



### Features

- Low driver power requirements (TTL/CMOS Compatible)
- Contact form: Normally-Off (1b)
- Load voltage: 60V max.
- On-Resistance: 3Ω max.
- 3750Vrms Input/Output isolation
- Tape & Reel version available

### Applications

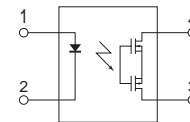
- Telecommunications (PC, Electronic notepad)
- Measuring and Testing equipment
- Industrial control
- Security equipments
- High speed inspection machine



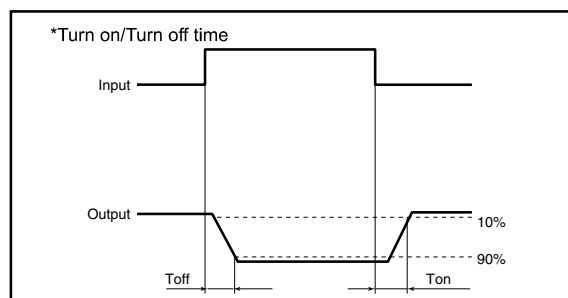
DIP4



SMD4



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



### TYPES

Category	Output rating		Package	Part No.	Packing quantity
	Load voltage	Load current			
AC/DC	60V	500mA	DIP4	GAQY412E	50pcs/tube
			SMD4	GAQY412EH	1000pcs/reel

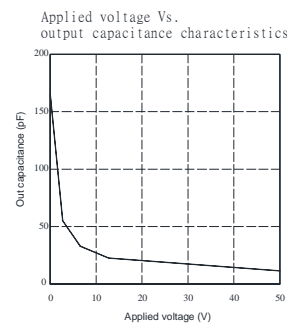
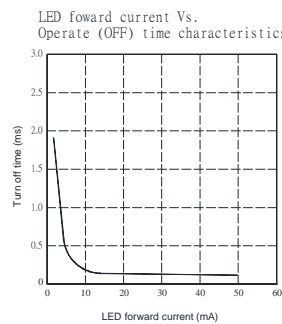
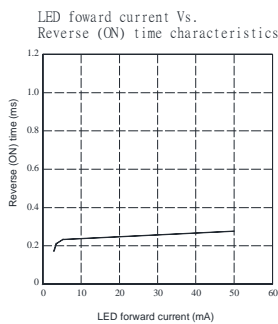
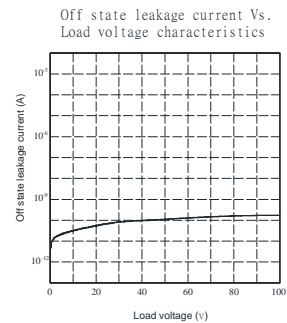
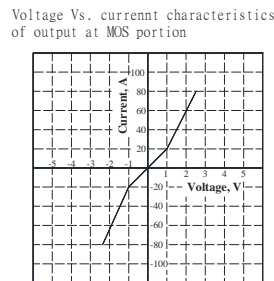
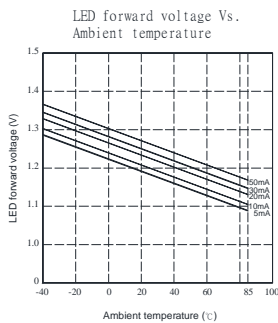
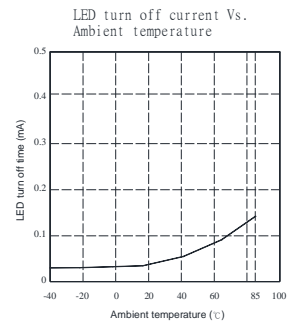
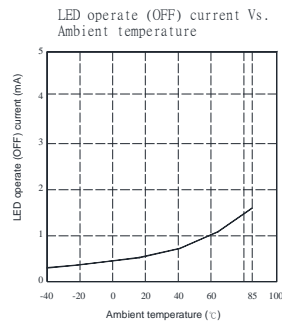
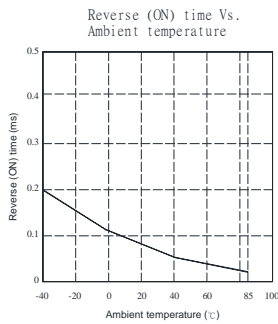
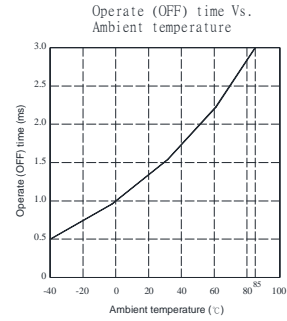
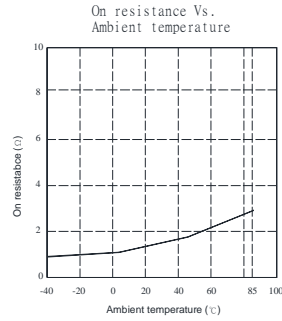
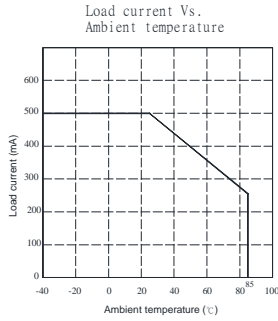
Absolute Maximum Ratings (Ambient Temperature: 25°C)

