



Features

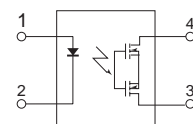
- SOP package 4 Pin type in miniature design (4.4X4.3X2.1mm/.173X.169X.083inch)
- Low driver power requirements (TTL/CMOS Compatible)
- No moving parts
- High reliability
- Arc-Free with no snubbing circuits
- 1500Vrms Input/Output isolation
- Tape & Reel version available



SOP-4

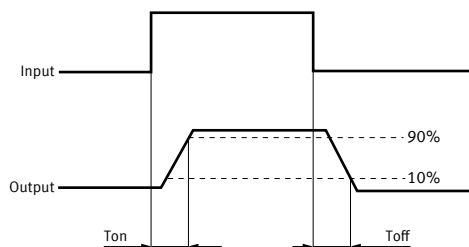
Applications

- Telecommunications (PC,Electronic notepad)
- Measuring and Testing equipment
- Industrial control
- Security equipments
- High speed inspection machine



1. LED Anode
2. LED Cathode
3. Drain(MOSFET)
4. Drain(MOSFET)

*Turn on/Turn off time



Types

| Category | Output rating | | Part No. | Packing quantity |
|----------|---------------|--------------|----------|--------------------|
| | Load voltage | Load current | SOP | Tape and reel |
| AC/DC | 400 V | 0.12A | AQY214S | 1-reel: 2,000 pcs. |



Absolute Ratings($T_{amb} = 25^{\circ}\text{C}$)

| Item | | Symbol | Value | Units | Note |
|---------------------------|--------------------------|------------|-------------|--------------------|---|
| Input | Continuous LED Current | I_F | 50 | mA | |
| | Peak LED Current | I_{FP} | 1000 | mA | $f=100\text{Hz}$, $\text{duty}=1\%$ |
| | LED Reverse Voltage | V_R | 5 | V | |
| | Input Power Dissipation | P_{In} | 75 | mW | |
| Output | Load Voltage | V_L | 400 | V(AC peak or DC) | |
| | Load Current | I_L | 120 | mA | |
| | Peak Load Current | I_{Peak} | 0.6 | A | 100ms(1 pulse) |
| | Output Power Dissipation | P_{out} | 300 | mW | |
| Total Power Dissipation | | P_T | 350 | mW | |
| I/O Breakdown Voltage | | $V_{I/O}$ | 1500 | Vrms | RH=60%, 1min |
| Operating Temperature | | T_{Opr} | -40 to +85 | $^{\circ}\text{C}$ | |
| Storage Temperature | | T_{Stg} | -40 to +100 | $^{\circ}\text{C}$ | |
| Pin Soldering Temperature | | T_{Sol} | 260 | $^{\circ}\text{C}$ | 10 sec max. |

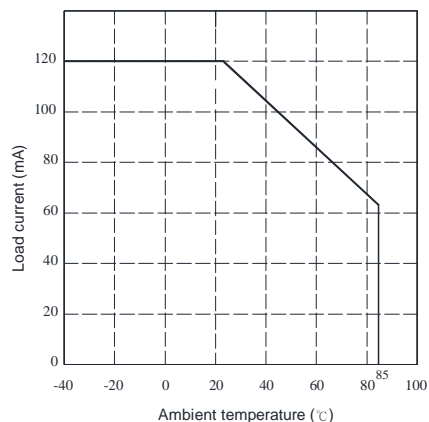
Electrical Characteristics Ratings at 25°C

