



Features

- Low driver power requirements (TTL/CMOS Compatible)
- Contact form: Normally-Off (2b)
- Load voltage: 400V max.
- On-Resistance: 50Ω max.
- 3750Vrms Input/Output isolation
- Tape & Reel version available

Applications

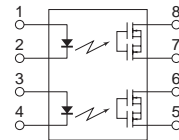
- Telecommunications (PC, Electronic notepad)
- Measuring and Testing equipment
- Industrial control
- Security equipments
- High speed inspection machine



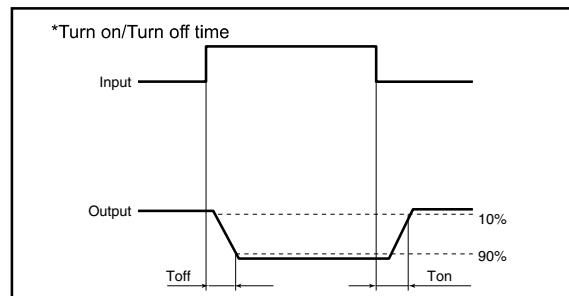
SMD8



DIP8



- 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	400V	120mA	GAQW414E	DIP-8	25pcs/Tube
			GAQW414EH	SMD-8	1000pcs/1reel

Absolute Maximum Ratings (Ambient Temperature: 25°C)

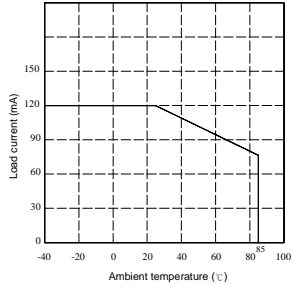
Item		Symbol	Value	Units	Note
Input	Continuous LED Current	I _F	50	mA	
	Peak LED Current	I _{FP}	500	mA	f=100Hz, duty=1%
	LED Reverse Voltage	V _R	5	V	
	Input Power Dissipation	P _{In}	75	mW	
Output	Load Voltage	V _L	400	V(AC peak or DC)	
	Load Current	I _L	120	mA	
	Peak Load Current	I _{Peak}	0.3	A	1ms(1 pulse)
	Output Power Dissipation	P _{Out}	500	mW	
Total Power Dissipation		P _T	550	mW	
I/O Breakdown Voltage		V _{I/O}	3750	V _{rms}	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)

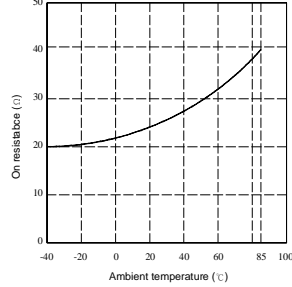
Item		Symbol	MIN.	TYP.	MAX.	Units	Conditions
Input	LED Forward Voltage	V _F		1.2	1.4	V	I _F =10mA
	Operation LED Current	I _{Fon}		0.5	3.0	mA	
	Recovery LED Current	I _{Foff}		0.35	0.5	mA	
	Recovery LED Voltage	V _{Foff}	0.5			V	
Output	On-Resistance	R _{on}		20	50	Ω	I _F =0mA, I _L =50mA, Time to flow is within 1 sec.
	Off-State Leakage Current	I _{Leak}			10	uA	I _F =5mA, V _L =400V
	Output Capacitance	C _{out}		165		pF	I _F =5mA, V _L =0, f=1MHz
Transmission	Turn-On Time	T _{on}		0.02	1.0	ms	I _F =5mA, I _L =50mA
	Turn-Off Time	T _{off}		0.5	3.0	ms	
Coupled	I/O Isolation Resistance	R _{I/O}	10 ¹⁰			Ω	DC500V
	I/O Capacitance	C _{I/O}		0.8		pF	f=1MHz

Reference Data

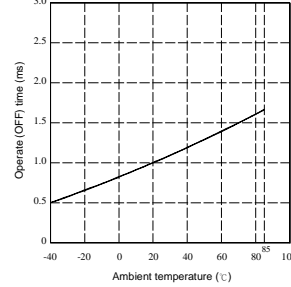
Load current Vs. Ambient temperature



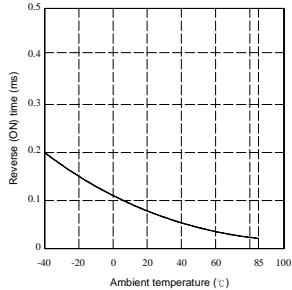
On resistance Vs. Ambient temperature



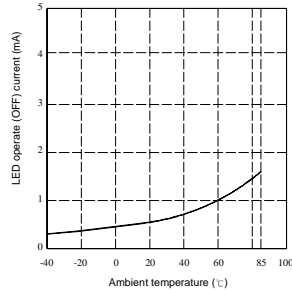
Operate (OFF) time Vs. Ambient temperature



