

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

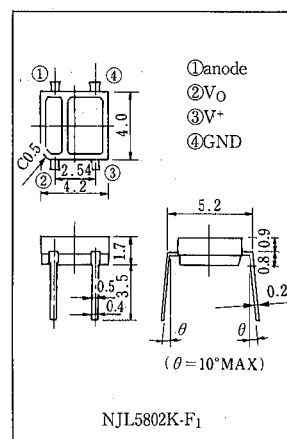
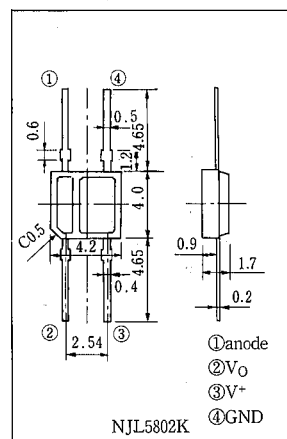
- Tape end sensor
- Reel rotation sensor
- Paper detector, Paper end sensor
- Bar code reader
- Sensor of FDD, Robot, manufacturing installation, etc.

■ ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$)

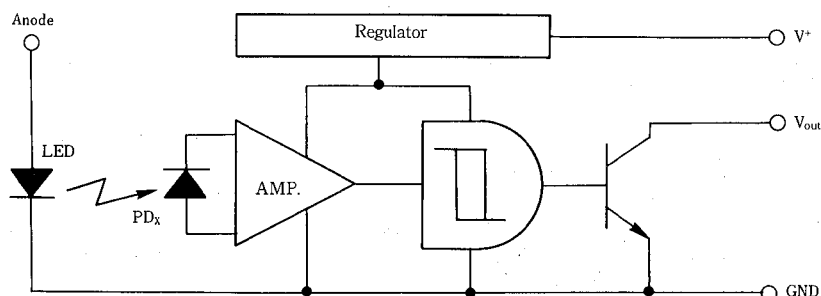
PARAMETER	SYMBOL	RATINGS	UNIT
Emitter			
Forward Current (Continuous)	I_F	50	mA
Reverse Voltage (Continuous)	V_R	6	V
Power Dissipation	P_D	75	mW
Detector			
Supply Voltage	V^+	16	V
High Level Output Voltage	V_{OH}	16	V
Low Level Output Current	I_{OL}	50	mA
Power Dissipation	P_O	110	mW
Coupler			
Total Power Dissipation	P_{tot}	130	mW
Operating Temperature	T_{opr}	$-20 \sim +85$	$^{\circ}\text{C}$
Storage Temperature	T_{sig}	$-30 \sim +100$	$^{\circ}\text{C}$
Soldering Temperature	T_{sol}	260	$^{\circ}\text{C}$

(5sec. 1.5mm from body)

■ OUTLINE (typ.) Unit: mm



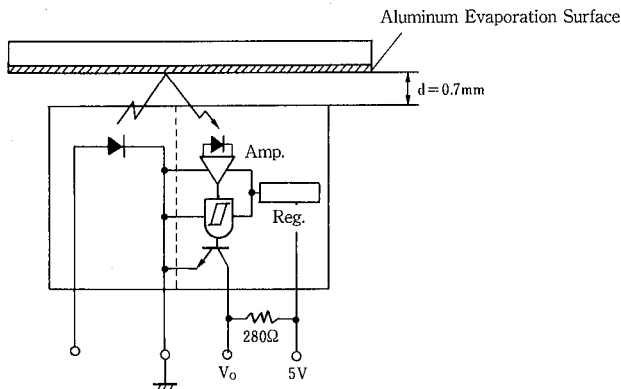
■ BLOCK DIAGRAM



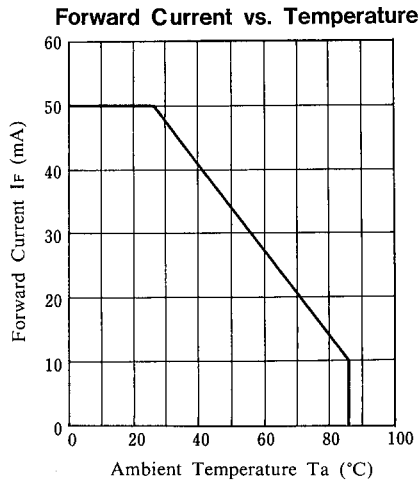
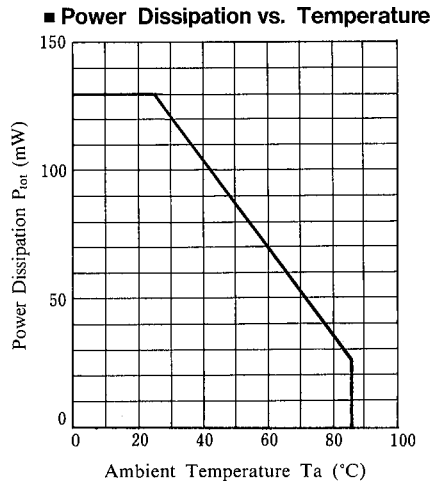
■ ELECTRO-OPTICAL CHARACTERISTICS (Ta=25°C)

