

1.3.5.7 LED Anode
2.4.6.8. LED Cathode
9.11.13.15. Drain(MOS FET)
10.12.14.16. Drain(MOS FET)

Parameter	Symbol	Rating	Units
Load Voltage	V _L	60	V
Load Current	I _L	0.20	A
On-Resistance	R _{on}	3	Ω
Leakage Current	I _{Leak}	5	nA

APSEMI PhotoRelays

APSEMI Photorelays are the most reliable, technically advanced logic-to-power interface devices. Their basic function is to take a low current signal from a microprocessor to control the switching of both AC and DC loads, while providing an isolation barrier between logic and power.

While this function is common to all relays, Photorelays provide distinct advantages over their mechanical counterparts including:

- Long life (No limit on mechanical and electrical lifetime)
- Bounce-free switching
- Higher speed and high frequency switching
- Higher sensitivity (less power consumption)
- Immunity to EMI or RFI
- No have voltaic arc, bounce, and noise
- More resistant to vibration and impact
- AC or DC load switching
- Small package size

Function

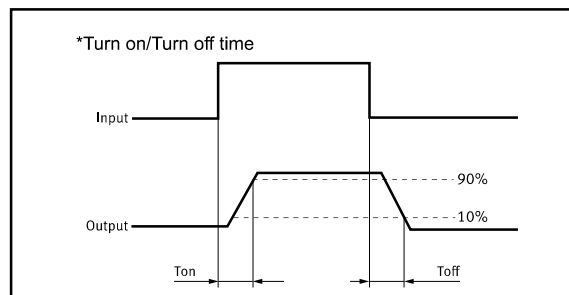
APSEMI PhotoRelays operate by taking a low level input current (<5mA) that energizes an input Infrared LED, which is optically-coupled to a Photo-diode array chip. This IC in turn generates a photo voltage that powers two MOSFETs typically connected in a source-to-source configuration, allowing for both AC and DC output loads. Photorelay basically move photons to accomplish their switching function, they incur no mechanical wear and tear, providing consistent reliable switching.

Applications

- Telecom/Datacom switching
- Multiplexers
- Meter reading systems
- Data acquisition
- Medical equipment
- Battery monitoring
- I/O Sub-Systems
- Robotics
- Aerospace
- Home/Safety security systems
- Process Control
- Energy Management
- Reed Relay EMR Replacement
- Programmable Controllers

TPYES

Category	Output Rating		Package	Part No.	Packing Quantity
	Load Voltage	Load Current			
AC/DC	60V	0.20A	SOP-16	ADW221S	2000pcs /reel



**Absolute Maximum Ratings** (Ta = 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	60	V(AC peak or DC)	
	Load Current	I _L	0.20	A	
	Peak Load Current	I _{Peak}	0.40	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}	2500	V _{rms}	RH=60%, 1min
Operating Temperature		T _{opr}	-40 to 85	°C	
Storage Temperature		T _{sig}	-40 to 100	°C	
Pin Soldering Temperature		T _{sol}	260	°C	10 sec max.

