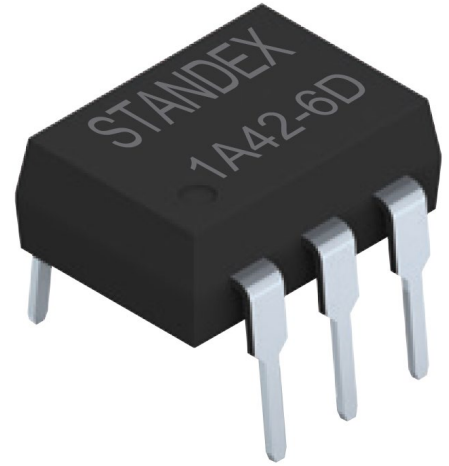


42 Series Photo-MOSFET Relay

- **Features:** High Current Photo MOSFET Relay, switching up to 5 Amps
- **Form 1A and 2A with variable pinouts of THT, SMD or SOP**
- **Low Off-State Leakage Current 1 μ A, Low ON-Resistance 20 m Ω and Output Capacitance 1300 pF max.**
- **UL recognized component; RoHS compliant**
- **Applications:** Automated Test Equipment, Automotive E-Vehicle, Modems, I/O Modules, Semiconductor Testers
- **Markets:** Automotive, Telecommunication, Test & Measurement, Security



Part Description: **SMP-XA42-XXX-X**

Number of Poles	Contact Form	Series Number	Number of Pins	Mounting Type	Package Style	Special Features
1, 2	A	42	4, 6, 8	D, S, P	Tube, Reel	Nil, R

See below for Glossary

Maximum Ratings @ Ambient Temperature = 25°C

Parameters	Symbol	Value					Units	Condition
		1A42-4P	2A42-8P	1A42-4D, S	2A42-8D, S	1A42-6D, S		
INPUT SPECIFICATIONS								
Continuous LED Current	I_F	50	50	50	50	50	mA	-
Peak LED Current	I_{FP}	500	500	500	500	500	mA	f=100Hz, 1% Duty Cycle
LED Reverse Voltage	V_R	5	5	5	5	5	V	-
Input Power Dissipation	P_{IN}	75	75	75	75	75	mW	-
OUTPUT SPECIFICATIONS								
Load Voltage	V_L	60	60	60	60	60	DC or Peak AC	-
Load Current	I_L	2.5	2.0	2.5	2.0	5.0	A	-
Peak Load Current	I_{PEAK}	6.0	6.0	6.0	6.0	10.0	A	1 ms, 1 shot
Output Power Dissipation	P_{OUT}	400	450	400	450	800	mW	-
GENERAL SPECIFICATIONS								
Total Power Dissipation	P_T	450	500	450	500	850	mW	-
I/O Breakdown Voltage	$V_{I/O}$	1500	1500	3750	3750	3750	V_{RMS}	-
I/O Breakdown Voltage	$V_{I/O}$	3750	3750	5000	5000	5000	V_{RMS}	Suffix R
Operating Temperature	T_{OPR}	-40/+85	-40/+85	-40/+85	-40/+85	-40/+85	°C	-
Storage Temperature	T_{STG}	-40/+100	-40/+100	-40/+100	-40/+100	-40/+100	°C	-



