

DIGITAL OUTPUT PHOTO REFLECTOR

■ GENERAL DESCRIPTION

The NJL5802K is thin package digital output type photo reflector which consist of New JRC original designed one chip photo receiving IC and high output LED.

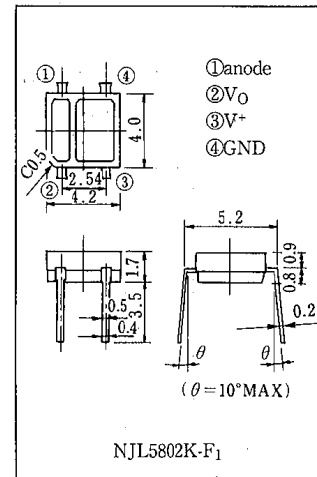
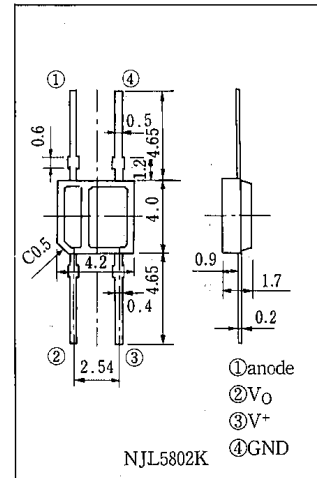
■ FEATURES

- Normally off type
- With schmitt trigger circuit
- TTL Compatible
- Built-in visible light cut-off filter.

■ APPLICATIONS

- Tape end sensor
- Reel rotation sensor
- Paper detector, Paper end sensor
- Bar code reader
- Sensor of FDD, Robot, manufacturing installation, etc.

■ OUTLINE (typ.) Unit: mm

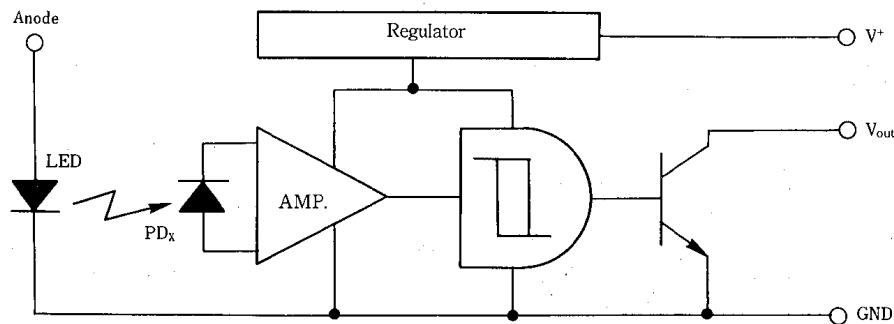


■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Emitter			
Forward Current (Continuous)	I _F	50	mA
Reverse Voltage (Continuous)	V _R	6	V
Power Dissipation	P _D	75	mW
Detector			
Supply Voltage	V ⁺	16	V
High Level Output Voltage	V _{OH}	16	V
Low Level Output Current	I _{OL}	50	mA
Power Dissipation	P _O	110	mW
Coupler			
Total Power Dissipation	P _{tot}	130	mW
Operating Temperature	T _{opr}	-20~+85	°C
Storage Temperature	T _{stg}	-30~+100	°C
Soldering Temperature	T _{sol}	260	°C

(5sec. 1.5mm from body)