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_1	$V_R=0\text{V}, f=1\text{MHz}$	—	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_{FHL}/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

■ MEASURING SPECIFICATION FOR THRESHOLD INPUT CURRENT



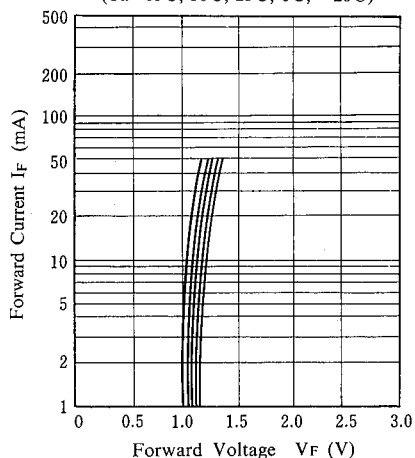
■ MAXIMUM RATING CURVES



■ TYPICAL CHARACTERISTICS

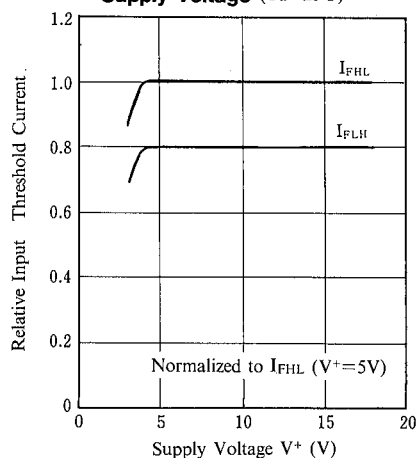
Forward Current vs. Forward Voltage

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

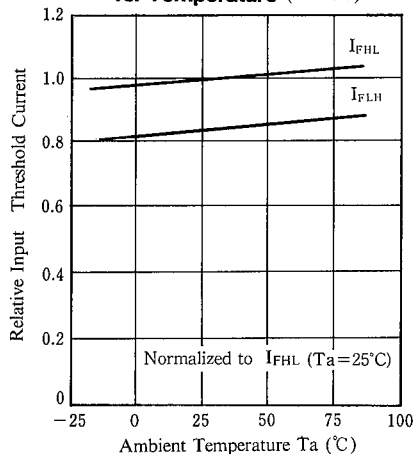


Input Threshold Current vs. Supply Voltage

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

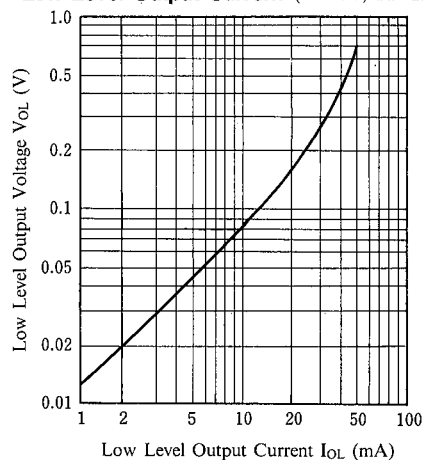


Input Threshold Current vs. Temperature
($V^+ = 5\text{V}$)

