

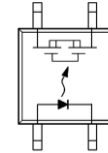
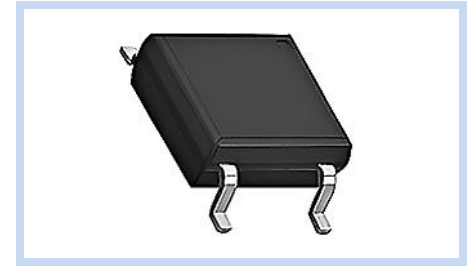
# SSR Relay NO-1A AC/DC 60V 0.5A SOP-4 Low Leakage

SSR1A1IA50IS4

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## FEATURE

- Normally Open (1-Form-A) Solid State Relay
- AC/DC Output Load Compatible
- Isolation Voltage: 1500 Vrms
- Application: Telecommunications, Measuring and Testing Equipment, Industrial Control, Security Systems
- In Accordance with Safety Class UL 1577 Standard



## MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Input Continuous LED Current	$I_F$	50	mA
Input Peak LED Current	$I_{FP}$	1	A
Input LED Reverse Voltage	$V_R$	5	V
Input Power Dissipation	$P_{In}$	75	mW
Output Load Voltage	$V_L$	60	V
Output Load Current	$I_L$	500	mA
Output Peak Load Current	$I_{Peak}$	1	A
Output Power Dissipation	$P_{out}$	300	mW
Total Power Dissipation	$P_T$	350	mW
Isolation Voltage	$V_{ISO}$	1500	$V_{RMS}$
Operating Temperature Range	$T_{Opr}$	-40~+85	°C
Storage Temperature Range	$T_{Stg}$	-40~+100	°C
Soldering Temperature	$T_{SOL}$	260	°C

## ELECTRICAL CHARACTERISTICS

Input Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
LED Forward Voltage	$I_F=10mA$	$V_F$	--	1.2	1.5	V
Operation LED Current	--	$I_{F(On)}$	--	0.5	2.0	mA
Recovery LED Current	--	$I_{F(Off)}$	0.1	0.35	--	mA
Recovery LED Voltage	--	$V_{F(Off)}$	0.7	--	--	V
Output Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
On-Resistance	$I_F=5mA, I_L=100mA$ , Time to flow is within 1 sec	$R_{(On)}$	--	0.8	1.5	$\Omega$
Off-State Leakage Current	$V_L=Rating$	$I_{Leak}$	--	1	10	nA
Output Capacitance	$V_L=0, f=1MHz$	$C_{Out}$	--	28	--	pF
Transmission Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Turn-On Time	$I_F=5mA, I_L=100mA$	$t_{on}$	--	0.25	0.35	ms
Turn-Off Time		$t_{off}$	--	0.02	0.05	ms
Coupled Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
I/O Isolation Resistance	$V_{IO}=500V_{DC}$	$R_{IO}$	$10^{10}$	--	--	$\Omega$
I/O Capacitance	$f=1MHz$	$C_{IO}$	--	0.8	1.5	pF

Note:  $T_A=25^\circ C$  unless otherwise noted.

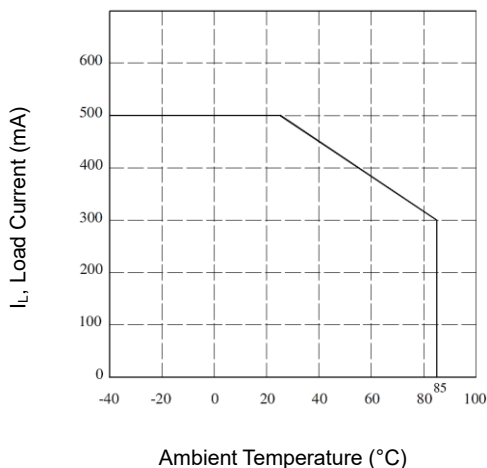
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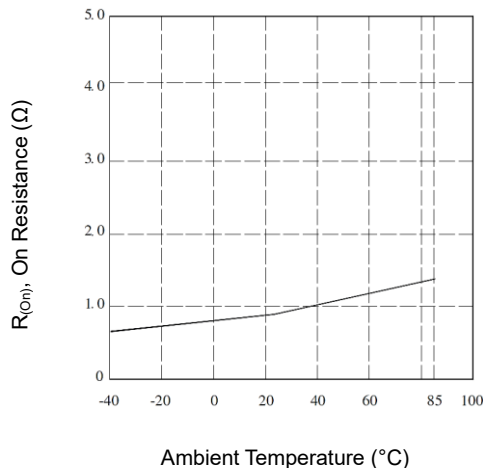
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## CHARACTERISTIC CURVES

