

FEATURES

- **1 CHANNEL TYPE**
(1a output)
- **2 CHANNEL TYPE**
(1a + 1a output)
- **DESIGNED FOR AC/DC SWITCHING LINE CHANGER**
- **SMALL PACKAGE**
6 and 8 pin DIP
- **LOW OFFSET VOLTAGE**
- **SURFACE MOUNT TYPE LEAD**
PS7113L-1A,-2A

DESCRIPTION

PS7113-1A,-2A and PS7113L-1A,-2A are solid state relays containing a GaAs LED on the light emitting side (input side) and MOS FETs on the output side. They are suitable for analog signal control because of their low offset and high linearity.

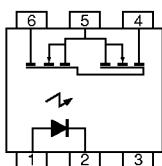
APPLICATIONS

- **EXCHANGE EQUIPMENT**
- **MEASUREMENT EQUIPMENT**
- **FA/OA EQUIPMENT**

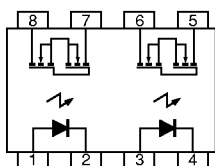
ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

PART NUMBER				PS7113-1A,-2A, PS7113L-1A,-2A		
SYMBOLS		PARAMETERS	UNITS	MIN	TYP	MAX
Diode	V _F	Forward Voltage, I _F = 10 mA	V		1.1	1.5
	I _R	Reverse Current, V _R = 5 V	μA			5.0
MOS FET	I _{OFF}	Off-State Leakage Current, V _D = 100 V	μA		0.03	1.0
Coupled	R _{ON}	On-State Resistance, I _F = 5 mA, I _L = 1 mA	Ω			2.5
	t _{ON}	Turn-on Time I _F = 10 mA, V _L = 5 V, R _L = 500 Ω, P _W ≥ 10 ms	ms			3.0
	t _{OFF}	Turn-off Time I _F = 10 mA, V _L = 5 V, R _L = 500 Ω, P _W ≥ 10 ms	ms			0.2
	R _{I-O}	Isolation Resistance, V _{I-O} = 1.0 kV	Ω	10 ⁹		
	C _{I-O}	Isolation Capacitance, V = 0 V, f = 1 MHz	pF/ch		1.1	

PS7113-1A, PS7113L-1A



PS7113-2A, PS7113L-2A



PS7113-1A,-2A, PS7113L-1A,-2A

ABSOLUTE MAXIMUM RATINGS¹ (TA = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS	
			PS7113-1A PS7113L-1A	PS7113-2A PS7113L-2A
Diode				
IF	Forward Current (DC)	mA	50	
VR	Reverse Voltage	V	5.0	
PD	Power Dissipation	mW/ch	50	
IFP	Peak Foward Current ²	A	1	
MOSFET				
VL	Break Down Voltage	V	100	
IL	Continuous Load Current	mA	350	
POUT	Power Dissipation	mW/ch	560	375
COUPLED				
BV	Isolation Voltage ³	V	1500	
PT	Total Power Dissipation	mW	610	850
TA	Operating Ambient Temp.	°C	-40 to +80	
TSTG	Storage Temperature	°C	-40 to +100	

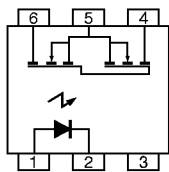
- Notes:
1. Operation in excess of any one of these parameters may result in permanent damage.
 2. PW = 100 μs, Duty Cycle = 1 %
 3. AC voltage for 1 minute at TA = 25 °C, RH = 60 % between input and output.