RoHS

Glossary Options

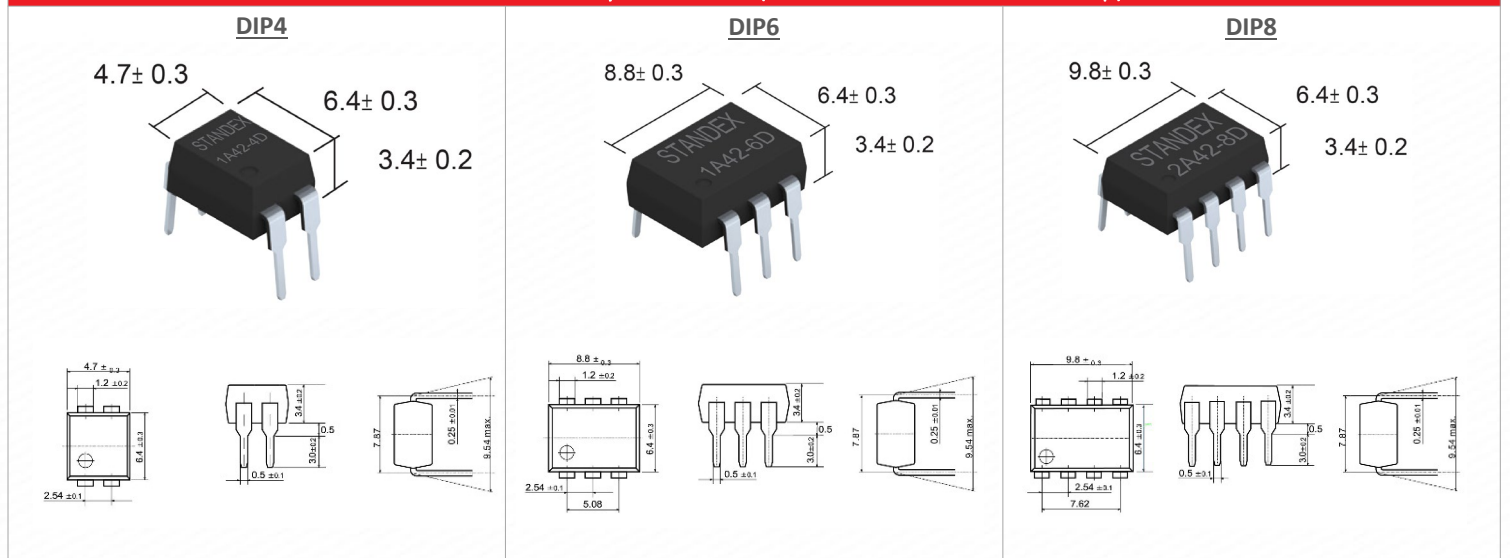
D	DIP (Dual-In-Line Package)
S	SMD (Surface Mount Design)
P	SOP (Small-Outline Package)
Q	AEC-Q101 / High Temperature
R	Reinforced Isolation

42 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	1.37	1.5	V	$I_F = 10\text{mA}$
Operation LED Current (All)	$I_{F\text{ ON}}$	-	1.0	5.0	mA	-
Operation LED Current (DIP6)	$I_{F\text{ ON}}$	-	1.7	5.0	mA	-
Recovery LED Voltage	$V_{F\text{ OFF}}$	0.5	1.2	-	V	-
OUTPUT SPECIFICATIONS						
On-Resistance: Drain to Drain (All)	R_{ON}	-	0.053	0.064	Ω	$I_F = 5\text{mA}, I_L = \text{Rating (within 1 sec.)}$
On-Resistance: Drain to Drain (DIP6)	R_{ON}	-	0.02	0.032	Ω	$I_F = 5\text{mA}, I_L = \text{Rating (within 1 sec.)}$
Off-State Leakage Current	I_{LEAK}	-	-	1.0	μA	$V_L = 60\text{V}$
Output Capacitance	C_{OUT}	-	400	-	ρF	$V_L = 0\text{V}, f = 1\text{MHz}$
Output Capacitance	C_{OUT}	-	1300	-	ρF	$V_L = 0\text{V}, f = 1\text{MHz}$
TRANSMISSION SPECIFICATIONS						
Turn-On Time	T_{ON}	-	0.8	3.0	ms	$I_F = 5\text{mA}, I_L = \text{Rating (for SOP/DIP4,8 type)}$
Turn-Off Time	T_{OFF}	-	0.15	0.5	ms	
Turn-On Time	T_{ON}	-	1.2	3.0	ms	$I_F = 10\text{mA}, I_L = \text{Rating (for DIP6 type)}$
Turn-Off Time	T_{OFF}	-	0.15	0.5	ms	
COUPLED SPECIFICATIONS						
I/O Insulation Resistance	$R_{\text{I/O}}$	10^9	-	-	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)