Item		Symbol	Value	Units	Note
Input	Continuous LED Current	I <sub>F</sub>	50	mA	
	Peak LED Current	I <sub>FP</sub>	1000	mA	f=100Hz, duty=1%
	LED Reverse Voltage	V <sub>R</sub>	5	V	
	Input Power Dissipation	P <sub>In</sub>	75	mW	
Output	Load Voltage	V <sub>L</sub>	60	V(AC peak or DC)	
	Load Current	I <sub>L</sub>	500	mA	
	Peak Load Current	I <sub>Peak</sub>	0.6	A	1ms(1 pulse)
	Output Power Dissipation	P <sub>Out</sub>	300	mW	
Total Power Dissipation		P <sub>T</sub>	350	mW	
I/O Breakdown Voltage		V <sub>I/O</sub>	3750	V <sub>rms</sub>	RH=60%, 1min
Operating Temperature		T <sub>opr</sub>	-40 to +85	°C	
Storage Temperature		T <sub>stg</sub>	-40 to +100	°C	
Pin Soldering Temperature		T <sub>sol</sub>	260	°C	10 sec max.

Electrical Specifications (Ambient Temperature: 25°C)

Item		Symbol	MIN.	TYP.	MAX.	Units	Conditions
Input	LED Forward Voltage	V <sub>F</sub>		1.2	1.5	V	I <sub>F</sub> =10mA
	Operation LED Current	I <sub>Fon</sub>		0.5	3.0	mA	
	Recovery LED Current	I <sub>Foff</sub>	0.1	0.4		mA	
	Recovery LED Voltage	V <sub>Foff</sub>	0.5			V	
Output	On-Resistance	R <sub>on</sub>		1	3	Ω	I <sub>F</sub> =0mA, I <sub>L</sub> =50mA, Time to flow is within 1 sec.
	Off-State Leakage Current	I <sub>Leak</sub>			1	uA	I <sub>F</sub> =5mA, V <sub>L</sub> =60V
	Output Capacitance	C <sub>out</sub>		165		pF	I <sub>F</sub> =5mA, V <sub>L</sub> =0, f=1MHz
Transmis sion	Turn-On Time	T <sub>on</sub>		0.5	1.5	ms	I <sub>F</sub> =5mA, I <sub>L</sub> =50mA
	Turn-Off Time	T <sub>off</sub>		0.25	2.0	ms	
Coupled	I/O Isolation Resistance	R <sub>I/O</sub>	10 <sup>10</sup>			Ω	DC500V
	I/O Capacitance	C <sub>I/O</sub>		0.8		pF	f=1MHz

## Reference Data

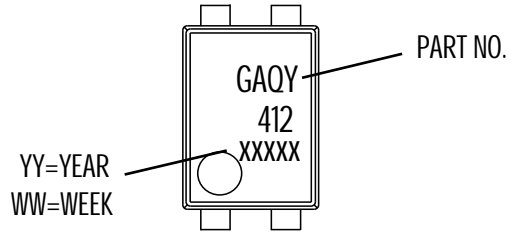


## Dimensions

### 4-DIP



DIP4



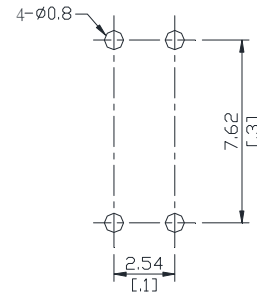
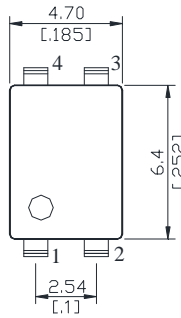
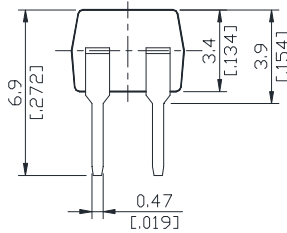
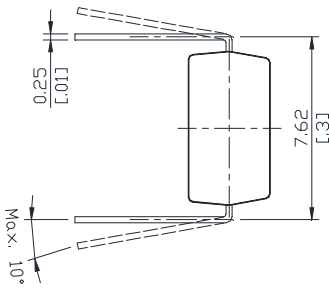
mm inch