RECOMMENDED OPERATING CONDITIONS (TA = 25°C)

PART NUMBER		PS7113-1A,-2A, PS7113L-1A,-2A			
SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
IF	LED Operating Current	mA	2	10	20
VF	LED Off Voltage	V	0		0.5

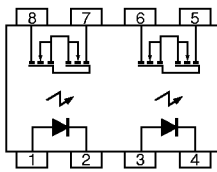
PIN CONNECTION (Top View)

PS7113-1A, PS7113L-1A



- 1. LED Anode
- 2. LED Cathode
- 3. NC
- 4. MOS FET Drain
- 5. MOS FET Source
- 6. MOS FET Drain

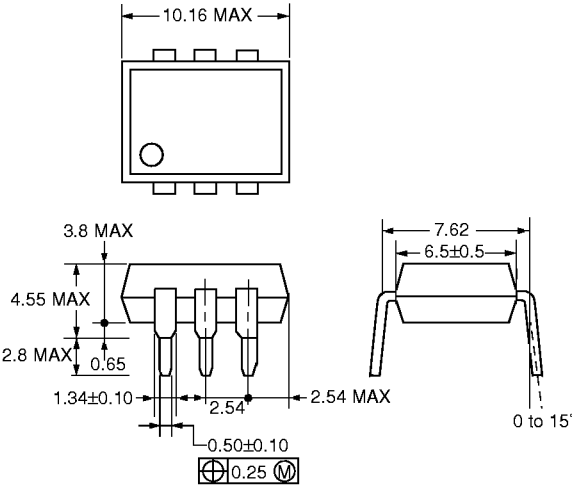
PS7113-2A, PS7113L-2A



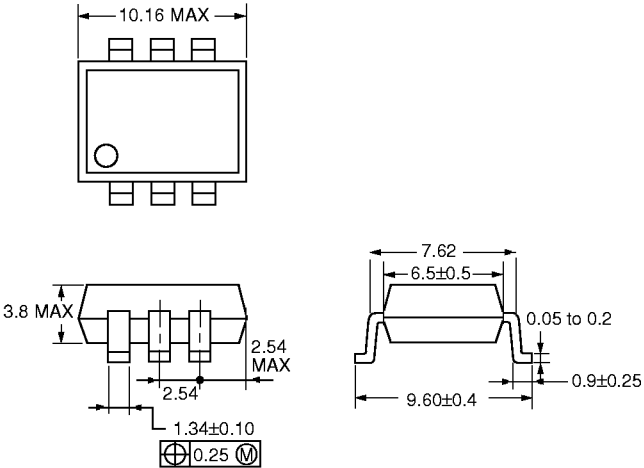
- 1. LED Anode
- 2. LED Cathode
- 3. LED Anode
- 4. LED Cathode
- 5. MOS FET
- 6. MOS FET
- 7. MOS FET
- 8. MOS FET

OUTLINE DIMENSIONS (Units in mm)