42 Series Photo-MOSFET Relay

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

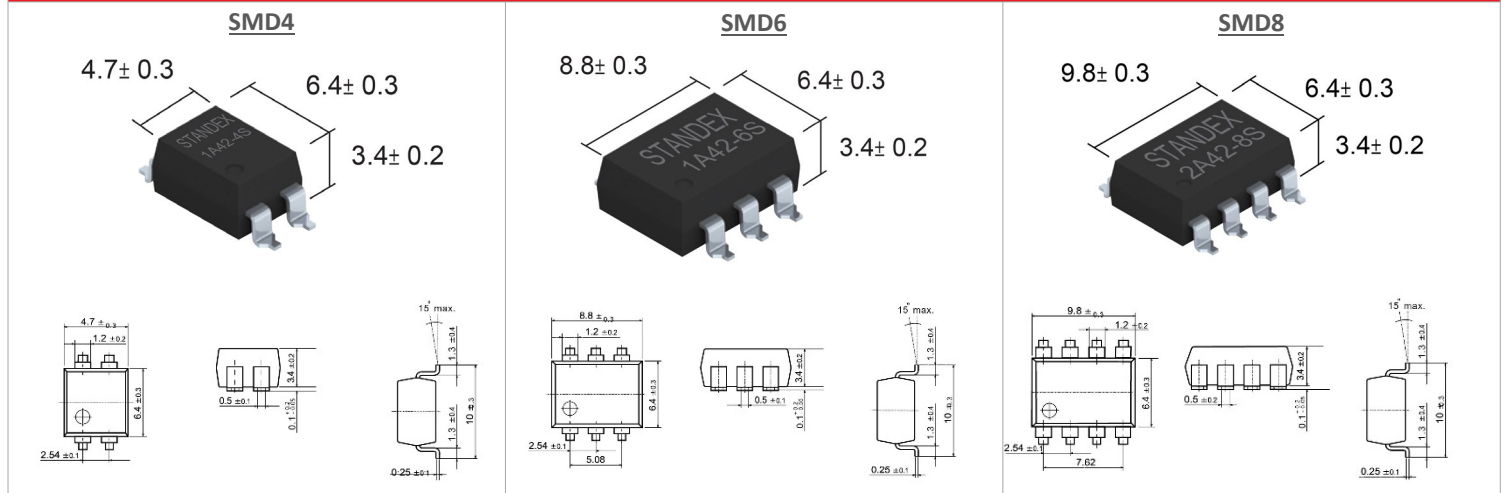


Photo-MOSFET Relay Dimensions (Tolerances acc. to ISO 2768-mp)

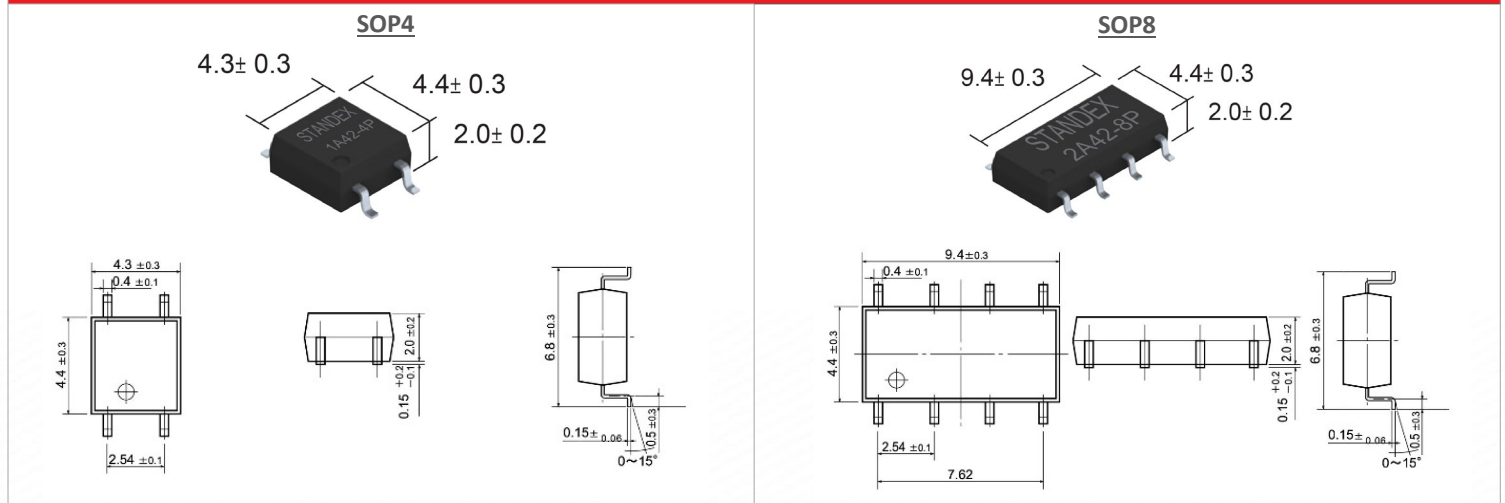
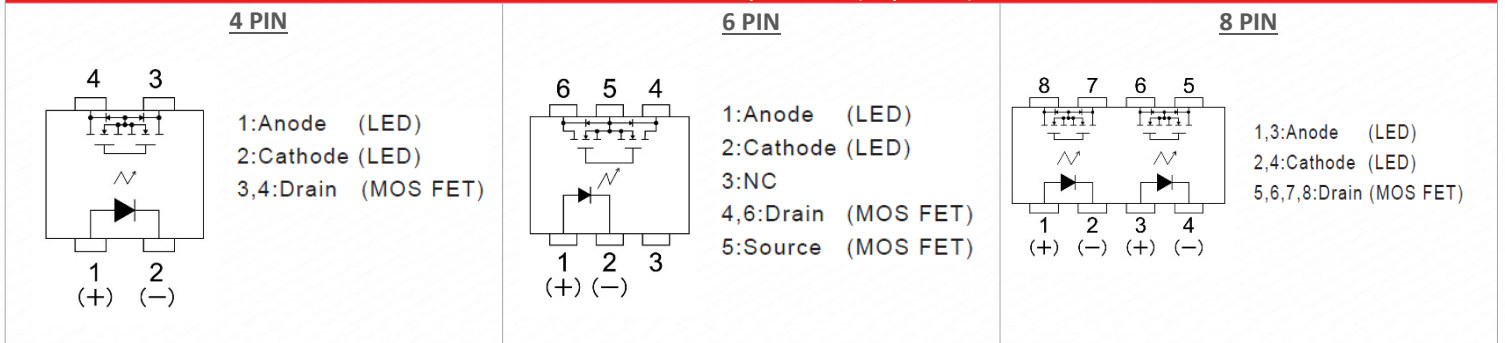