■ BLOCK DIAGRAM

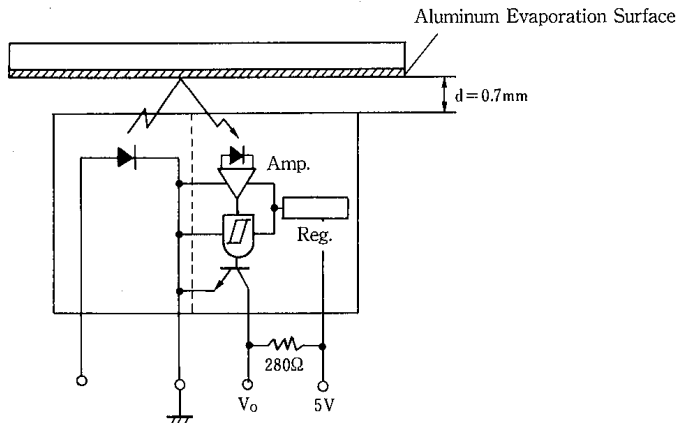


ELECTRO-OPTICAL CHARACTERISTICS (Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Emitter						
Forward Voltage	V_F	$I_F = 10\text{mA}$	—	1.1	1.3	V
Reverse Current	I_R	$V_R = 6\text{V}$	—	—	1.0	μA
Capacitance	C_i	$V_R = 0\text{V}, f = 1\text{MHz}$	—	25	—	pF
Detector						
Supply Voltage Range	V^+		3.5	—	15	V
Low Level Output Voltage	V_{OL}	$I_{OL} = 16\text{mA}, V^+ = 5\text{V}, I_F = 10\text{mA}, d = 0.7\text{mm}$	—	0.2	0.5	V
High Level Output Current	I_{OH}	$V_O = V^+ = 15\text{V}, I_F = 0\text{mA}$	—	—	100	μA
Low Level Supply Current	I_{CCL}	$V^+ = 5\text{V}, I_F = 10\text{mA}, d = 0.7\text{mm}$	—	3	10	mA
High Level Supply Current	I_{CCH}	$V^+ = 5\text{V}, I_F = 0\text{mA}$	—	4.5	10	mA
Coupled						
H→L Threshold Input Current	I_{FHL}	$V^+ = 5\text{V}, R_L = 280\Omega, d = 0.7\text{mm}$	—	—	10	mA
Hysteresis	I_{FLH}/I_{FHL}	$V^+ = 5\text{V}, R_L = 280\Omega, d = 0.7\text{mm}$	—	0.8	—	
H→L Delay Time	t_{PHL}	$V^+ = 5\text{V}, R_L = 280\Omega, I_F = 10\text{mA}, d = 0.7\text{mm}$	—	10	—	μs
L→H Delay Time	t_{PLH}	$V^+ = 5\text{V}, R_L = 280\Omega, I_F = 10\text{mA}, d = 0.7\text{mm}$	—	5	—	μs
Fall Time	t_f	$V^+ = 5\text{V}, R_L = 280\Omega, I_F = 10\text{mA}, d = 0.7\text{mm}$	—	0.1	—	μs
Rise Time	t_r	$V^+ = 5\text{V}, R_L = 280\Omega, I_F = 10\text{mA}, d = 0.7\text{mm}$	—	0.1	—	μs

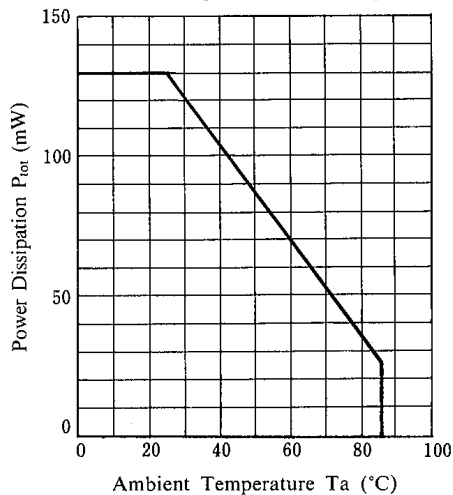
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MEASURING SPECIFICATION FOR THRESHOLD INPUT CURRENT