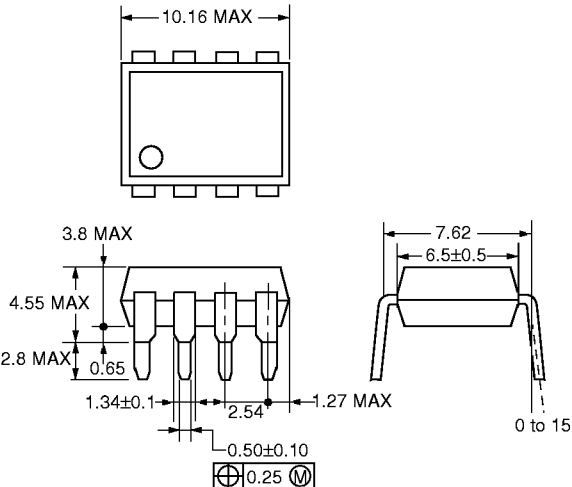
PS7113-1A



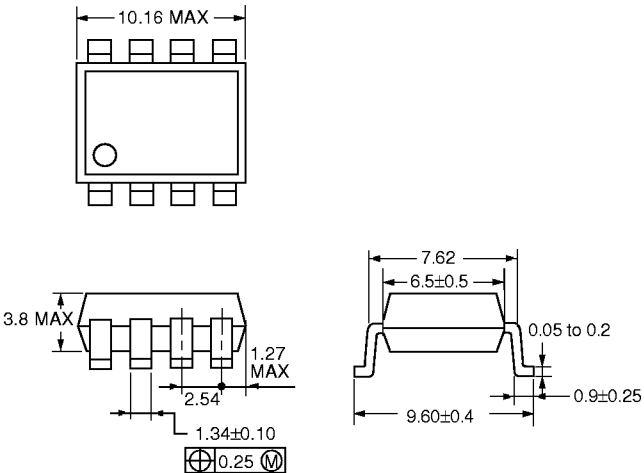
PS7113L-1A



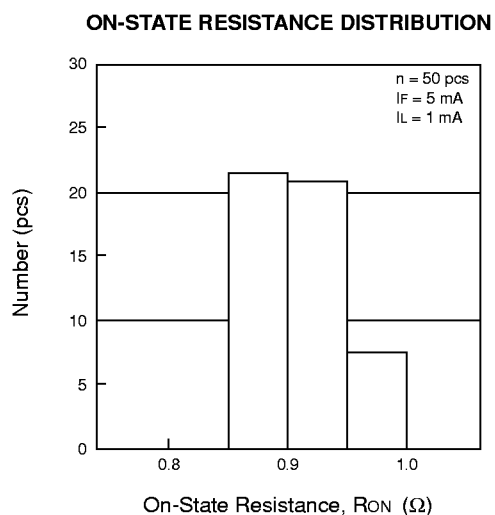
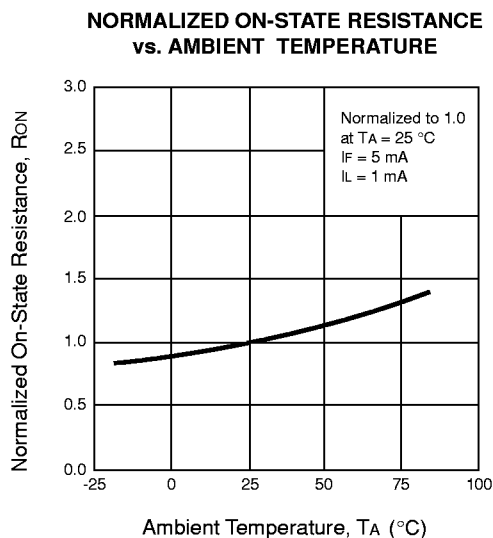
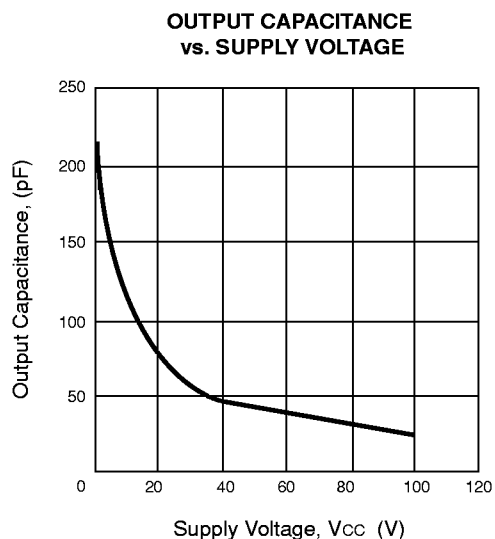
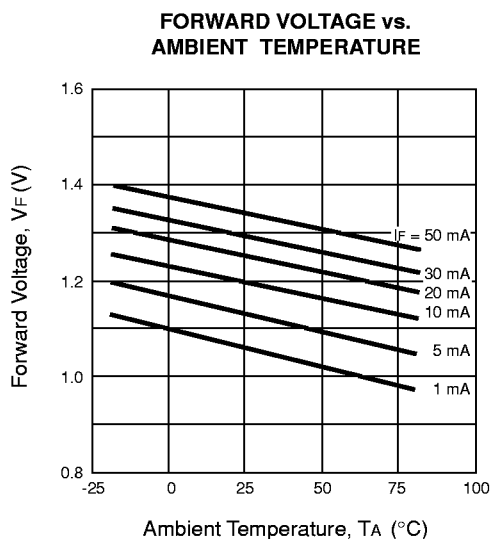
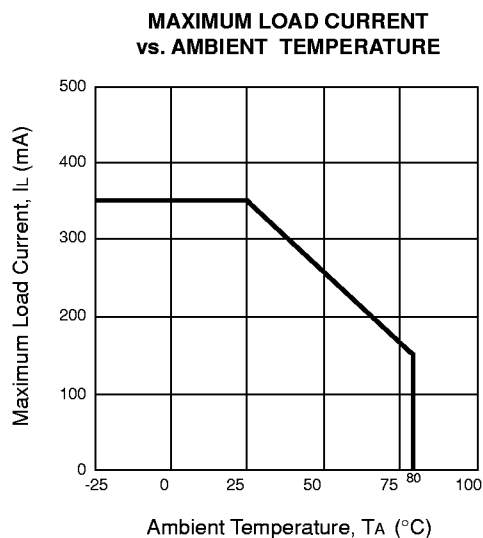
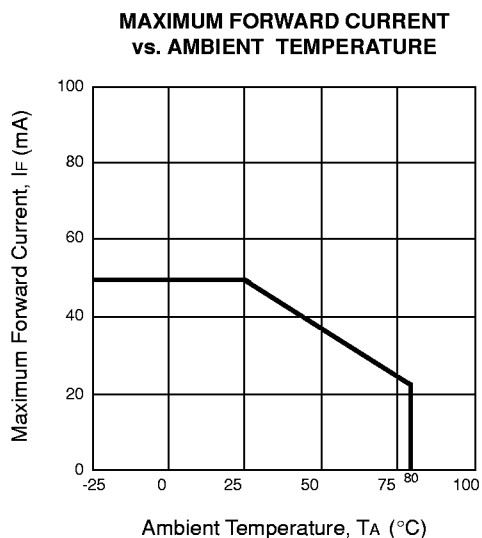
PS7113-2A



