

8 PIN DIP 400 V BREAKDOWN VOLTAGE TRANSFER TYPE 2-CH OPTICAL COUPLED MOSFET

PS7141-1C
PS7141L-1C

FEATURES

- **2 CHANNEL TYPE:**
(1a + 1b output)
- **LOW LED OPERATING CURRENT:**
 $I_F = 2 \text{ mA}$
- **DESIGNED FOR AC/DC SWITCHING LINE CHANGER**
- **SMALL PACKAGE:**
8 pin DIP
- **LOW OFFSET VOLTAGE**
- **SURFACE MOUNT AVAILABLE:**
PS7141L-1C

DESCRIPTION

The PS7141-1C and PS7141L-1C are transfer type solid state relays containing normally open (N.O.) contacts and normally closed (N.C.) contacts on the output side. They are suitable for analog signal control because of their low offset and high linearity.

APPLICATIONS

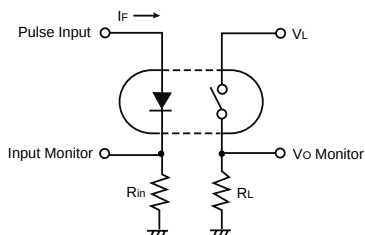
- EXCHANGE EQUIPMENT
- MEASUREMENT EQUIPMENT
- FA/OA EQUIPMENT

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

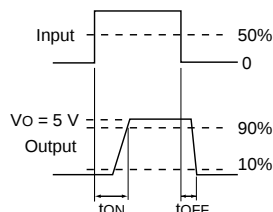
PART NUMBER					PS7141-1C, PS7141L-1C		
SYMBOLS		PARAMETERS		UNITS	MIN	TYP	MAX
Diode	V _F	Forward Voltage, I _F = 10 mA		V		1.2	1.4
	I _R	Reverse Current, V _R = 5 V		μA			5.0
MOSFET	I _{OFF}	Off-State Leakage Current,	N.O.: I _F = 0 mA, V _D = 400 V	μA		0.03	1.0
			N.C.: I _F = 10 mA, V _D = 400 V				
	C _{out}	Output Capacitance,	N.O.: V _D = 0 V, f = 1 MHz	pF/ch		65	
			N.C.: V _D = 0 V, f = 1 MHz, I _F = 10 mA				
Coupled	I _{Fon}	LED On-state Current,	N.O.: I _L = 150 mA	mA			2.0
	I _{Foff}	LED Off-state Current,	N.C.: I _L = 150 mA				2.0
	R _{ON1}	On-State Resistance,	N.O.: I _F = 10 mA, I _L = 10 mA	Ω		20	30
			N.C.: I _F = 0 mA, I _L = 10 mA			24	30
	R _{ON2}		N.O.: I _F = 10 mA, I _L = 150 mA, t≤10 ms			16	25
			N.C.: I _F = 0 mA, I _L = 150 mA, t≤10 ms			16	25
	t _{ON} (N.O.)	Turn-on Time ¹	I _F = 10 mA, V _O = 5 V, P _W ≥ 10 ms	ms		0.33	1.0
	t _{ON} (N.C.)					0.02	0.2
	t _{OFF} (N.O.)	Turn-off Time ¹				0.03	0.2
	t _{OFF} (N.C.)					0.20	1.0
R _{I-O}	Isolation Resistance, V _{I-O} = 1.0 kVdc			Ω	10 ⁹		
C _{I-O}	Isolation Capacitance, V = 0 V, f = 1 MHz			pF/ch		1.1	

Notes:

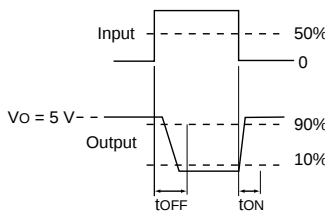
1. Test Circuit Switching Time:



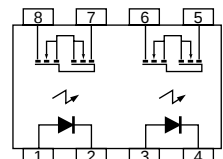
N.O. (between pin 5 and 6)



N.C. (between pin 7 and 8)

