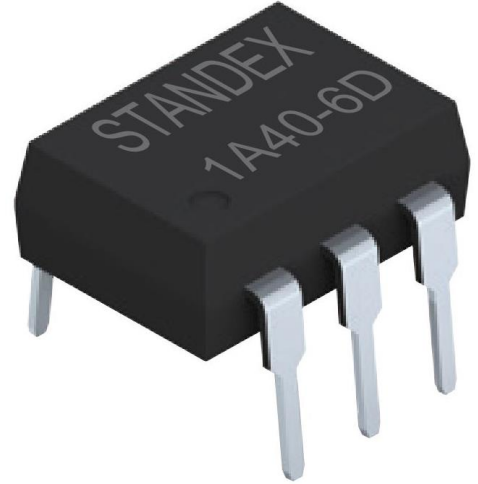


40 Series Photo-MOSFET Relay

- **Features:** High Voltage Photo MOSFET Relay, switching up to 1500 VDC/Peak AC
- THT or SMD, High I/O Isolation
- Tested in accordance with AEC-Q101, UL listed, RoHS Compliance
- **Applications:** EV/Battery Management Systems, I/O Modules, Sensing Equipment, Solar
- **Markets:** Automotive, Telecommunication, Test & Measurement, Security



Part Description: **SMP-XA40-6XX-X**

Number of Poles	Contact Form	Series Number	Number of Pins	Mounting Type	Package Style	Special Features
1	A	40	6	D, S	Tube, Reel	Nil, Q, R

See page 4 for Glossary

Maximum Ratings @ Ambient Temperature = 25°C

Parameters	Symbol	Value	Units	Condition
		1A40-6D, S		
INPUT SPECIFICATIONS				
Continuous LED Current	I_F	50	mA	-
Peak LED Current	I_{FP}	500	mA	f=100Hz, 1% Duty Cycle
LED Reverse Voltage	V_R	5	V	-
Input Power Dissipation	P_{IN}	75	mW	-
OUTPUT SPECIFICATIONS				
Load Voltage	V_L	1500	DC or Peak AC	-
Load Current	I_L	45	mA	Schematic 1 (AC or DC)
	I_L	50	mA	Schematic 2 (DC)
	I_L	70	mA	Schematic 3 (DC)
Peak Load Current	I_{PEAK}	180	mA	1 ms, 1 shot
Output Power Dissipation	P_{OUT}	450	mW	-
GENERAL SPECIFICATIONS				
Total Power Dissipation	P_T	500	mW	-
I/O Breakdown Voltage	$V_{I/O}$	3750	V_{RMS}	-
I/O Breakdown Voltage	$V_{I/O}$	5000	V_{RMS}	Suffix R
Operating Temperature	T_{OPR}	-40/+85	°C	-
Operating Temperature	T_{OPR}	-40/+105	°C	Suffix Q
Storage Temperature	T_{STG}	-40/+100	°C	-