PS7113L-2A

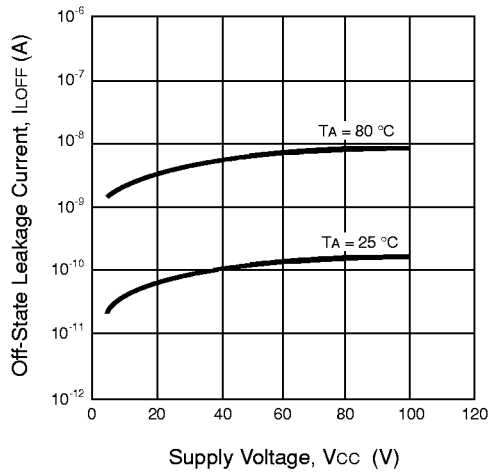


TYPICAL PERFORMANCE CURVES ($T_A = 25\text{ }^{\circ}\text{C}$)

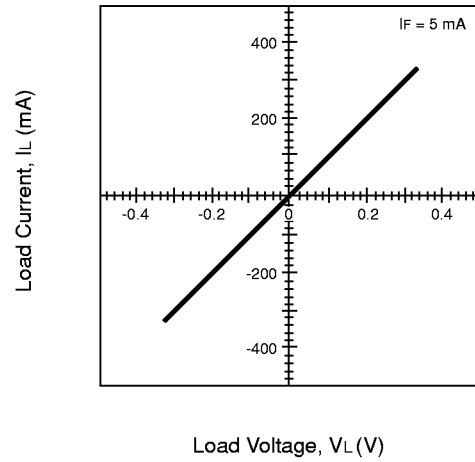


TYPICAL PERFORMANCE CURVES ($T_A = 25\text{ }^{\circ}\text{C}$)