| Item | | Symbol | Min. | Typ. | Max. | Units | Conditions |
|------------------|---------------------------|--------------------|-----------|------|------|---------------|--|
| Input | LED Forward Voltage | V_F | | 1.2 | 1.4 | V | $I_F=10\text{mA}$ |
| | Operation LED Current | $I_{F\text{ On}}$ | | 0.5 | 3.0 | mA | |
| | Recovery LED Current | $I_{F\text{ Off}}$ | | 0.35 | 0.5 | mA | |
| | Recovery LED Voltage | $V_{F\text{ Off}}$ | 0.7 | | | V | |
| Output | On-Resistance | R_{On} | | 15 | 20 | Ω | $I_F=5\text{mA}$, $I_L=100\text{mA}$, Time to flow is within 1 sec. |
| | Off-State Leakage Current | I_{Leak} | | | 0.01 | μA | $V_L=\text{Rating}$ |
| | Output Capacitance | C_{Out} | | 45 | | pF | $V_L=0$, $f=1\text{MHz}$ |
| Transmis sion | Turn-On Time | T_{On} | | 0.12 | 0.3 | ms | $I_F=5\text{mA}$, $I_L=100\text{mA}$, |
| | Turn-Off Time | T_{Off} | | 0.10 | 0.2 | ms | |
| Coupled | I/O Isolation Resistance | $R_{I/O}$ | 10^{10} | | | Ω | DC500V |
| | I/O Capacitance | $C_{I/O}$ | | 0.8 | 1.5 | pF | $f=1\text{MHz}$ |