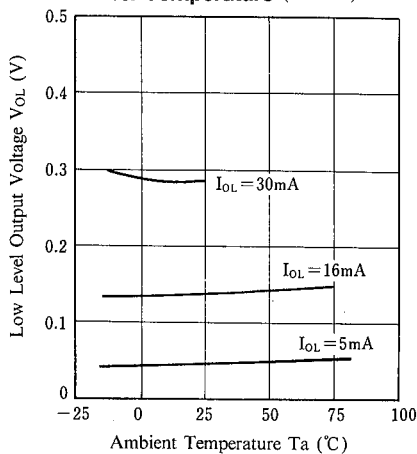


Low Level Output Voltage vs. Low Level Output Current

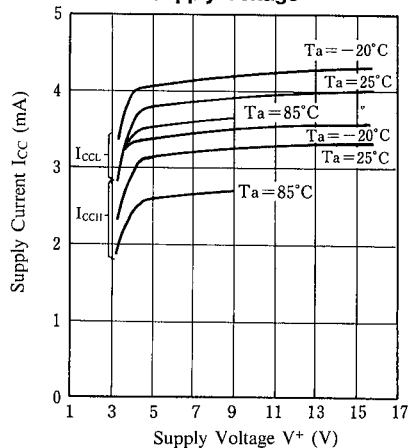
($V^+ = 5\text{V}, T_a = 25^\circ\text{C}$)



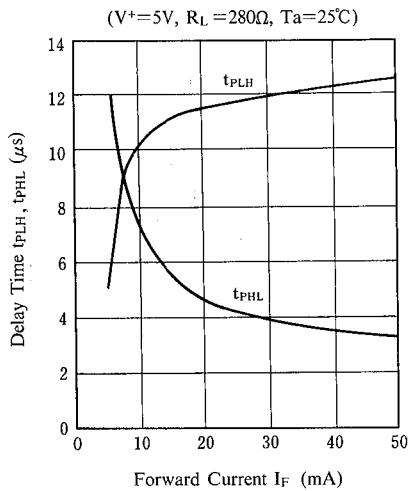
Low Level Output Voltage vs. Temperature
($V^+ = 5\text{V}$)



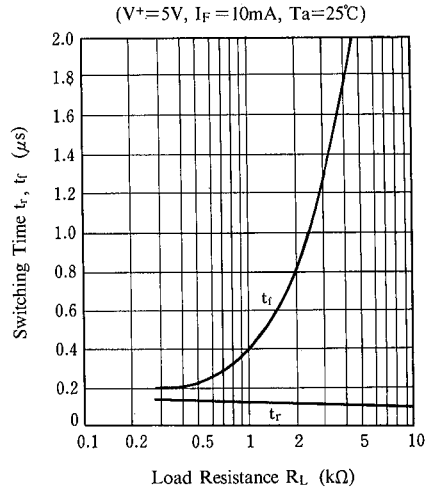
Supply Current vs. Supply Voltage



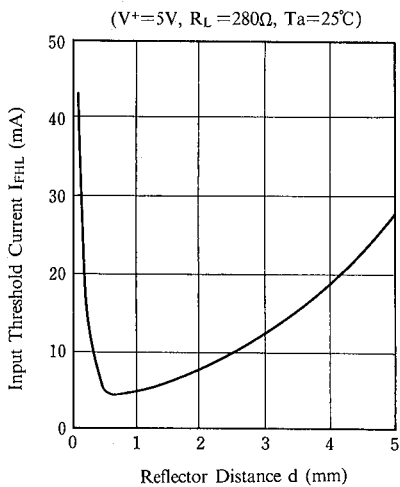
Delay Time vs. Forward Current



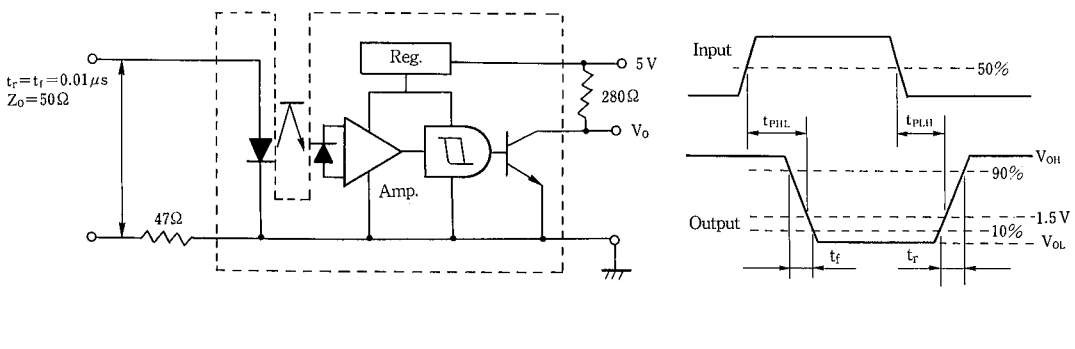
Switching Time vs. Resistance



Input Threshold Current vs. Distance



Measuring Circuit for Response Time



MEMO

[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 including the industrial rights.