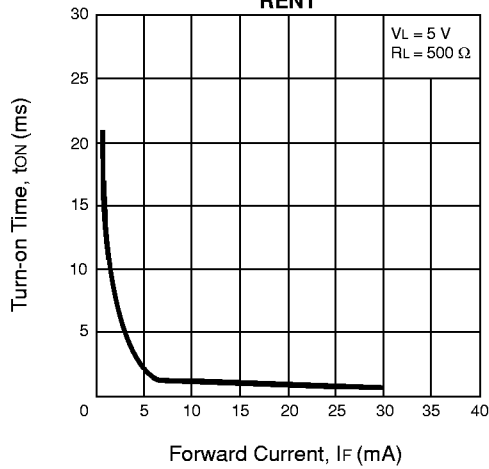
**OFF-STATE LEAKAGE CURRENT
vs. SUPPLY VOLTAGE**



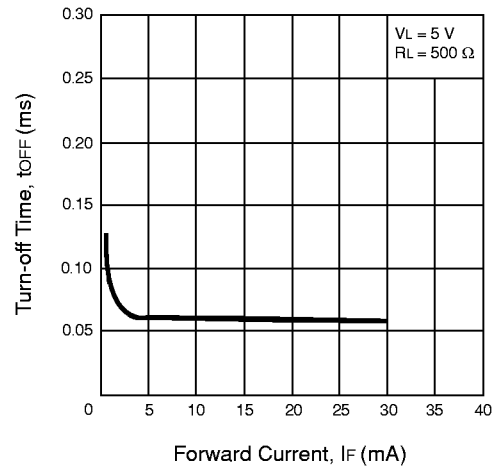
LOAD CURRENT vs. LOAD VOLTAGE



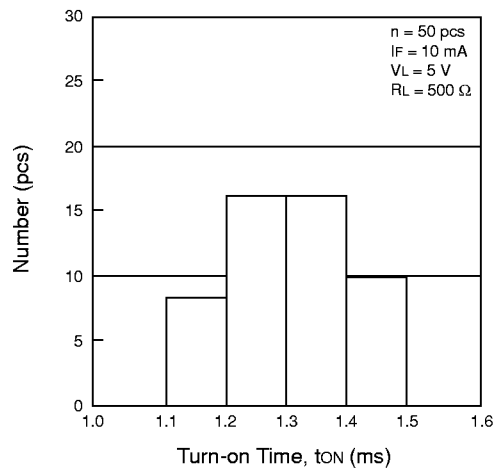
TURN-ON TIME VS. FORWARD CURRENT



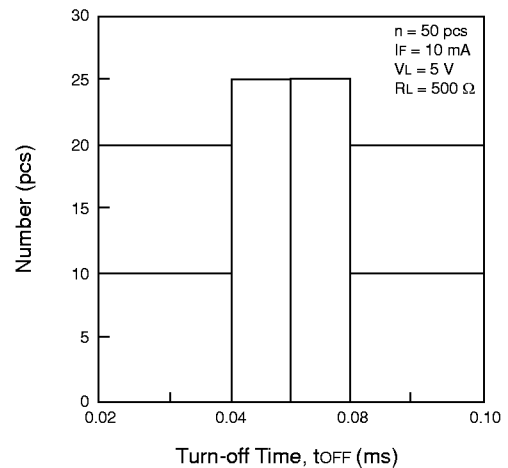
TURN-OFF TIME VS. FORWARD CURRENT



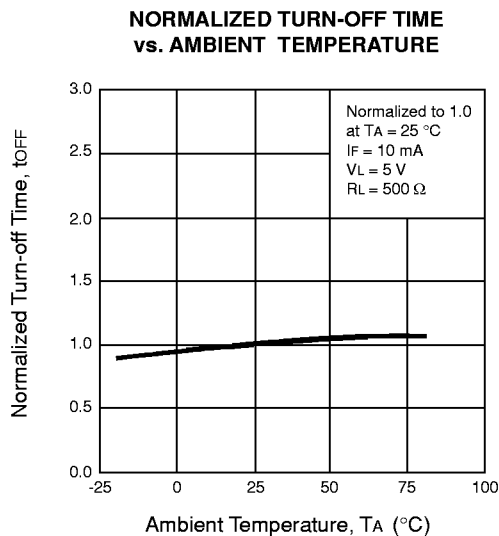
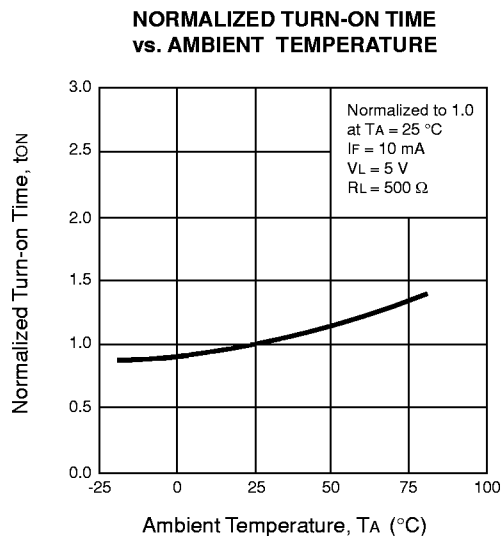
TURN-ON TIME DISTRIBUTION