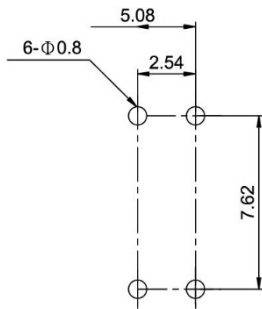
Photo MOSFET Relay Pin-Out (Top View)



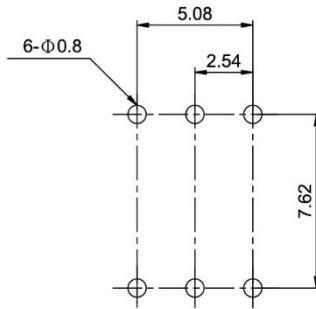
42 Series Photo-MOSFET Relay

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

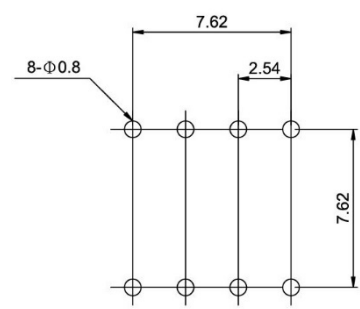
DIP4 (Bottom View)



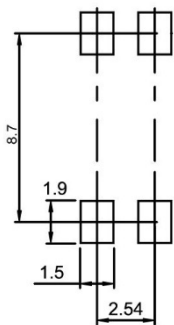
DIP6 (Bottom View)



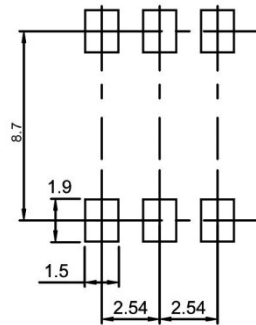
DIP8 (Bottom View)



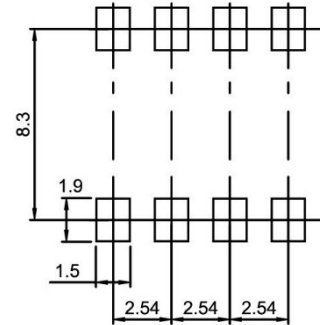
SMD4 (Top View)



