



### Features

- Low driver power requirements (TTL/CMOS Compatible)
- No moving parts
- High reliability
- Arc-Free with no snubbing circuits
- 3750Vrms Input/Output isolation

### Applications

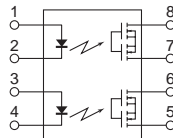
- Telecommunications (PC, Electronic notepad)
- Measuring and Testing equipment
- Industrial control
- Security equipments
- High speed inspection machine



SMD-8



DIP-8



1,3. LED Anode  
 2,4. LED Cathode  
 5,6. Drain (MOS FET)  
 7,8. Drain (MOS FET)

### TYPES

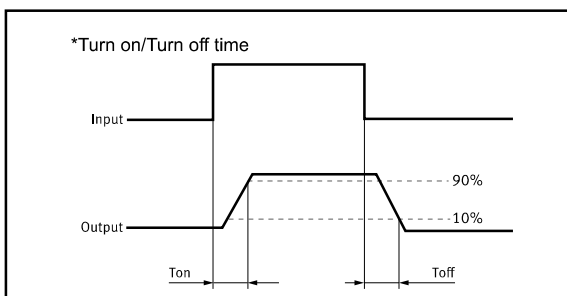
| Category | Output rating |              | Part No.  | Package | Packing quantity |
|----------|---------------|--------------|-----------|---------|------------------|
|          | Load voltage  | Load current |           |         | Tape and reel    |
| AC/DC    | 350V          | 150mA        | GAQW210E  | DIP-8   | 25pcs/Tube       |
|          |               |              | GAQW210EH | SMD-8   | 1000pcs/1reel    |