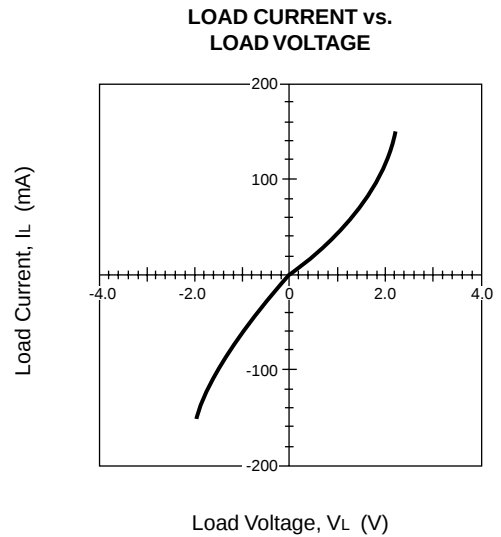
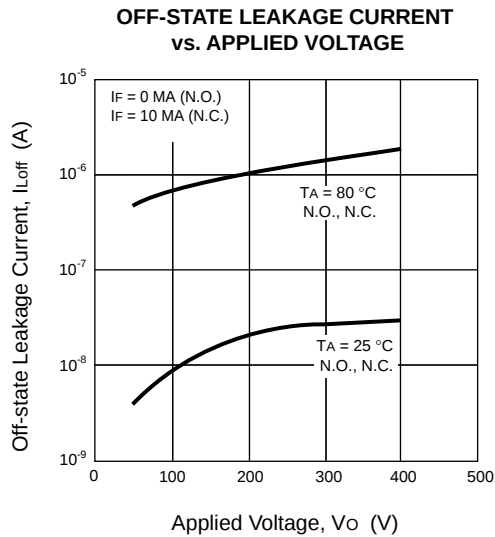
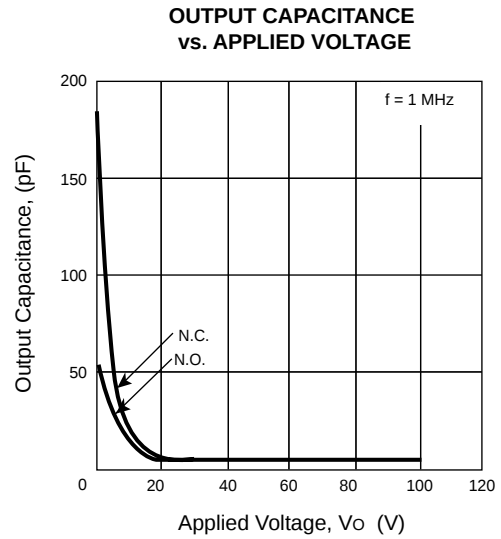
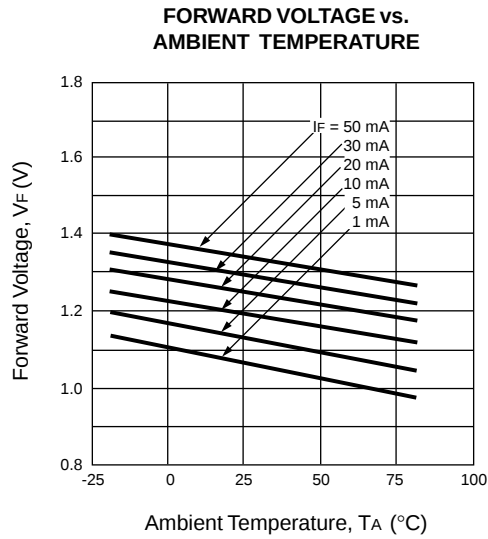
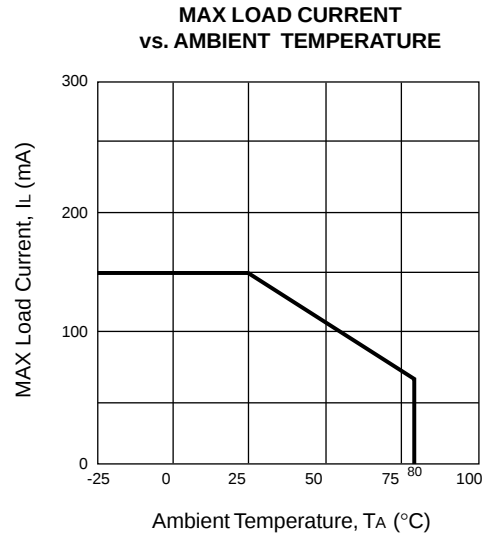
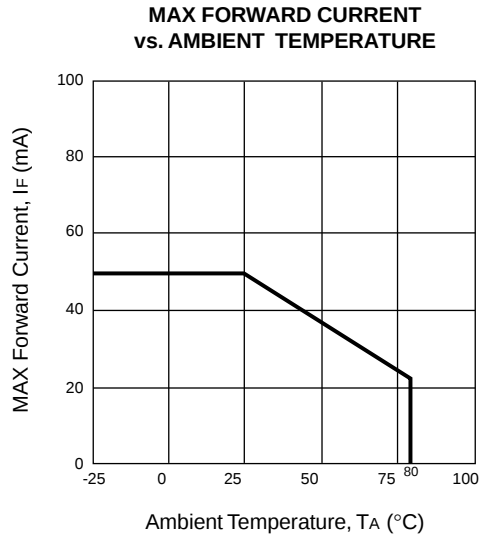