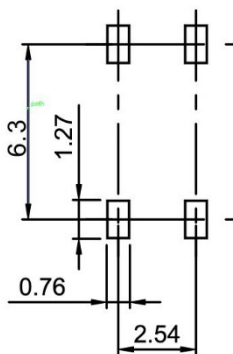
SMD6 (Top View)



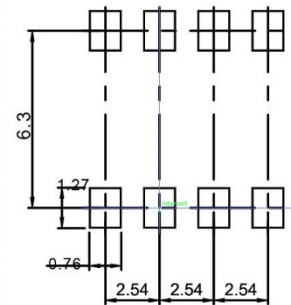
SMD8 (Top View)



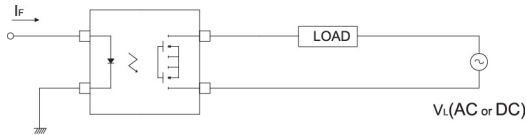
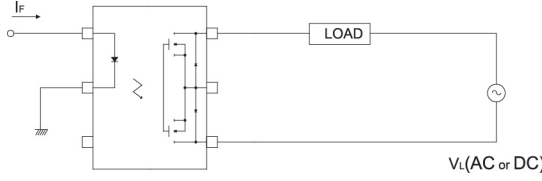
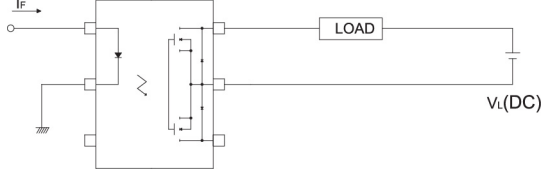
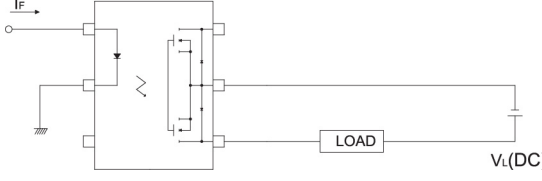
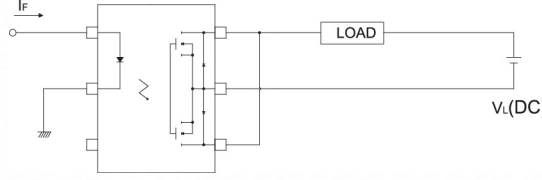
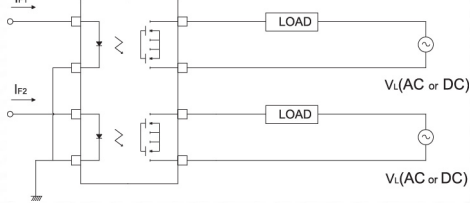
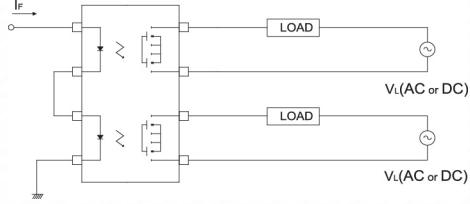
SOP4 (Top View)



SOP8 (Top View)