### Absolute Maximum Ratings (Ambient Temperature: 25°C)

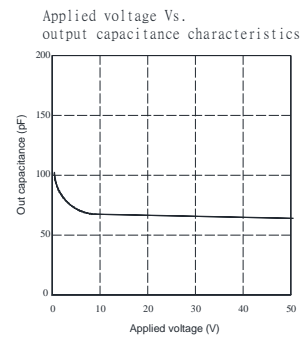
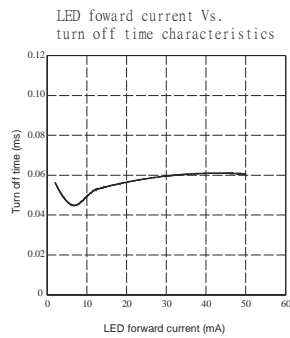
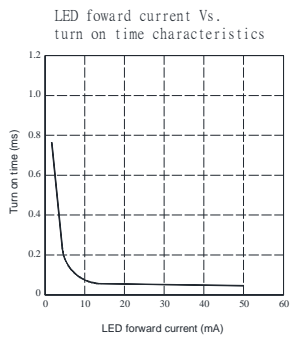
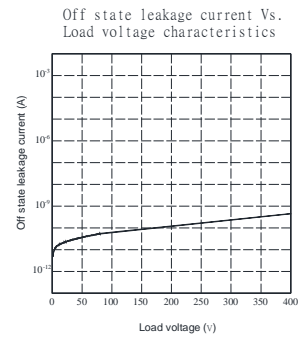
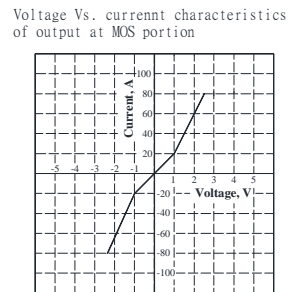
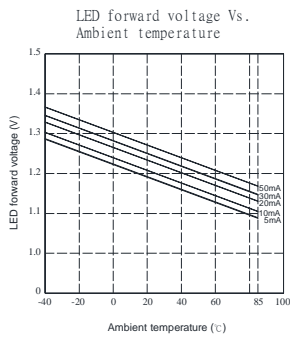
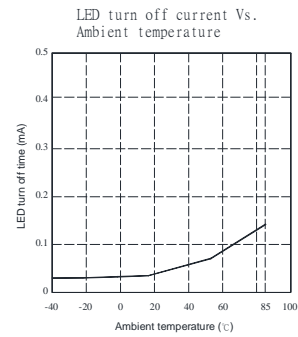
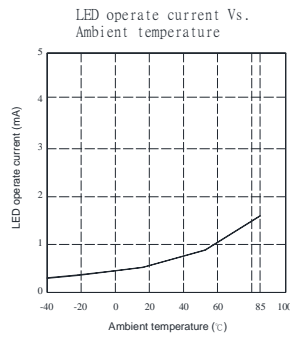
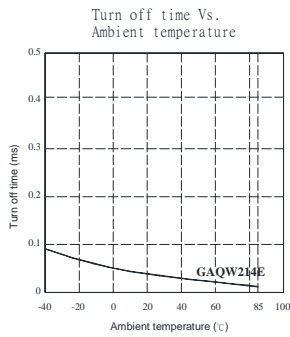
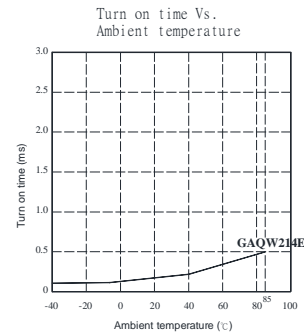
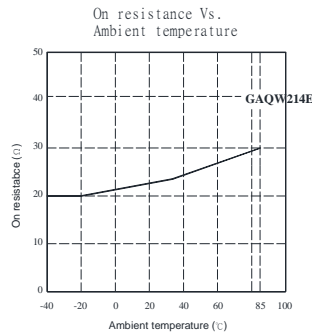
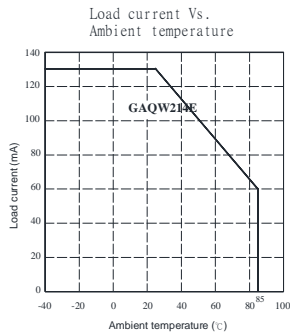
| Item                      |                          | Symbol     | Value       | Units            | Note             |
|---------------------------|--------------------------|------------|-------------|------------------|------------------|
| Input                     | Continuous LED Current   | $I_F$      | 50          | mA               |                  |
|                           | Peak LED Current         | $I_{FP}$   | 1000        | mA               | f=100Hz, duty=1% |
|                           | LED Reverse Voltage      | $V_R$      | 5           | V                |                  |
|                           | Input Power Dissipation  | $P_{In}$   | 75          | mW               |                  |
| Output                    | Load Voltage             | $V_L$      | 350         | V(AC peak or DC) |                  |
|                           | Load Current             | $I_L$      | 150         | mA               |                  |
|                           | Peak Load Current        | $I_{Peak}$ | 0.8         | A                | 100ms(1 pulse)   |
|                           | Output Power Dissipation | $P_{out}$  | 750         | mW               |                  |
| Total Power Dissipation   |                          | $P_T$      | 800         | mW               |                  |
| I/O Breakdown Voltage     |                          | $V_{I/O}$  | 3750        | V <sub>rm</sub>  | RH=60%, 1min     |
| Operating Temperature     |                          | $T_{Opr}$  | -40 to +85  | °C               |                  |
| Storage Temperature       |                          | $T_{Stg}$  | -40 to +100 | °C               |                  |
| Pin Soldering Temperature |                          | $T_{Sol}$  | 260         | °C               | 10 sec max.      |

### Electrical Specifications (Ambient Temperature: 25°C)

| Item         |                           | Symbol      | MIN.      | TYP. | MAX. | Units    | Conditions  |
|--------------|---------------------------|-------------|-----------|------|------|----------|---|
| Input        | LED Forward Voltage       | $V_F$       | 1.23      | 1.3  | 1.50 | V        | $I_F=10mA$  |
|              | Operation LED Current     | $I_{F On}$  |           | 0.9  | 3.0  | mA       |   |
|              | Recovery LED Current      | $I_{F Off}$ |           | 0.35 | 0.5  | mA       |   |
|              | Recovery LED Voltage      | $V_{F Off}$ | 0.5       | 1.2  |      | V        |   |
| Output       | On-Resistance             | $R_{On}$    |           | 14   | 18   | $\Omega$ | $I_F=5mA, I_L=100mA$ ,<br>Time to flow is within 1 sec. |
|              | Off-State Leakage Current | $I_{Leak}$  |           |      | 0.1  | $\mu A$  | $V_L=Rating$  |
|              | Output Capacitance        | $C_{Out}$   |           | 58   |      | pF       | $V_L=0, f=1MHz$   |
| Transmission | Turn-On Time              | $T_{On}$    |           | 0.3  | 1.0  | ms       | $I_F=5mA, I_L=100mA$ ,                                  |
|              | Turn-Off Time             | $T_{Off}$   |           | 0.03 | 0.5  | ms       |   |
| Coupled      | I/O Isolation Resistance  | $R_{I/O}$   | $10^{10}$ |      |      | $\Omega$ | DC500V  |
|              | I/O Capacitance           | $C_{I/O}$   |           | 0.8  | 1.5  | pF       | f=1MHz  |