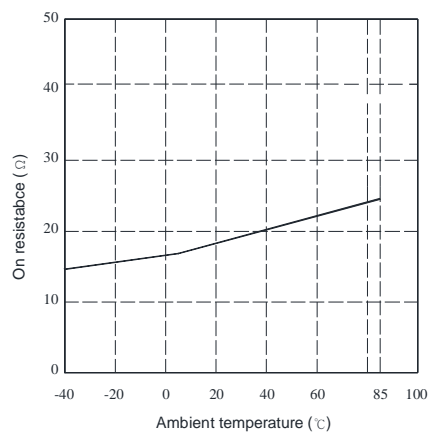


Reference Data

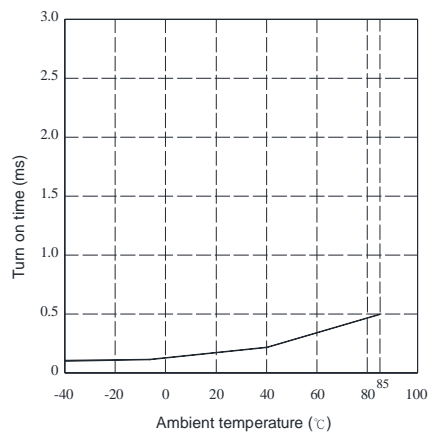
Load current Vs.
Ambient temperature



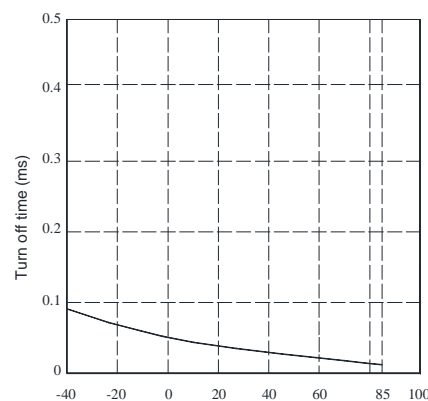
On resistance Vs.
Ambient temperature



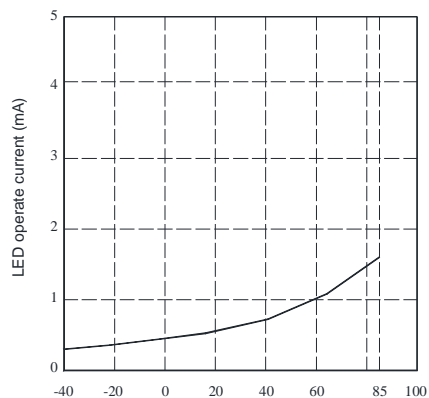
Turn on time Vs.
Ambient temperature



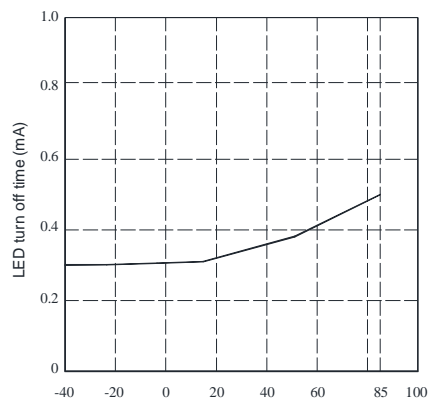
Turn off time Vs.
Ambient temperature



LED operate current Vs.
Ambient temperature

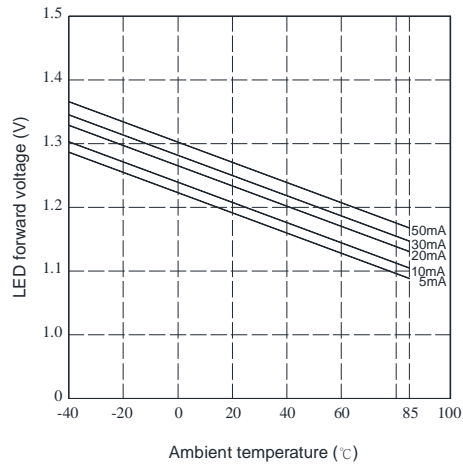


LED turn off current Vs.
Ambient temperature

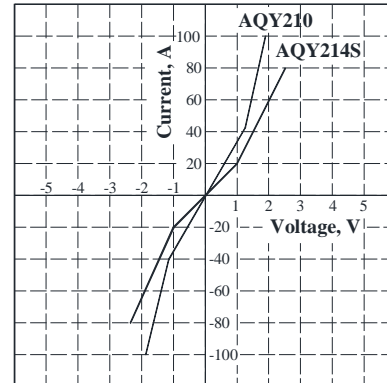




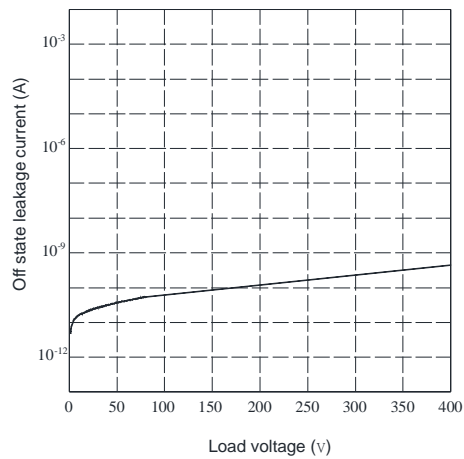
LED forward voltage Vs.
Ambient temperature



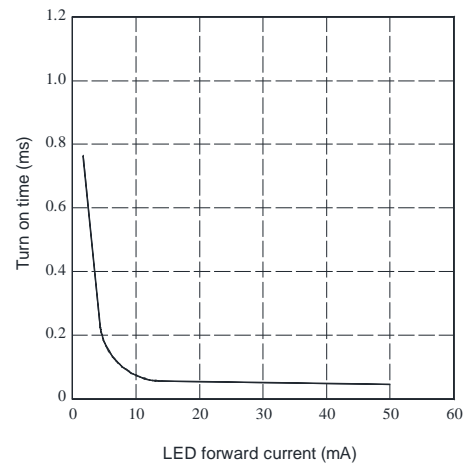
Voltage Vs. current characteristics of
output at MOS portion



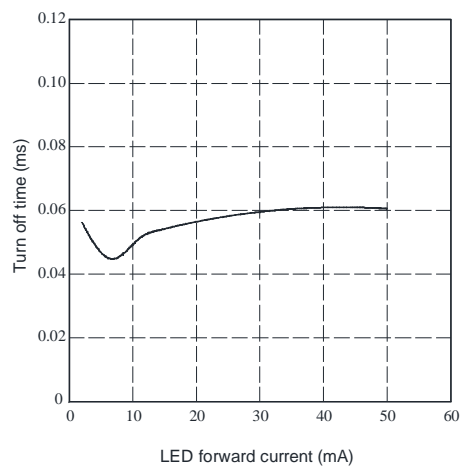
Off state leakage current Vs.
Load voltage characteristics



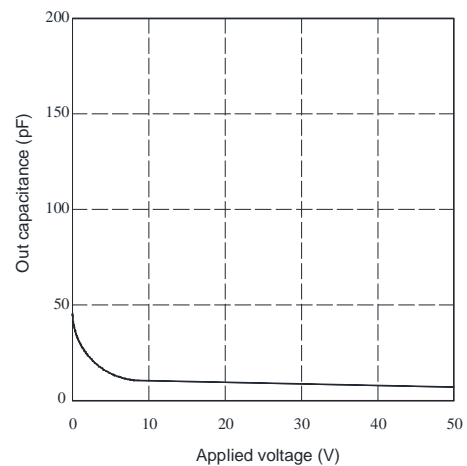
LED foward current Vs.
turn on time characteristics