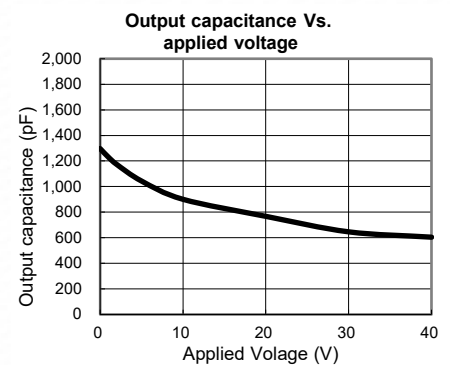
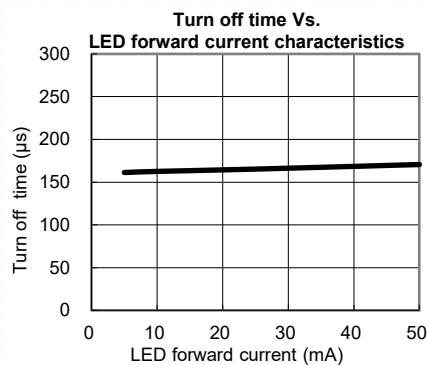
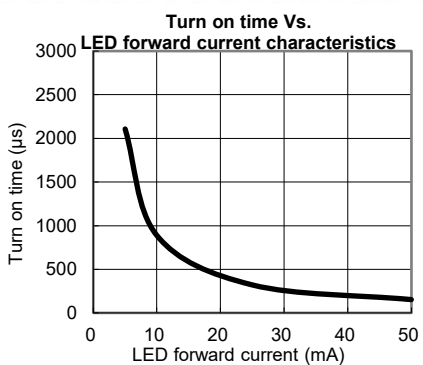
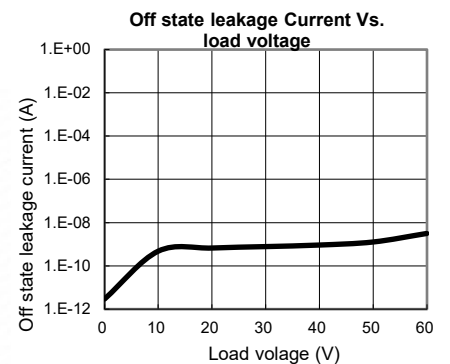
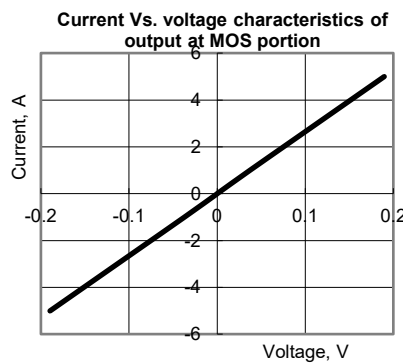
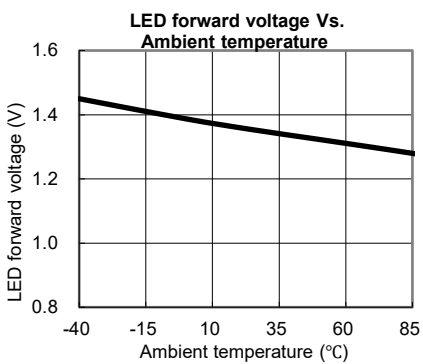
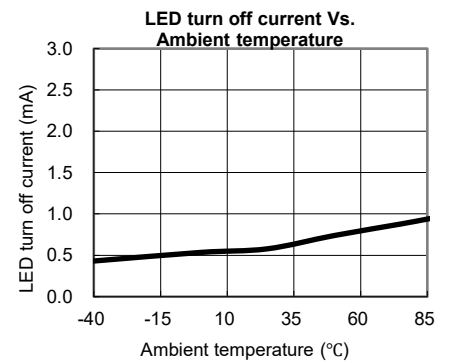
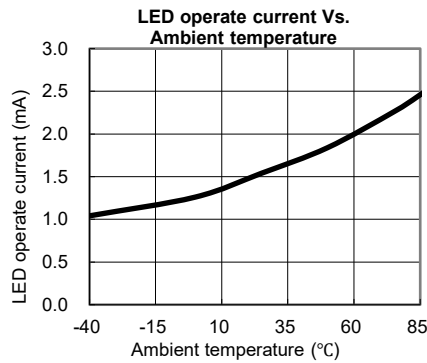
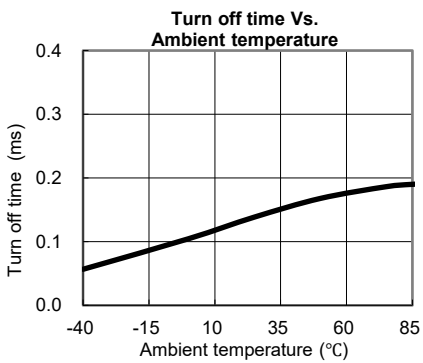
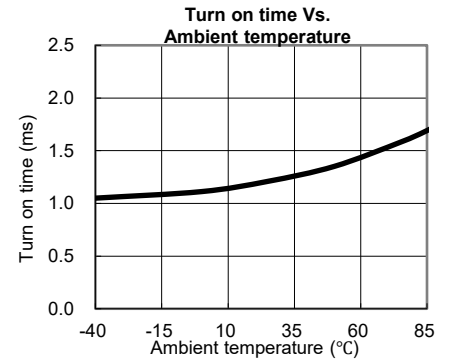
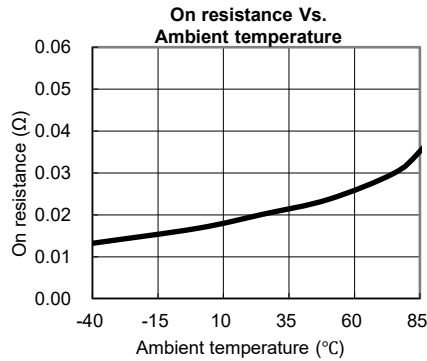
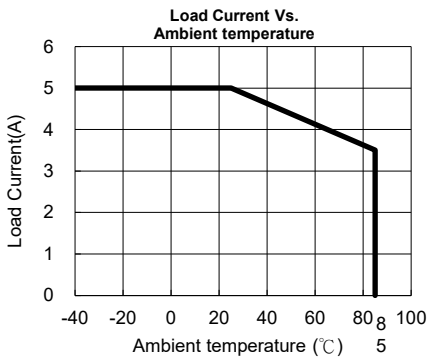