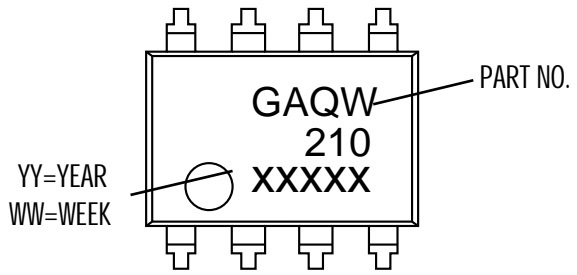
### Reference Data



### 8-SMD

### Dimensions

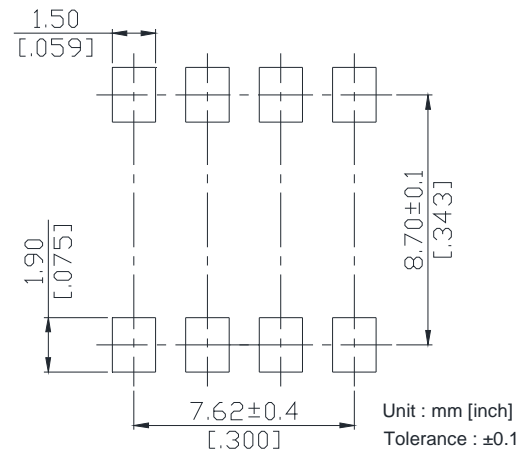
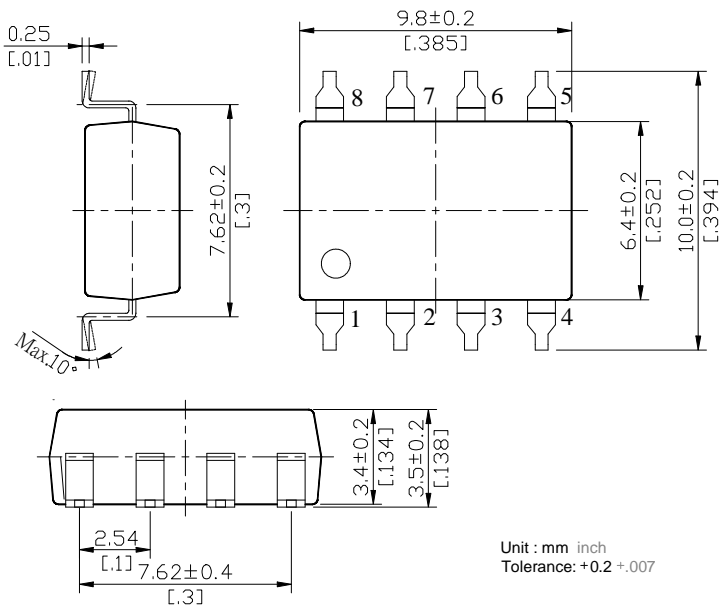
mm inch



Surface mount terminal type

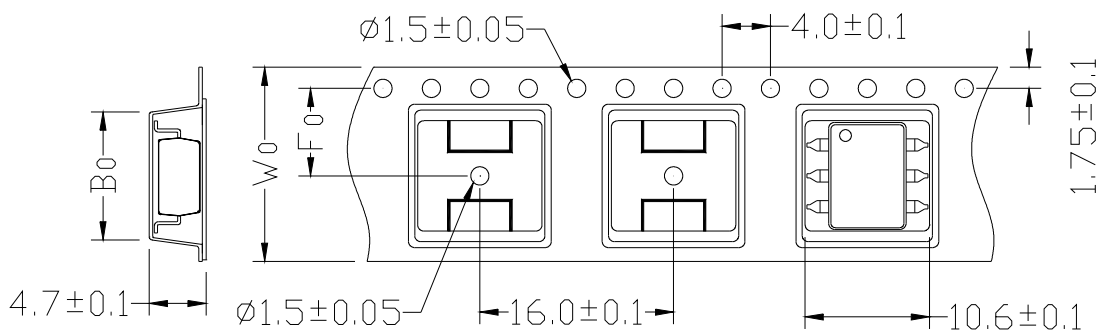
PC board pattern

(Top view)