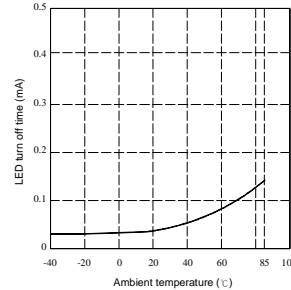
Reverse (ON) time Vs. Ambient temperature



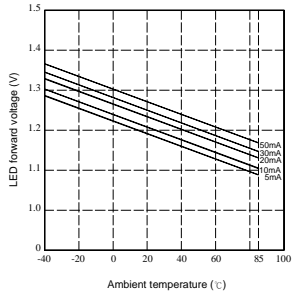
LED operate (OFF) current Vs. Ambient temperature



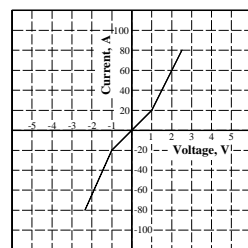
LED turn off time Vs. Ambient temperature



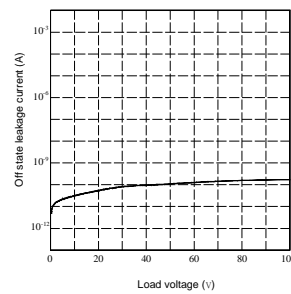
LED forward voltage Vs. Ambient temperature



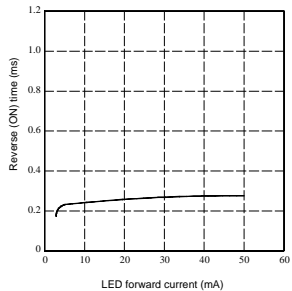
Voltage Vs. current characteristics of output at MOS portion



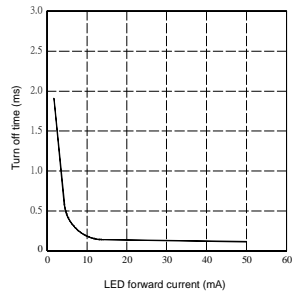
Off state leakage current Vs. Load voltage characteristics



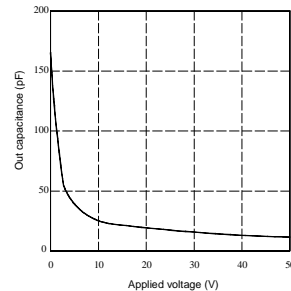
LED forward current Vs. Reverse (ON) time characteristics



LED forward current Vs. Operate (OFF) time characteristics



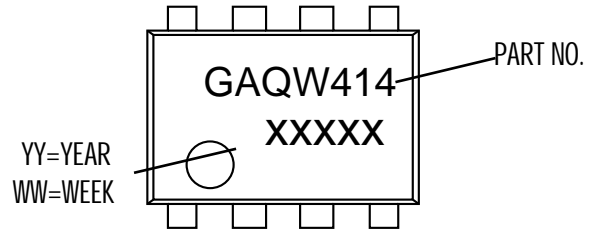
Applied voltage Vs. output capacitance characteristics



8-DIP

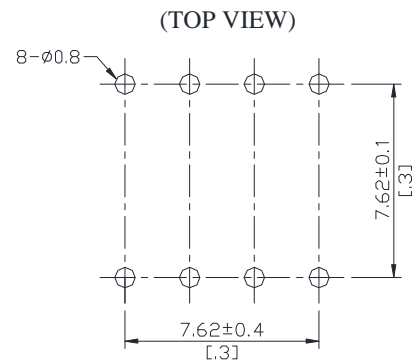
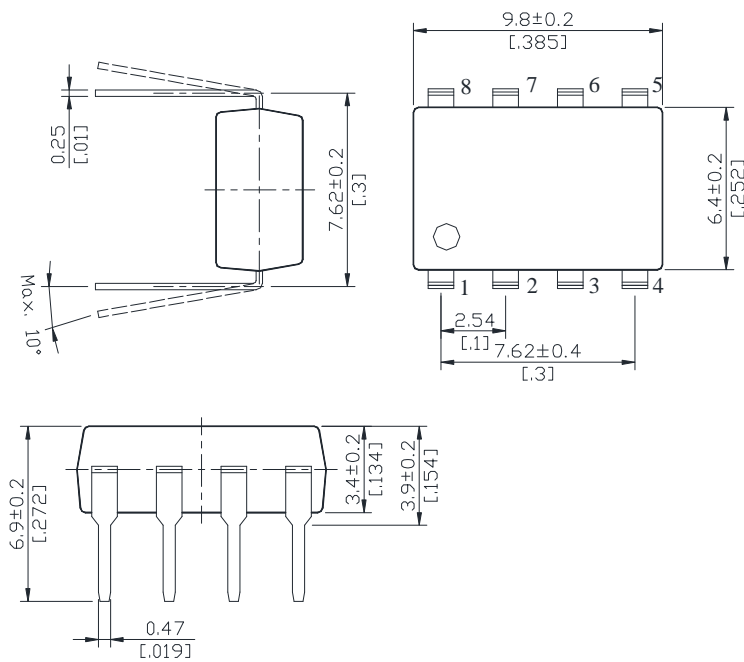
Dimensions