42 Series Photo-MOSFET Relay

Photo-MOSFET Relay Load Connection Method			
TYPE	LOAD	CONNECTION	FEATURE
4-PIN	AC or DC		Control bi-directional signal
6-PIN	AC or DC		Control bi-directional signal
	DC		On-Resistance is 1/2 of connection 1
			2-Make-contacts (Source Common)
	DC		On-Resistance is 1/2 of connection 2
8-PIN	AC or DC		2 inputs and 2 outputs
			1 input and 2 outputs

42 Series Photo-MOSFET Relay

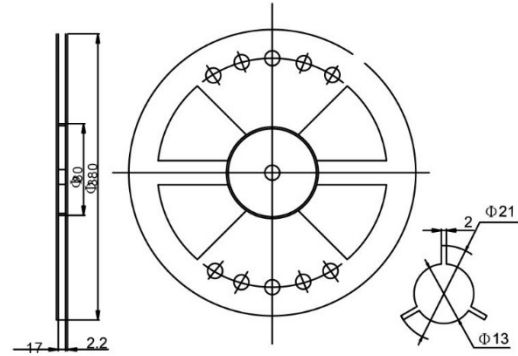
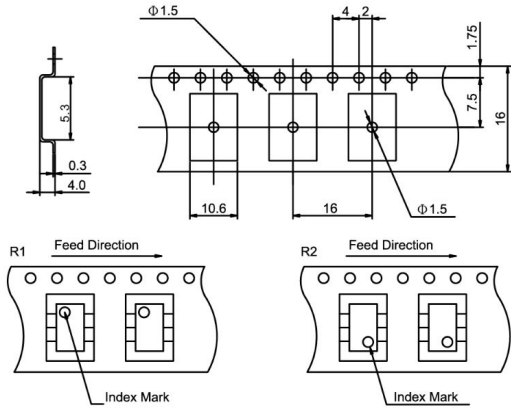
Photo MOSFET Relay Reference Data



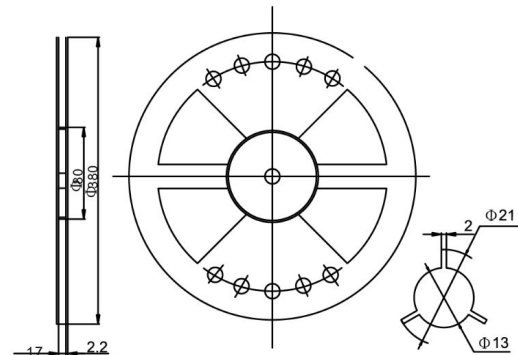
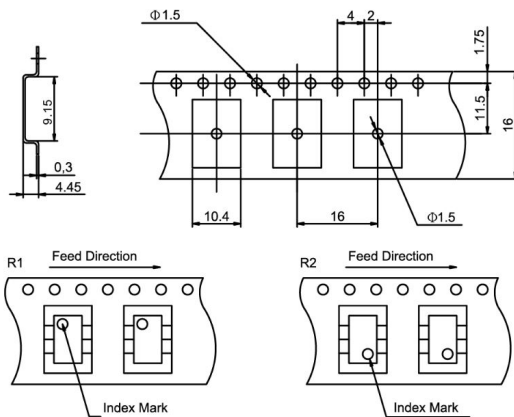
42 Series Photo-MOSFET Relay