### Dimensions

#### Through hole terminal type

#### PC board pattern

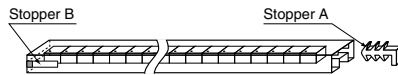
(TOP VIEW)



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.

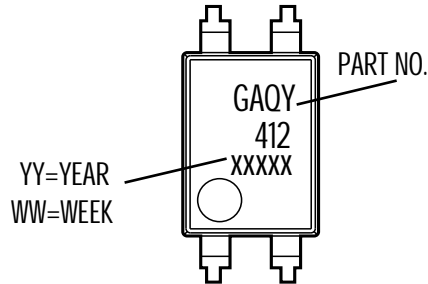


## Dimensions

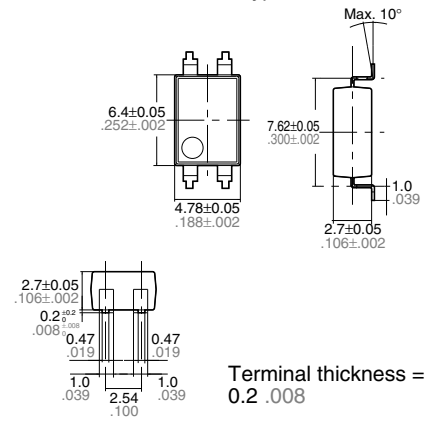
### 4-SMD



SMD4



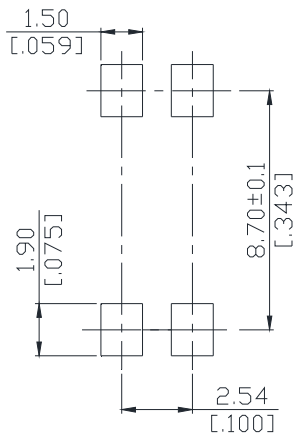
### Surface mount terminal type



Terminal thickness = 0.2 .008

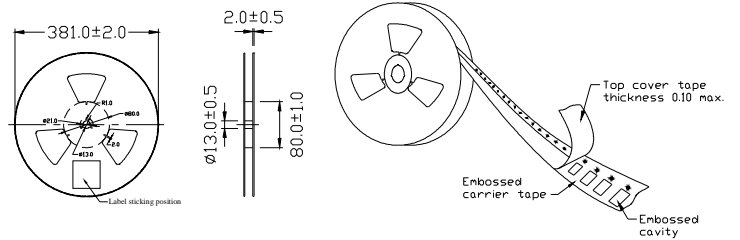
General tolerance: ±0.1 ±0.04

### PC board pattern (Top view)

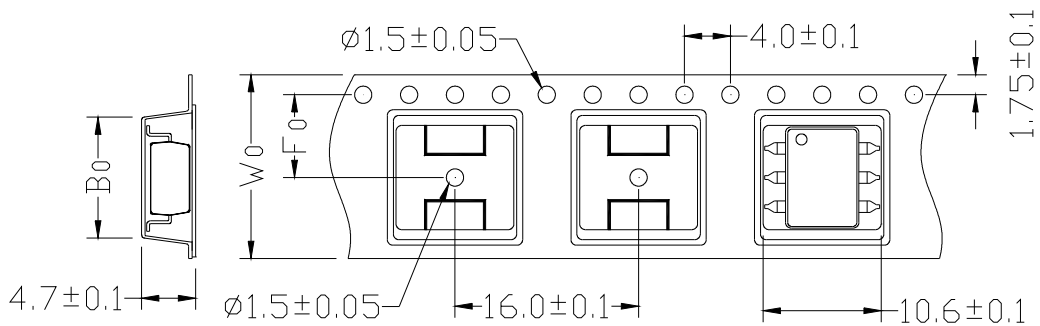


Unit : mm [inch]  
Tolerance : ±0.1

### Tape dimensions



### Dimensions of tape reel



Unit: mm

TYPE	B0±0.1	F0±0.1	W0±0.1	13"REEL/PCS
4P	5.3	7.5	16	1000

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