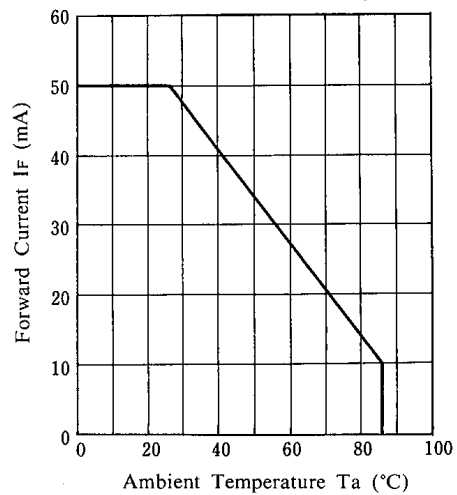


MAXIMUM RATING CURVES

Power Dissipation vs. Temperature



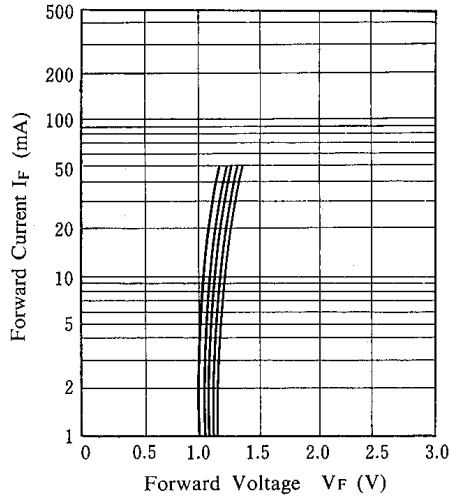
Forward Current vs. Temperature



■ TYPICAL CHARACTERISTICS

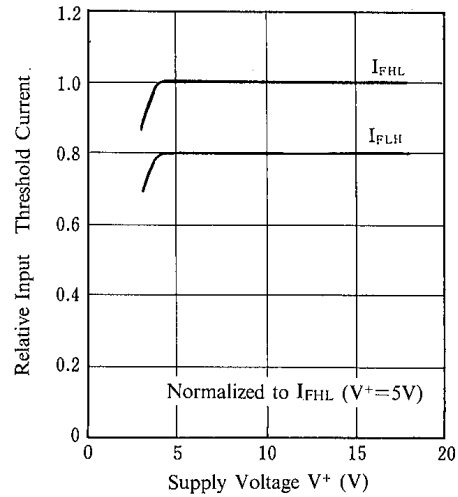
Forward Current vs. Forward Voltage

($T_a=85^\circ\text{C}, 50^\circ\text{C}, 25^\circ\text{C}, 0^\circ\text{C}, -20^\circ\text{C}$)



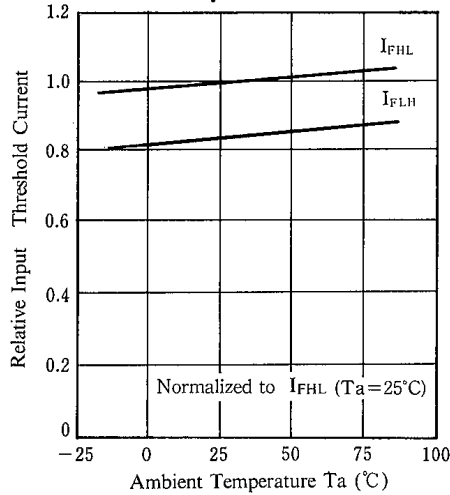
Input Threshold Current vs. Supply Voltage

($T_a=25^\circ\text{C}$)



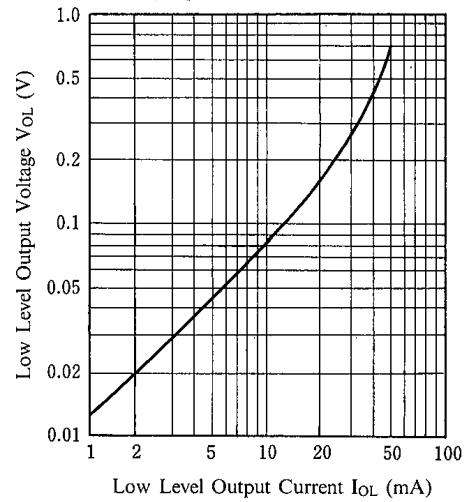
Input Threshold Current vs. Temperature

($V^+=5\text{V}$)



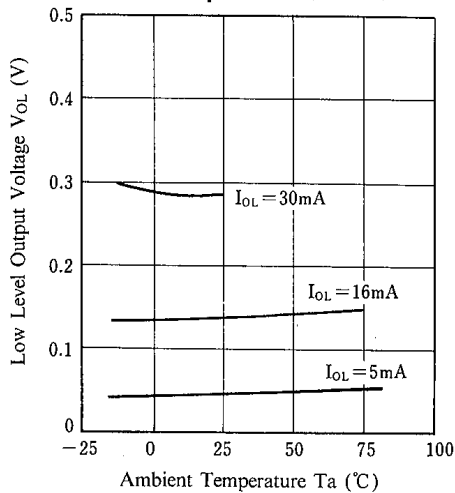
Low Level Output Voltage vs. Low Level Output Current

($V^+=5\text{V}, T_a=25^\circ\text{C}$)

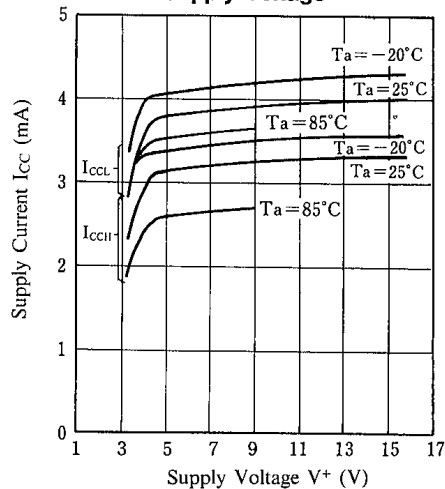


Low Level Output Voltage vs. Temperature

($V^+=5\text{V}$)