Photo MOSFET Relay Tape & Reel Packaging (1,000 pcs per reel)

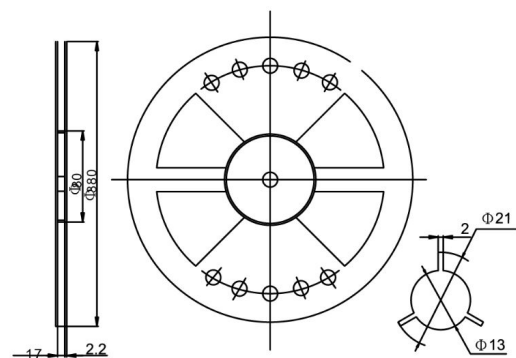
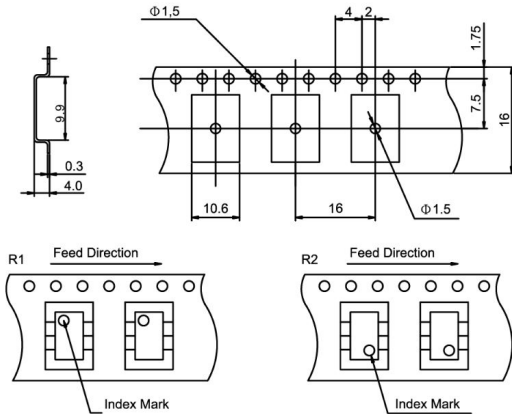
SMD4



SMD6



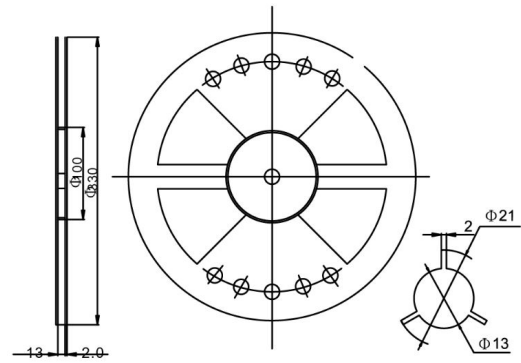
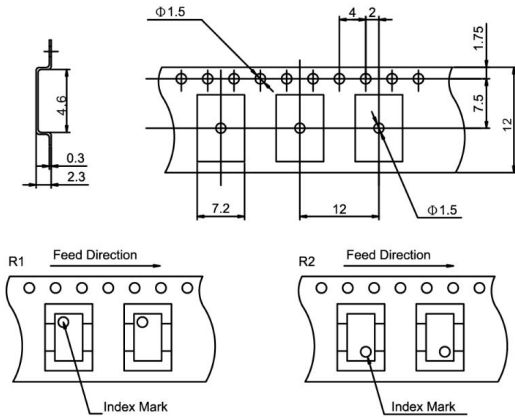
SMD8



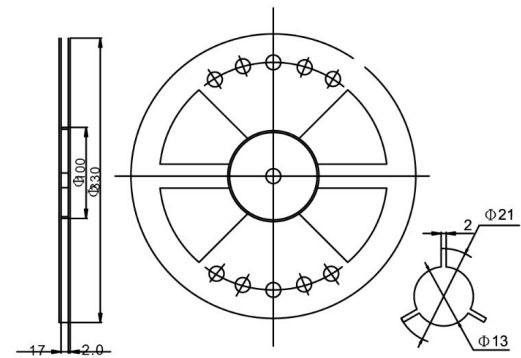
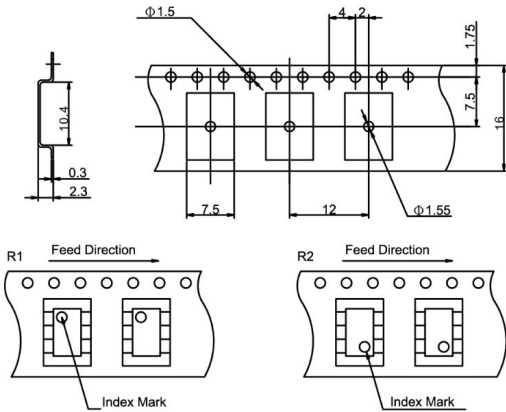
42 Series Photo-MOSFET Relay

Photo MOSFET Relay Tape & Reel Packaging (1,000 pcs per reel)

SOP4



SOP8



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.