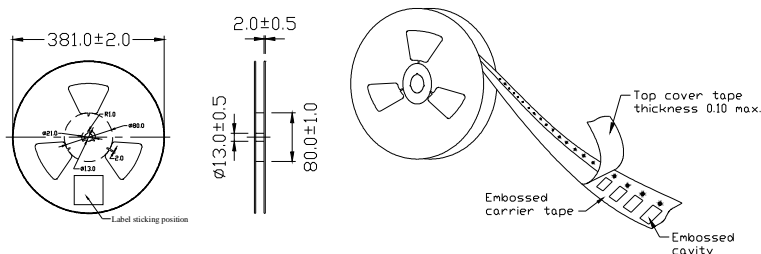


Tape dimensions

Direction of feed



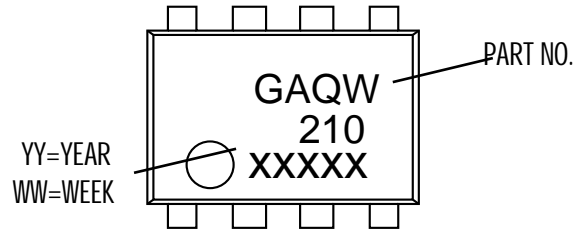
Dimensions of tape reel



### 8-DIP

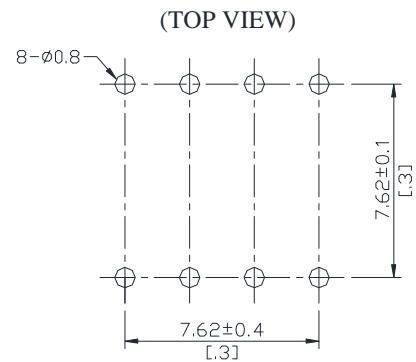
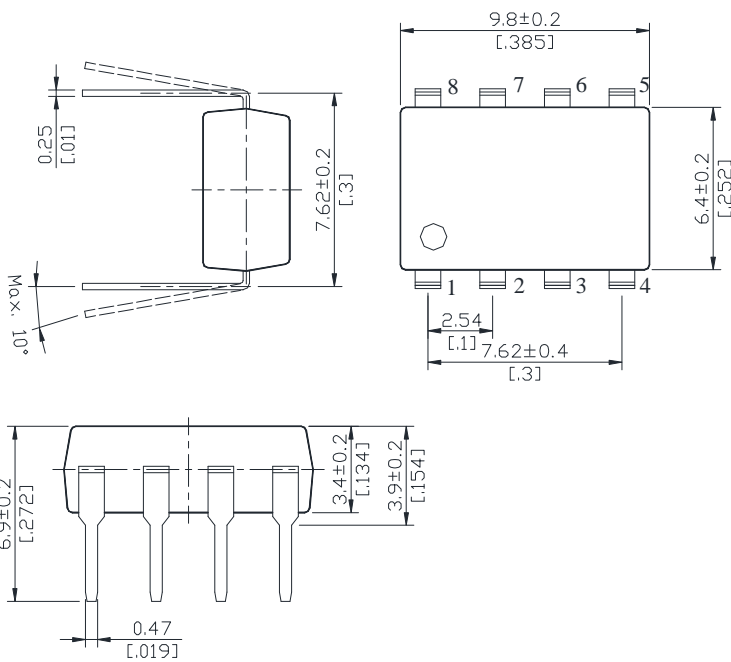
### Dimensions

mm inch



### Through hole terminal type

### PC board pattern



Unit : mm inch  
Tolerance: +0.2 +.007

### DIP type

Devices are packaged in a tube so that pin No. 1 is on the stopper B side. Observe correct orientation when mounting them on PC boards.