PS7141-1C, PS7141L-1C

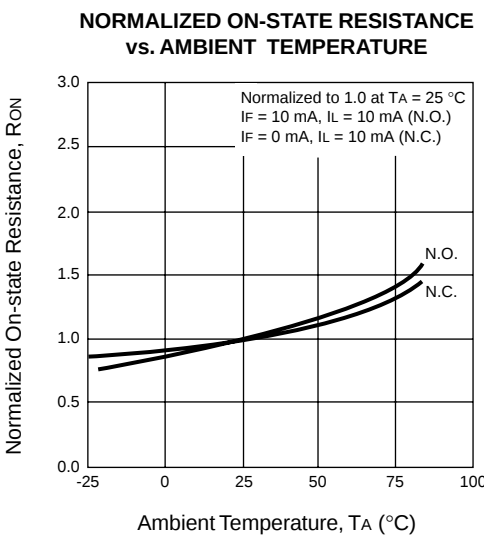
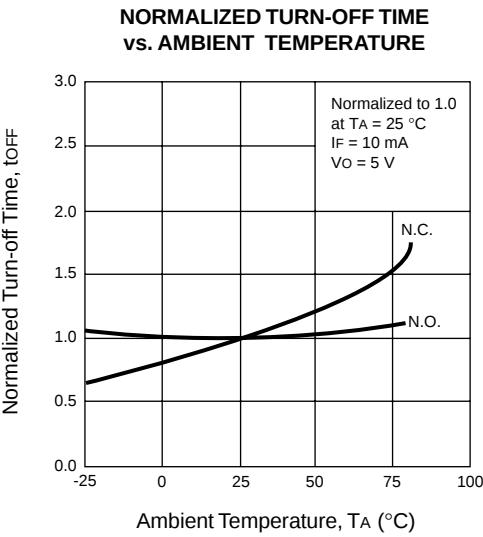
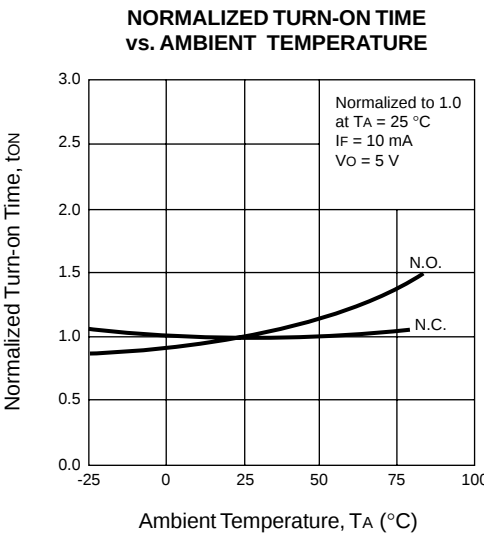
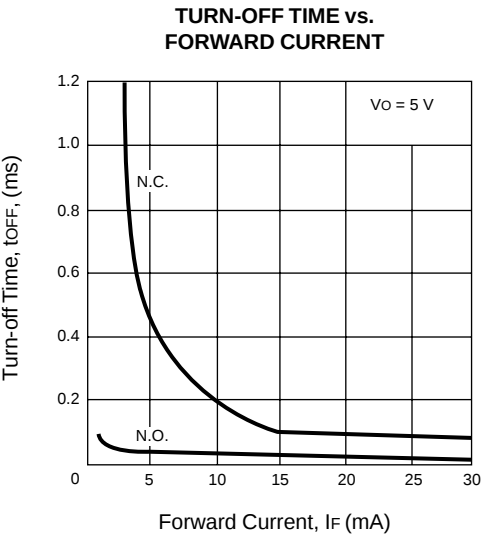
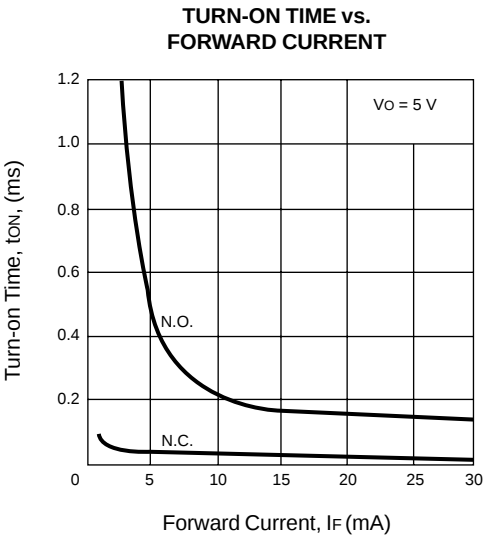


