\Omega, T_a=25^\circ C$)



NJM2145

MEMO

[CAUTION]
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