

規格承認書

送樣日期	•	
料号	:	KGK-ARM-NS7556A-Z1
客戶料号	•	
客戶名稱	:	

ALL-BRITE簽程:		客戶確認簽程:		
工程:	龚庆勇	工程:		
品管:	甘帅	品管:		
日期:	2023/4/25			

KGKLIGHT

KGK-ARM-NS7556A-Z1

Description

TheKGK- ARM-NS7556A-Z1 is miniaturized infrared receivers for remote control and other applications requiring improved ambient light rejection.

The separate PIN diode and preamplifier IC are assembled on a single leadframe.

The epoxy package contains a special IR filter.

This module has excellent performance even in disturbed ambient light applications and provides

Features

- 1. Photo detector and preamplifier in one package
- 2. Internal filter for PCM frequency
- 3. High immunity against ambient light
- 4. Improved shielding against electric field disturbance
- 5. 2.7-Volt supply voltage; low power consumption
- 6. TTL and CMOS compatibility

Applications

It can be used for TVs $\$ VTRs $\$ audio equipment air conditioners $\$ car stereo radio $\$ toys $\$ home

computers and all other equipment requiring remote control.

Code information



Protocol	Suitable	Protocol	Suitable
NEC	Yes	Sony 15 Bit	No
RC5	Yes	Sony 20 Bit	No
RC6	Yes	Toshiba	Yes
JVC	No	RCA	Yes
Matsushita	No	Sharp	Yes
Mitsubishi	Yes	Sony 12 Bit	No
RCMM	Yes	XMP	Yes
RECS-80	Yes	Continuous Code(less than t _{Burst_max})	Yes

BLOCK DIAGRAM





Absolute Maximum Ratings

@ Ta=25°C

Item	Symbol	Ratings	Unit	Remark
Supply voltage	Vcc	2.7 ~ 5.5	V	
Supply Current / Output Current	Iout	2.5	mA	
Operating temperature	T _{opr}	$-20 \sim + 80$	°C	
Storage temperature	T _{stg}	-25 ~ + 85	°C	
Reflow Soldering Temperature (Pb Free	T _{sd}	260	°C	Maximum 10 seconds
Moisture Sensitivity Levels	Level 4 ($\leq 30^{\circ}$ C / 60% RH 72hours)			

Electro-optical characteristics

Parameter	Symbol	Min.	Тур.	Max.	Unit	Remarks
Supply Voltage	Vcc	2.7	-	5.5	V	
Current consumption	Icc	-	0.27	0.40	mA	Under no signal
Response wavelength*3	λp	-	940	-	nm	
B.P.F Center Frequency	fo	-	56.7	-	KHz	
Output form	-	acti	ve low ou	tput		
H level output voltage *3	V ₀ h	Vcc-0.4	-	-	V	
L level output voltage*3	V ₀ l	-	0.2	0.4	V	
H level output pulse width*3	Twh	400	-	800	μs	Burst Wave = 600μ s
L level output pulse width*3	Twl	400	-	800	μs	Period = 1.2 ms
Distance between emitter & detector	$L_1 (\boldsymbol{\theta} = 0^0)$	_	32	_	m	2001 UX IE= $400 \text{ m} \Delta$ Note 1) 2)
Distance between emitter & detector	L ₂ ($\theta = 30_{\circ}$)	-	25	-	m	

Note : *3. It specifies the maximum distance between emitter and detector that the output waveform satisfies the standard(A,3) under the conditions below against the standard transmitter

1) Measuring place:: Indoor without extreme reflection of light

2) Ambient light source : Detecting surface illumination shall be irradiate 200±50Lux under ordinary white fluorescence lamp without high frequency lightning

3) Standard transmitter: Burst wave indicated in drawing(A) of standard transmitter shall be arranged to

1.6Vp-p under the measuring circuit specified in drawing(A,3)

ESD Test Results

Parameter	Conditions	Specification	Results
Machine Model	C=200 _P F, R=0Ω	Min ±200∨	>±200V
Human Body Mo	C=100 _P F,	Min ±2000	>±2000V
del	R=1.5kΩ	V	
Charged Device	R=100mΩ, 1	Min	>±400V
Model	Ω	±400∨	



Test Method

A. Standard Transmitter





Fig 2. Standard Transmitter Measurement circuit

B. Detection Length Test



 $\boldsymbol{\theta}$: indicates horizontal and vertical directions



KGK-ARM-NS7556A-Z1

C . Pulse Width Test



Application Circuit

ARM-NS7556AVZ-S1





Dimensions in mm



P.C.B. Layout





Note

- 1. Unit mm
- 2. Unspecified tolerance : ± 0.3mm
- 3. Reference dimension : ()
- 4. Electrode base material : Cu
- 5. Electrode terminal finish : Sn plating
- 6. Mold resin : optical filter Epoxy
- 7. Pin configuration (1 GND (2 VCC (3 OUT (4 GND