mm inch



Through hole terminal type

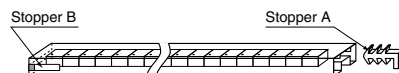
PC board pattern



Unit : mm inch
Tolerance: +0.2 +.007

DIP type

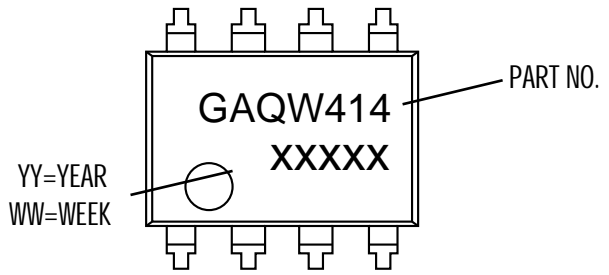
Devices are packaged in a tube so that pin No. 1 is on the stopper B side. Observe correct orientation when mounting them on PC boards.



8-SMD

Dimensions

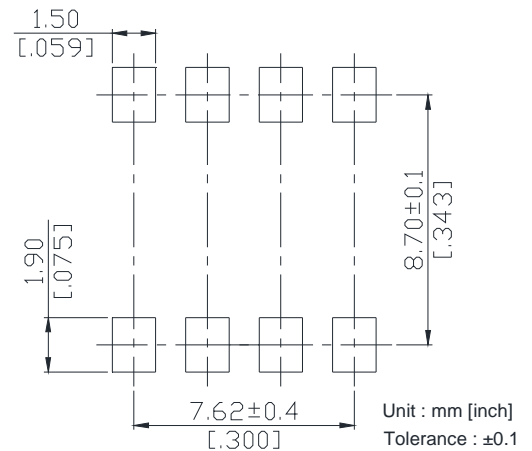
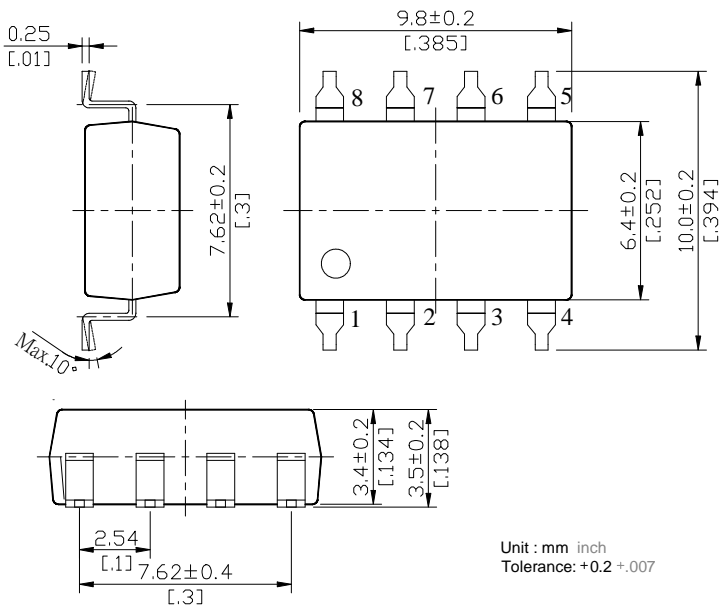
mm inch



Surface mount terminal type

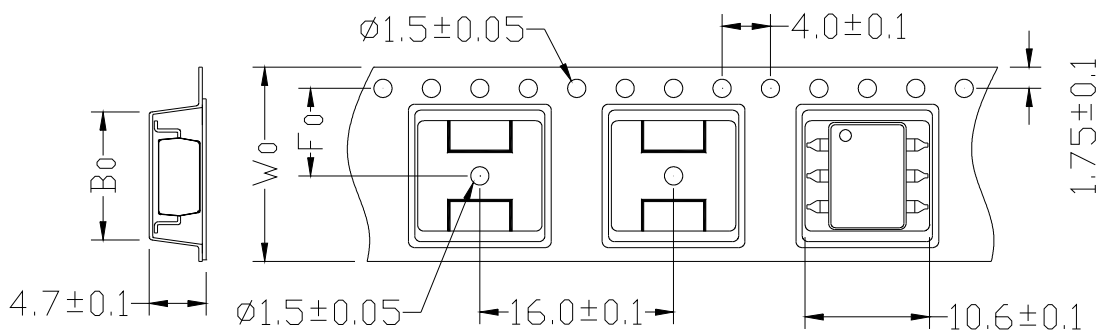
PC board pattern

(Top view)



Tape dimensions

Direction of feed



Dimensions of tape reel