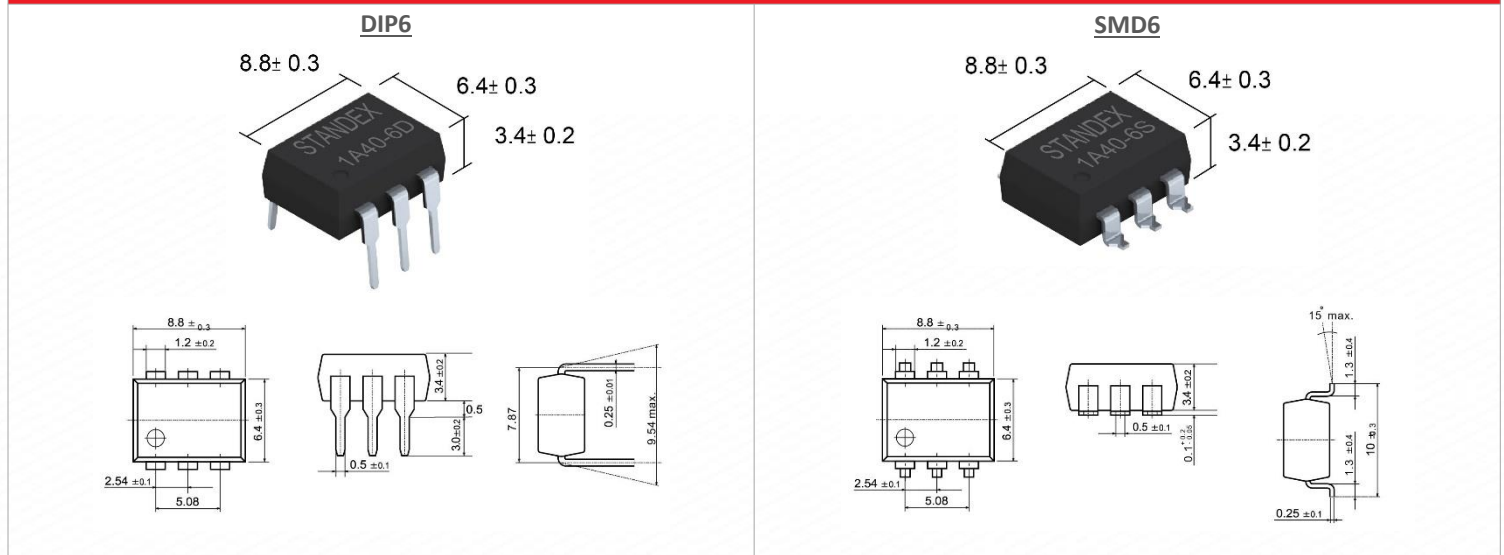


40 Series Photo-MOSFET Relay

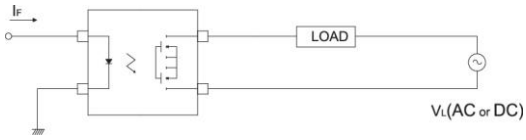
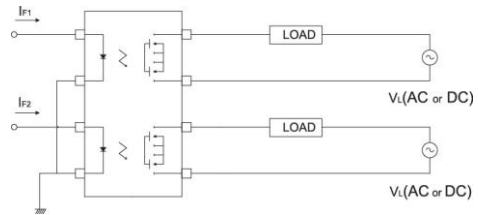
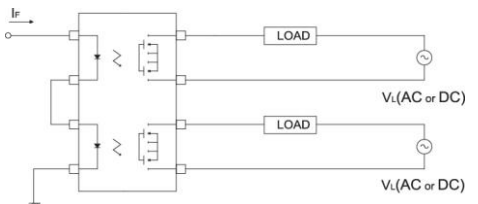
Maximum Ratings @ Ambient Temperature = 25°C

Parameters	Symbol	Min	Typ	Max	Units	Condition
INPUT SPECIFICATIONS						
LED Forward Voltage	V_F	1.0	1.17	1.5	V	$I_F = 10\text{mA}$
Operation LED Current	$I_{F\text{ ON}}$	-	0.9	5.0	mA	-
Recovery LED Voltage	$V_{F\text{ OFF}}$	0.5	1.0	-	V	-
OUTPUT SPECIFICATIONS						
On Resistance: Drain to Drain	R_{ON}	-	110	200	Ω	$I_F = 10\text{mA}$, $I_L = \text{Rating}$ (within 1 sec.)
	R_{ON}	-	180	300	Ω	$I_F = 10\text{mA}$, $I_L < 5\text{mA}$
Off-State Leakage Current	I_{LEAK}	-	-	10	μA	$I_F = 10\text{mA}$, $V_L = 40\text{V}$
Output Capacitance	C_{OUT}	-	83	-	ρF	$V_L = 0\text{V}$, $f = 1\text{MHz}$
TRANSMISSION SPECIFICATIONS						
Turn-On Time	T_{ON}	-	0.3	1.0	ms	$I_F = 10\text{mA}$, $I_L = \text{Rating}$
Turn-Off Time	T_{OFF}	-	0.05	0.5	ms	
COUPLED SPECIFICATIONS						
I/O Insulation Resistance	$R_{\text{I/O}}$	10^{10}	-	-	Ω	-
I/O Capacitance	$C_{\text{I/O}}$	-	1.3	-	ρF	$f = 1\text{MHz}$

Photo-MOSFET Relay Dimensions (Tolerances acc. to ISO 2768-mp)