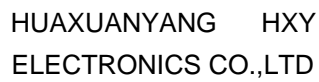


LED foward current Vs.
turn off time characteristics



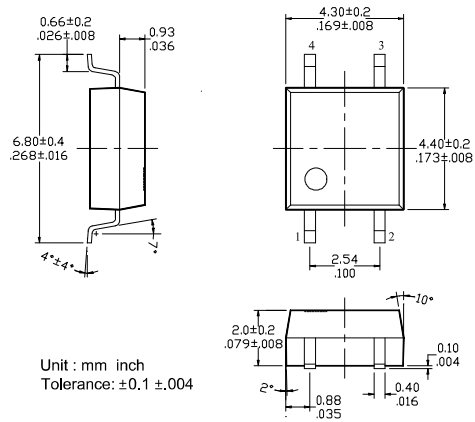
Applied voltage Vs.
output capacitance characteristics





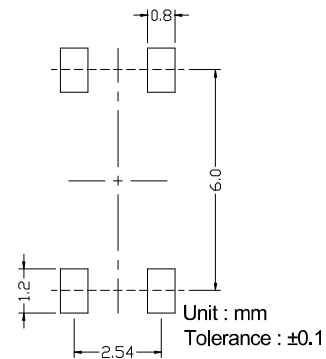
Load voltage:400V / Load current:0.12A

Surface mount terminal type



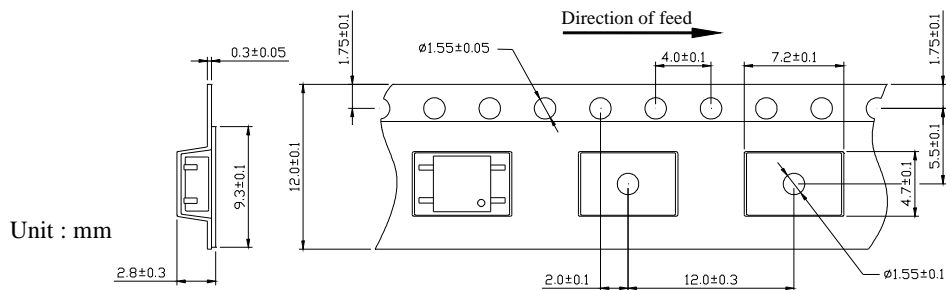
Unit : mm inch
Tolerance: ± 0.1 $\pm .004$

Recommended mounting pad (Top view)



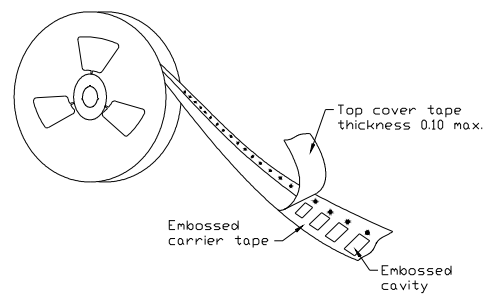
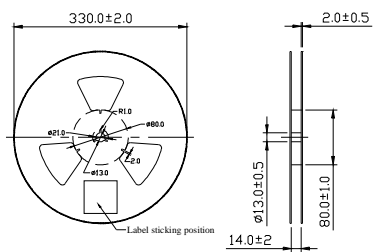
Unit : mm
Tolerance : ± 0.1

Tape dimensions



Unit : mm

Dimensions of tape reel





Attention

- Any and all HUA XUAN YANG ELECTRONICS products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your HUA XUAN YANG ELECTRONICS representative nearest you before using any HUA XUAN YANG ELECTRONICS products described or contained herein in such applications.
- HUA XUAN YANG ELECTRONICS assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein.
- Specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- HUA XUAN YANG ELECTRONICS CO.,LTD. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all HUA XUAN YANG ELECTRONICS products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of HUA XUAN YANG ELECTRONICS CO.,LTD.
- Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. HUA XUAN YANG ELECTRONICS believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the HUA XUAN YANG ELECTRONICS product that you intend to use.