Reliability

Parameter	Rating				
High Temperature *1	Ta= + 80°C, Vcc=5V	t=240H			
High Temperature / High Humidity *1	Ta= + 85°C, 85%RH, Vcc=5V	t=240H			
Low Temperature *1	Ta= - 30°C, Vcc=5V	t=240H			
Heat Cycle *1	-25°C(0.5H) ~ + 85°C(0.5H) 20cycle				
Dropping *2	Test devices shall be dropped 3 time naturally onto hard wooden board from a 75cm height position				

NOTE 1. Distance between emitter & detector specifies maximum distance that output wave form satisfies the standard under the conditions below against the standard transmitter .

1)Measuring place : Indoor without extreme reflection of light .

- 2)Ambient light source: Detecting surface illumination shall be 200±50Lux under ordinary hite fluorescense lamp of no high frequency lighting.
- 3)Standard transmitter: burst wave indicated in Fig1.of standard transmitter shall be arranged to 50mVp-p under the measuring circuit specified in Fig2.

NOTE 2. (electro-optical charactistics) shall be satisfied after leaving 1 hours in the normal temperature .

NOTE 3. (electro-optical charactistics) shall be satisfied and 90% or more of the solder area is covered with solder.

Inspection standard

1. Among electrical characteristics, total number shall be inspected on items blow.

- 1-1 front distance between emitter & detector
- 1-2 Current consumption
- 1-3 H level output voltage
- 1-4 L level output voltage

2. Items except above mentioned are not inspected particularly , but shall fully satisfy

CAUTION (When use and storage of this device)

- 1. Store and use where there is no force causing transformation or change in quality
- 2. Reflow maximum temperatuer is 260+0/-5 °C within max 10 seconds within 72 hours From 30 °C/60% humidity
- 3. From 30 °C/60% humidity there is not the reflowing problem within 72 hours, but when the temperature
- condition is higher or 24 hours lapse after opening, product guideline is encouraged to dry from $60^{\circ}C+5^{\circ}C$, $\leq 5^{\circ}$ RH during 96 hours which are a temperatre where has not become the damage of reel packing.
- 4. Do not wash this device. Wipe the stains of diode side with a soft cloth.
- 5. The shield case shall be grounded on the PCB pattern. There are two cases, one is that shield case

If the receiver modules of shield case is not becoming ground connection, there is a possibility of being weak in the EMI(Electronic Microwave Interperence) condition.

6. Solder pad within the condition of ratings. after soldering do not add extrorse force.

7. Put decoupling device between Vcc and GND for reduce the noise from power supply line.

recommand Vcc-GND 47 μ F and Vcc- 100 Ω . Decoupling device should be near receiver modules.

8. The decrease in distance, the output noise, the malfunction, etc. might occur because of a surrounding electromagnetic environment.

9. To prevent static electricity damage to the Pre-AMP make sure that the human body, the soldering iron is connected to ground before using

10. This device has to control of static electricity

guarantees a R123V-10E up to M.M 200V , HBM 2KV





M.M = MACHINE MODEL(Resistance: 0KΩ Capacitor: 200pF) HBM = HUMAN BODY MODEL(Resistance: 1.5kΩ Capacitor: 100pF)

Reflow

1. Regarding preheat and main heating, please set the temperature according to the reflow temperature profile as below.

2. Even it is within the temperature profile condition as below, the disconnection of wire in the package might be caused by the stress join the package due to the PCB's curving and bending.



Please take care about the condition of reflow machine when use.

Recommended lead free reflow soldering temperature profile.

3. Please do not pile something on the product at reflow soldering because the transformation of the package resin may caused.

4. When you do the reflow soldering twice, please process second reflow soldering within 8 hours after finish the first soldering

5. Handing after reflow should be done only after the work surface has been cooled off.

Manual Soldering

1. Use a soldering iron of 25W or less. Adjust the temperature of the soldering iron below 260°C.

Others

1. This device is not design to endure radiative rays and heavily charged particles .

2.In case where any trouble or questions arise, both parties agress to make full discussion covering the said problem .

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TAPING

Taping specification • dimensions • product unsertion



Reel specification • dimensions Material : PS Conductivity The minimum packing quantity : 2,400pcs/reel







REV: A1

PACKING



卷盘:2400PCS/卷盘

铝箔袋:1卷盘 (2400PCS) /包

外箱:14包 (33600PCS) /箱