TURN-OFF TIME DISTRIBUTION

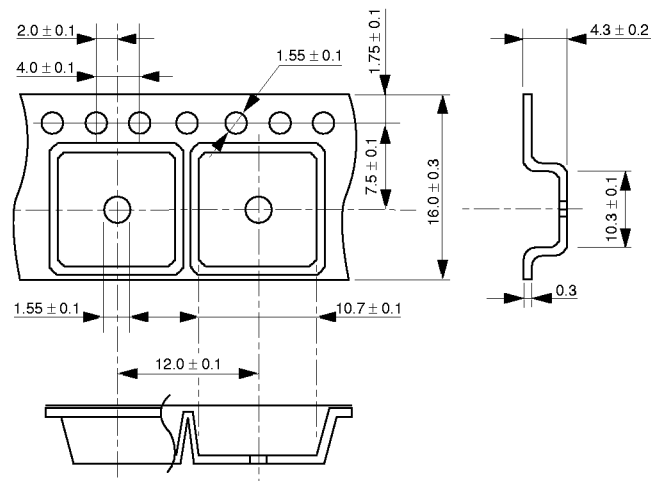


TYPICAL PERFORMANCE CURVES (T_A = 25 °C)

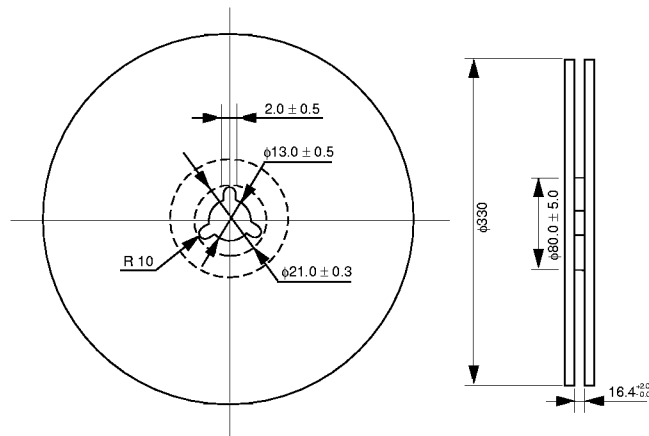


TAPING SPECIFICATIONS (Units in mm)

OUTLINE AND DIMENSIONS (TAPE)



OUTLINE AND DIMENSIONS (REEL)

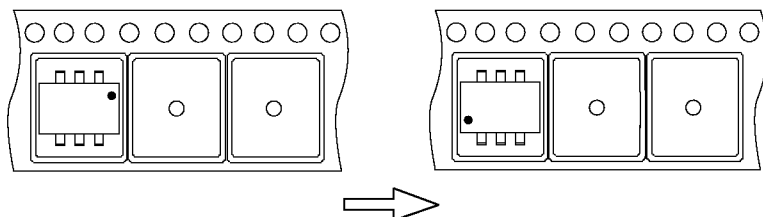


Notes:
1. Packaging : 1000 pcs/reel

TAPING DIRECTION

PS7113-1A-E3
PS7113-2A-E3

PS7113L-1A-E4
PS7113L-2A-E4



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