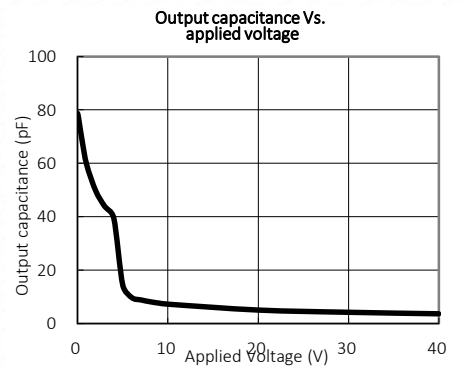
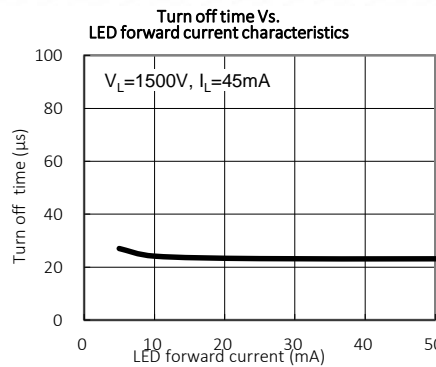
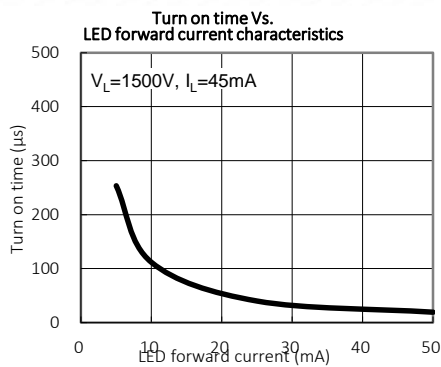
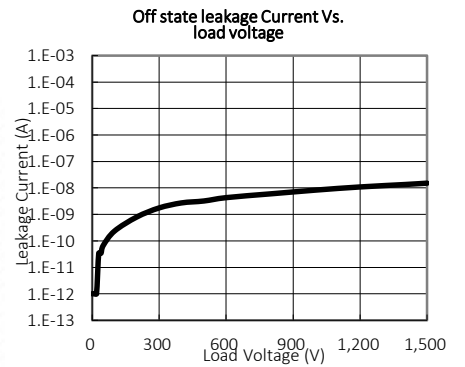
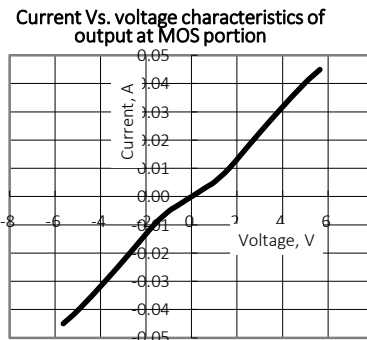
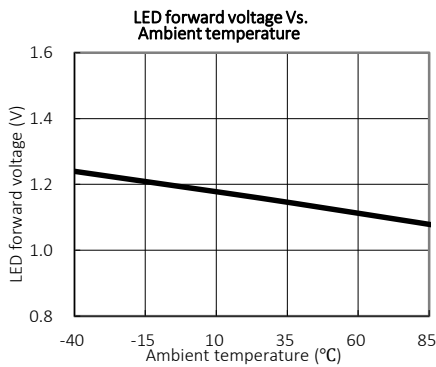
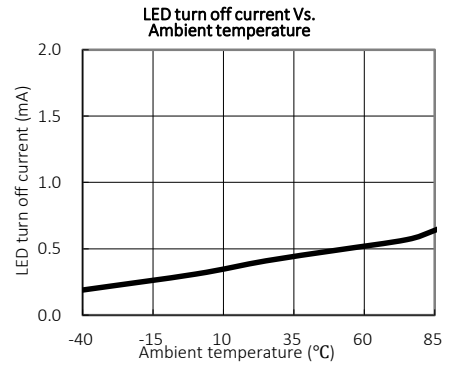
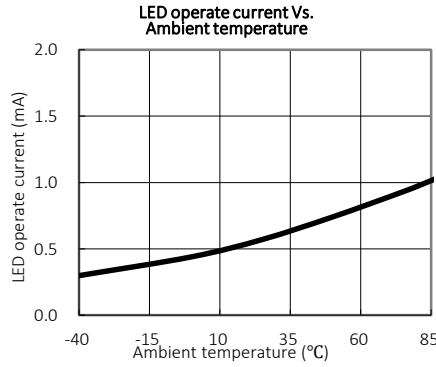
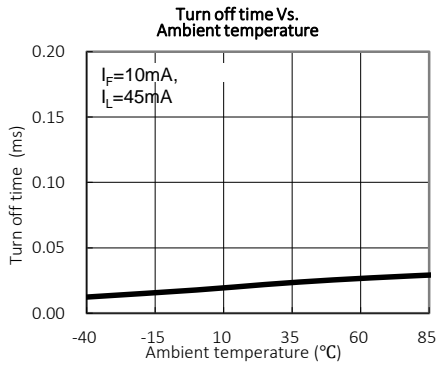
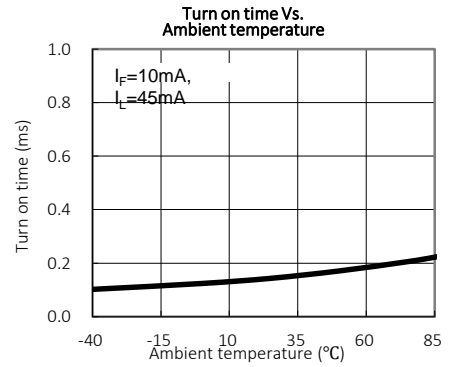
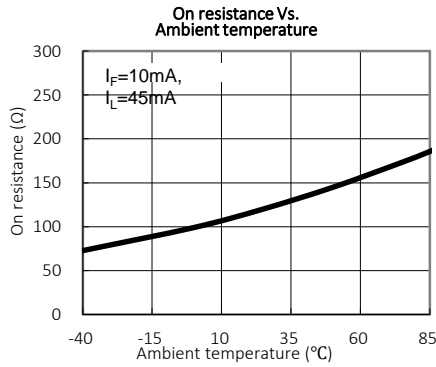
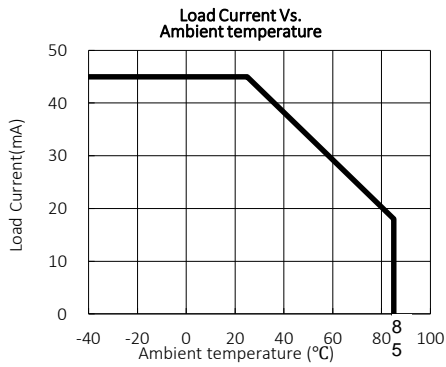