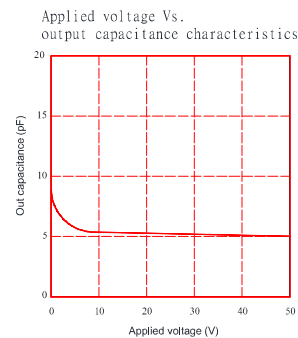
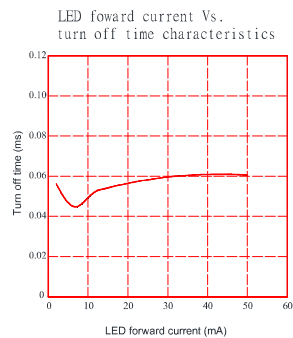
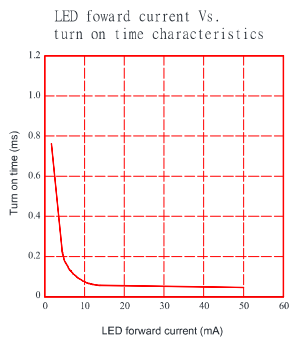
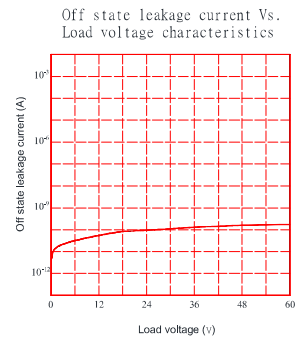
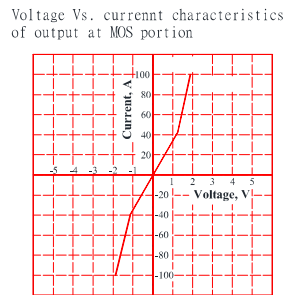
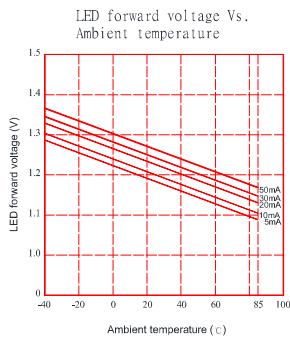
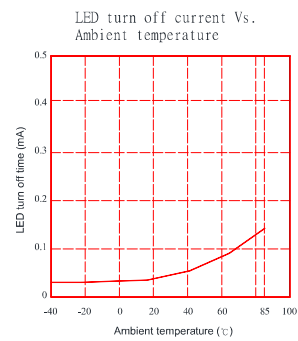
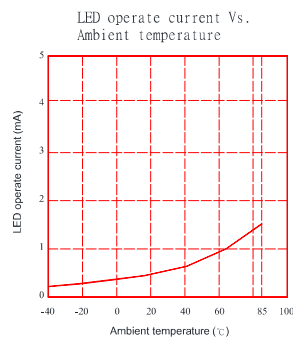
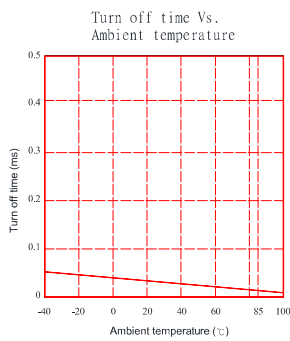
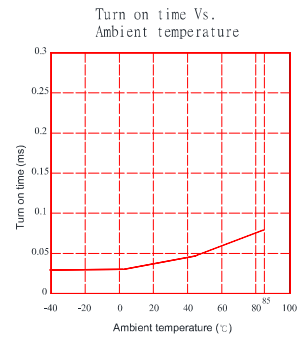
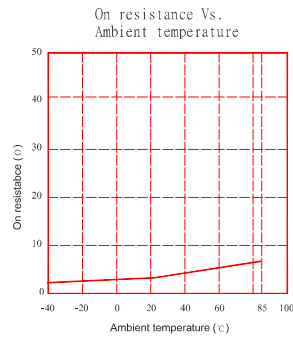
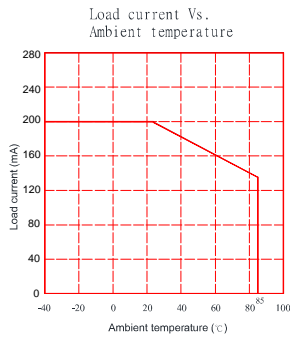
Electrical Characteristics (Ta = 25°C)

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	2.0	mA	
	Recovery LED Current	I _{Foff}		0.35	0.5	mA	
	Recovery LED Voltage	V _{Foff}	0.7			V	
Output	On-Resistance	R _{on}	1.5	3.0	5.0	Ω	I _F =5mA, I _L =100mA, Time to flow is within 1 sec.
	Off-State Leakage Current	I _{Leak}		0.005	0.01	nA	V _L =Rating
	Output Capacitance	C _{out}		7.50		pF	V _L =0, f=1MHz
Transmis sion	Turn-On Time	T _{on}		0.05	0.10	ms	I _F =5mA, I _L =100mA,
	Turn-Off Time	T _{off}		0.04	0.08	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=1MHz