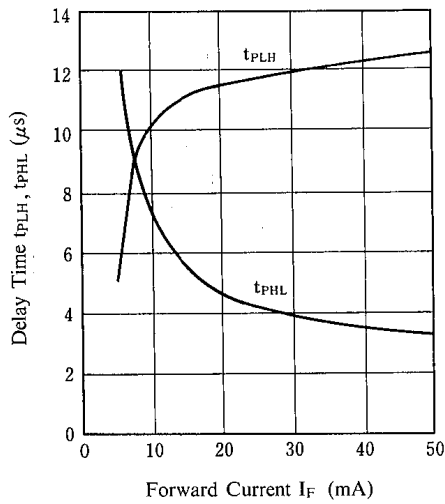
Supply Current vs. Supply Voltage



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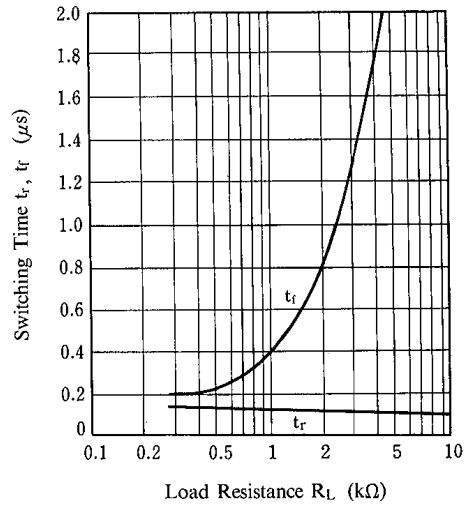
Delay Time vs. Forward Current

($V^+=5V$, $R_L=280\Omega$, $T_a=25^\circ C$)



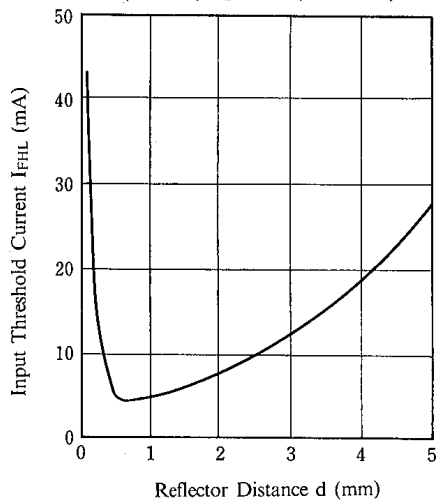
Switching Time vs. Resistance

($V^+=5V$, $I_F=10mA$, $T_a=25^\circ C$)

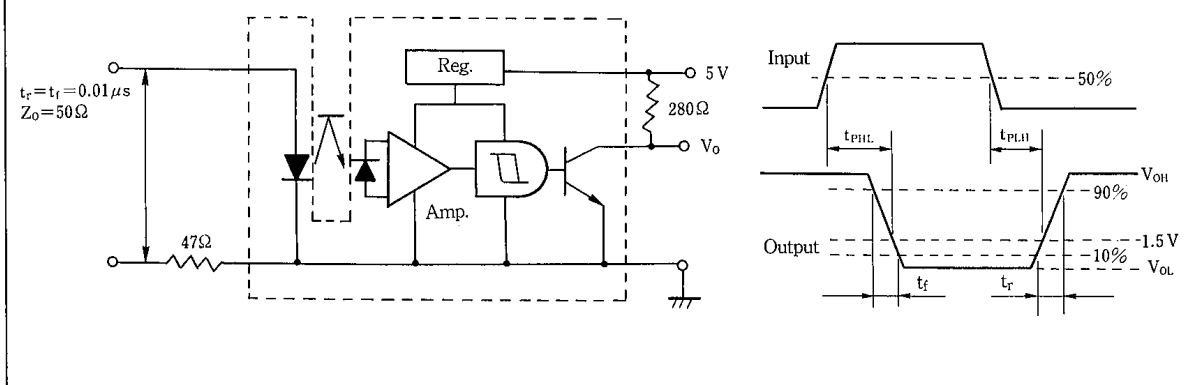


Input Threshold Current vs. Distance

($V^+=5V$, $R_L=280\Omega$, $T_a=25^\circ C$)



Measuring Circuit for Response Time



NJL5802K

MEMO

[CAUTION]

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New Japan Radio Co., Ltd.