40 Series Photo-MOSFET Relay

Photo-MOSFET Relay Load Connection Method			
TYPE	LOAD	CONNECTION	FEATURE
4-PIN	AC OR DC		Control bi-directional signal
8-PIN	AC OR DC		2 inputs and 2 outputs
			1 input and 2 outputs

40 Series Photo-MOSFET Relay

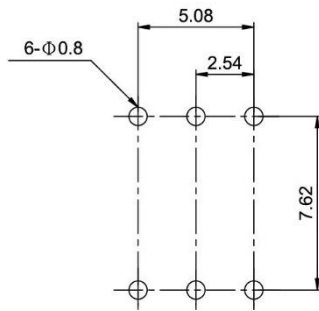
Photo MOSFET Relay Reference Data



40 Series Photo-MOSFET Relay

Photo MOSFET Relay Recommended PCB Pad Layout (Tolerances acc. to ISO 2768-mp)

DIP4 (Bottom View)



SMD6 (Top View)

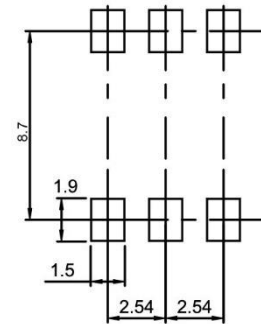
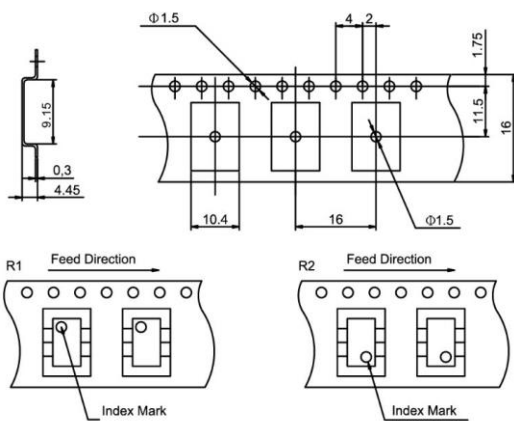


Photo MOSFET Relay Tape & Reel Packaging (1,000 pcs per reel) / THT Packaging (50 pcs per tube)



SMD6

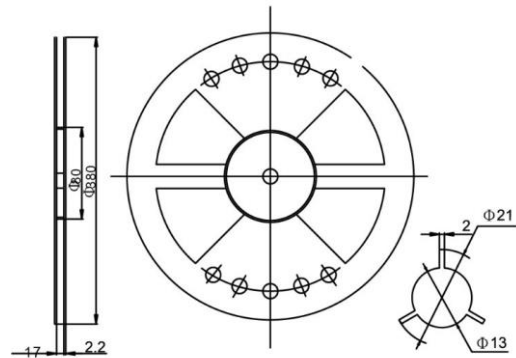
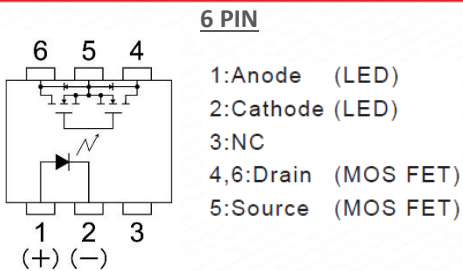


Photo MOSFET Relay Pin-Out (Top View)



Glossary Options

D	DIP (Dual-In-Line Package)
S	SMD (Surface Mount Design)
P	SOP (Small-Outline Package)
Q	AEC-Q101 / High Temperature
R	Reinforced Isolation

Please note: All technical specifications in this series datasheet refer to the standard product range. Modifications in the sense of technical progress are reserved. For general information only. For more specific information, please consult the product datasheet, available upon request.

This series datasheet could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein. These changes will be incorporated in future revisions.

For deviating values, latest specifications and product details, please contact your nearest sales office.