Please obey the following conditions to ensure proper device operation and resetting. Input LED current (Recommended value): I_F ≥5mA and ≤30mA

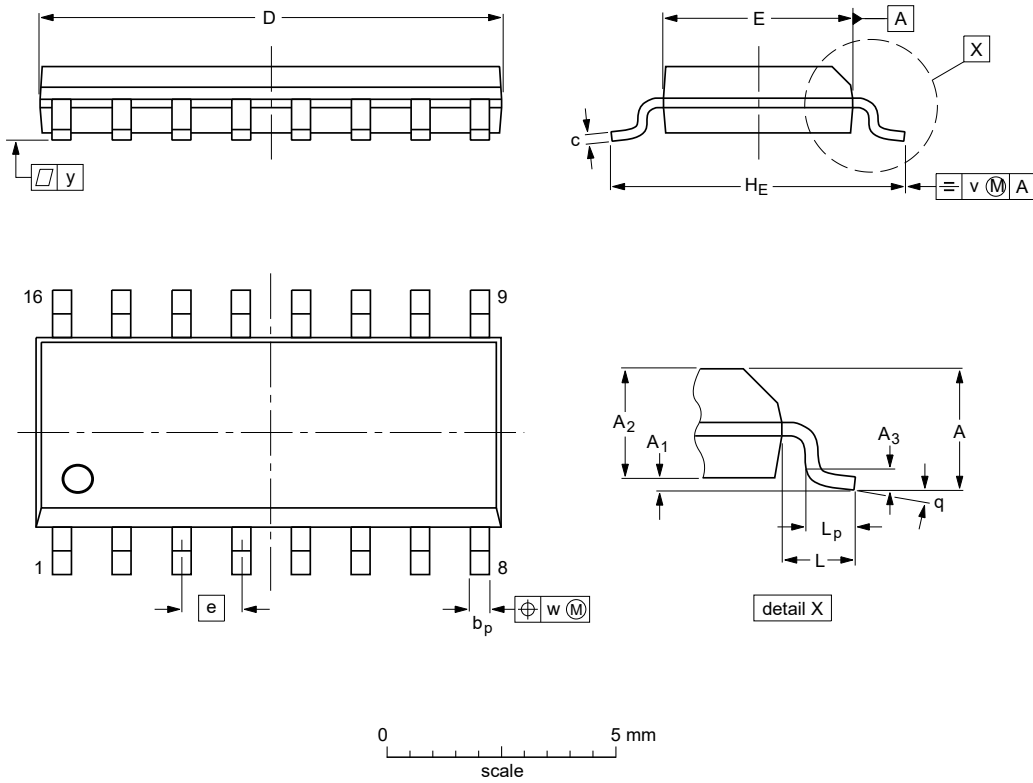


Engineering Data





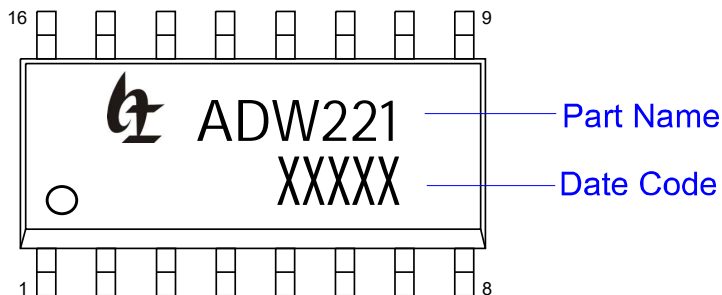
Dimensions and Package



Dimensions (inch dimensions are derived from the original mm dimensions)

Unit	A	A ₁	A ₂	A ₃	b _p	c	D ⁽¹⁾	E ⁽¹⁾	e	H _E	L	L _p	v	w	y	θ
mm	max	1.75	0.25		0.45	0.25	10.35	4.0		6.8		1.27		0.25	0.1	8°
	nom			0.25					1.27		1.05		0.2			
	min		0.10	1.25		0.31	9.8	3.8		5.8		0.4				0°

Marking



Lable