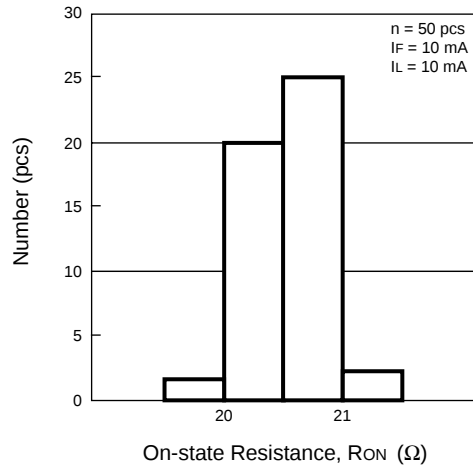
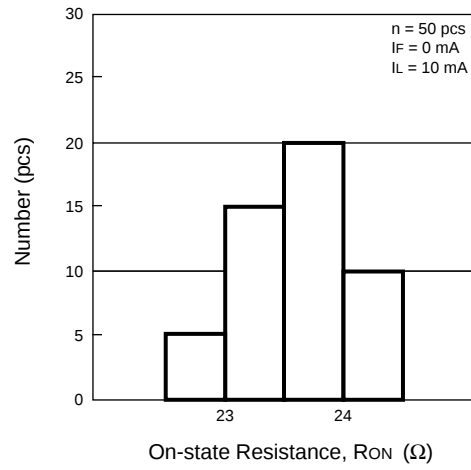
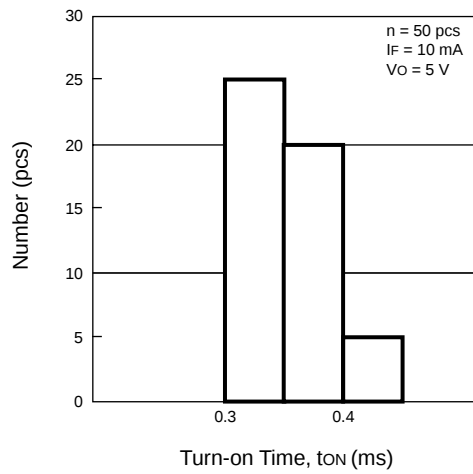
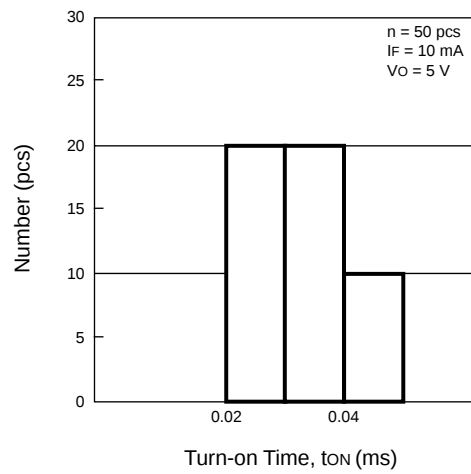
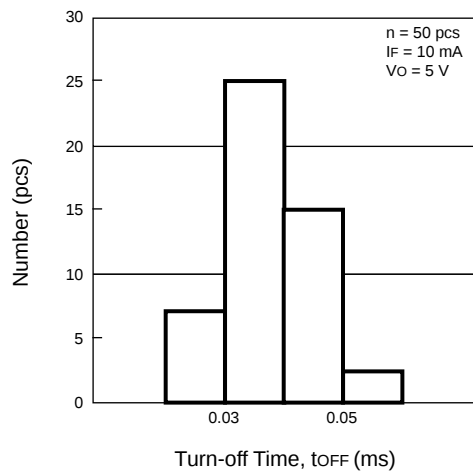
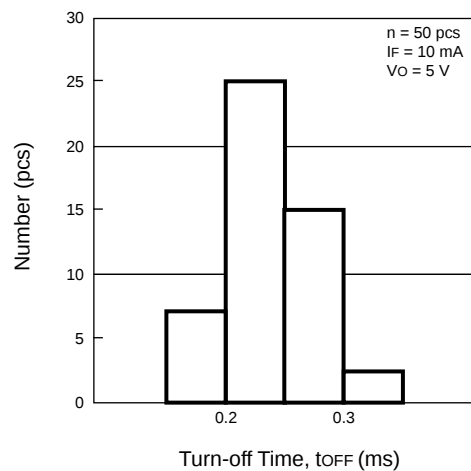
- ### PIN CONNECTION (Top View)

TYPICAL PERFORMANCE CURVES (T_A = 25 °C)



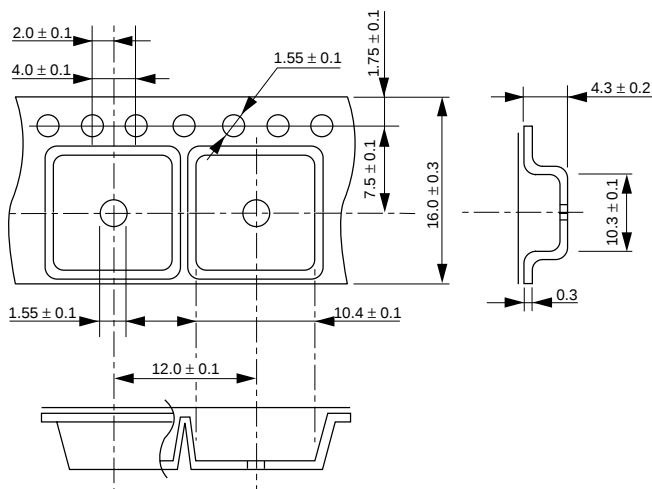
TYPICAL PERFORMANCE CURVES (T_A = 25 °C)



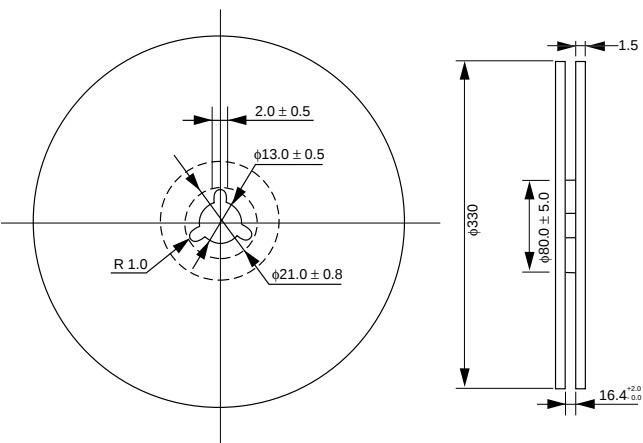
TYPICAL PERFORMANCE CURVES ($T_A = 25\text{ }^{\circ}\text{C}$)**ON-STATE RESISTANCE (N.O.)
DISTRIBUTION****ON-STATE RESISTANCE (N.C.)
DISTRIBUTION****TURN-ON TIME (N.O.) DISTRIBUTION****TURN-ON TIME (N.C.) DISTRIBUTION****TURN-OFF TIME (N.O.) DISTRIBUTION****TURN-OFF TIME (N.C.) DISTRIBUTION**

TAPING SPECIFICATIONS (Units in mm)

OUTLINE AND DIMENSIONS (TAPE)



OUTLINE AND DIMENSIONS (REEL)

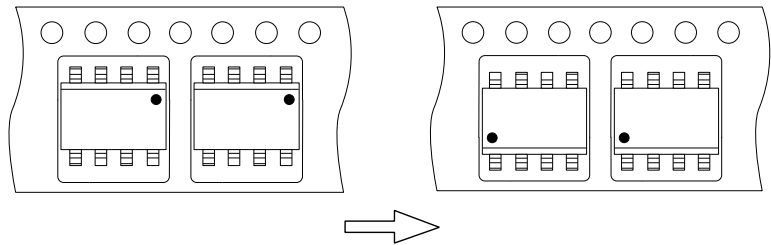


Packaging : 1000 pcs/reel

TAPING DIRECTION

PS7141L-1C-E3

PS7141L-1C-E4

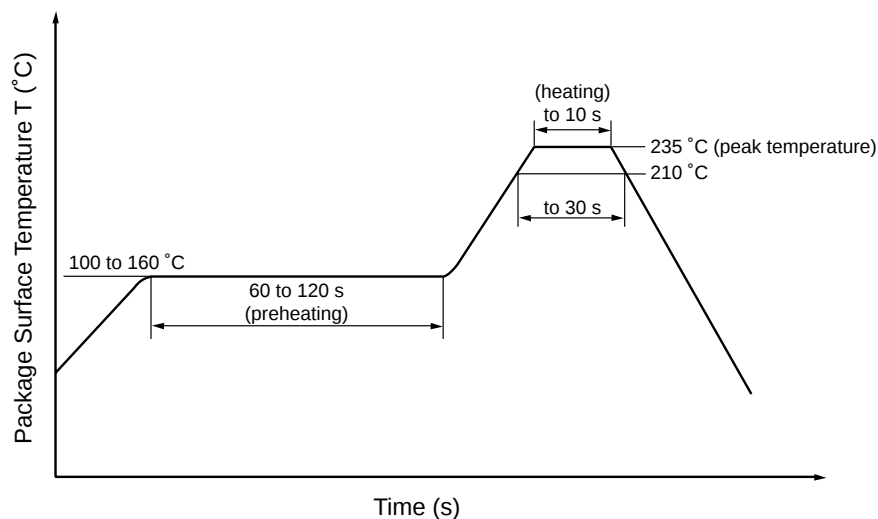


RECOMMENDED SOLDERING CONDITIONS

(1) Infrared reflow soldering

- Peak reflow temperature 235 °C or below (package surface temperature)
- Time of temperature higher than 210 °C 30 seconds or less
- Number of reflows Two
- Flux Rosin flux containing small amount of chlorine
(The flux with a maximum chlorine content of 0.2 Wt % is recommended.)

Recommended Temperature Profile of Infrared Reflow



(2) Dip soldering

- Temperature 260 °C or below (molten solder temperature)
- Time 10 seconds or less
- Number of times One
- Flux Rosin flux containing small amount of chlorine
(The flux with a maximum chlorine content of 0.2 Wt % is recommended.)

(3) Cautions

- Fluxes
Avoid removing the residual flux with freon-based cleaning solvent.

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