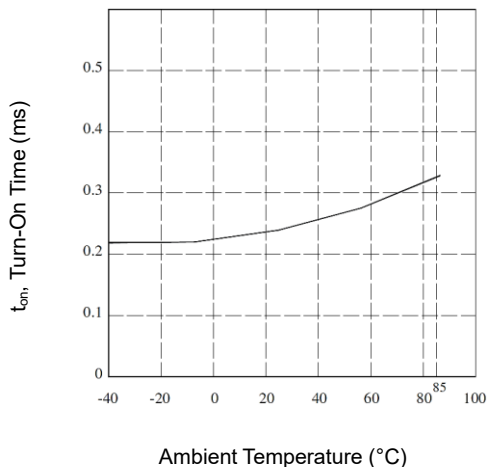
Load Current vs. Temperature



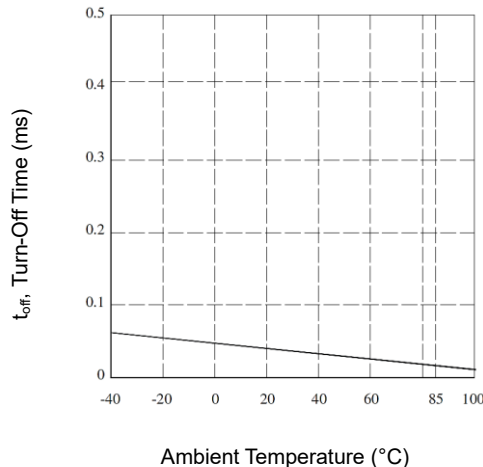
On Resistance vs. Temperature



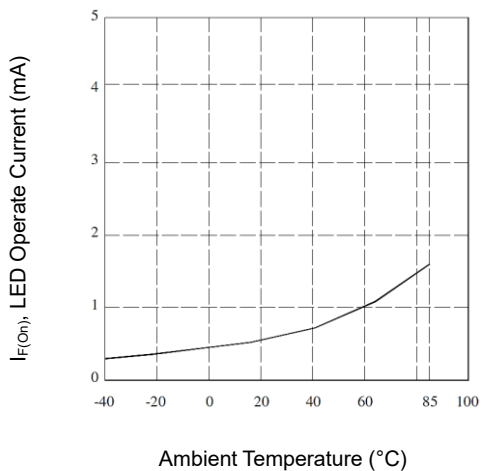
Turn-On Time vs. Temperature



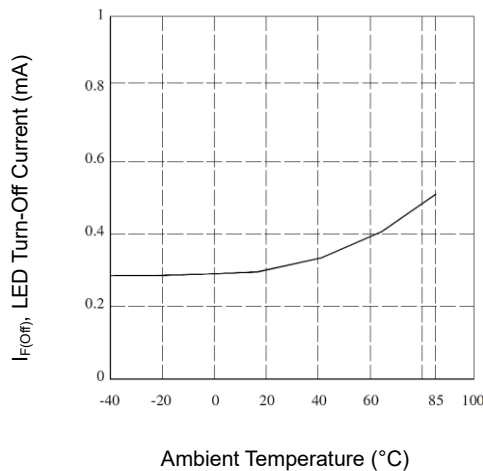
Turn-Off Time vs. Temperature



LED Operate Current vs. Temperature



LED Turn-Off Current vs. Temperature



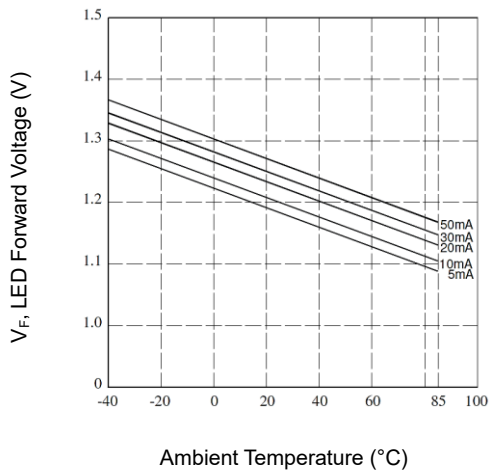
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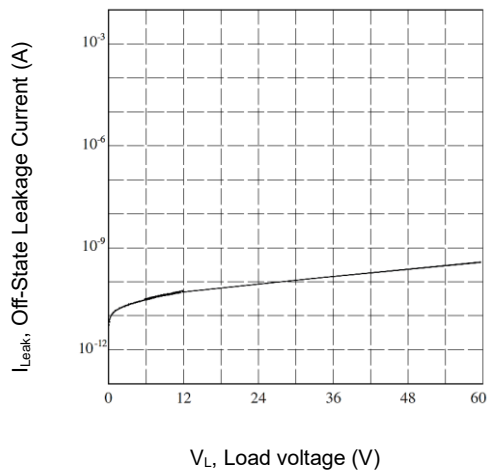
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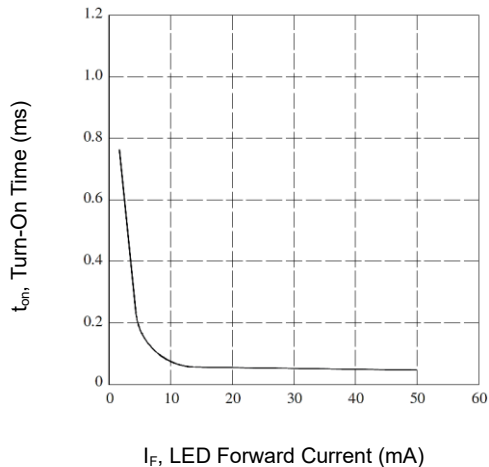
LED Forward Voltage vs. Temperature



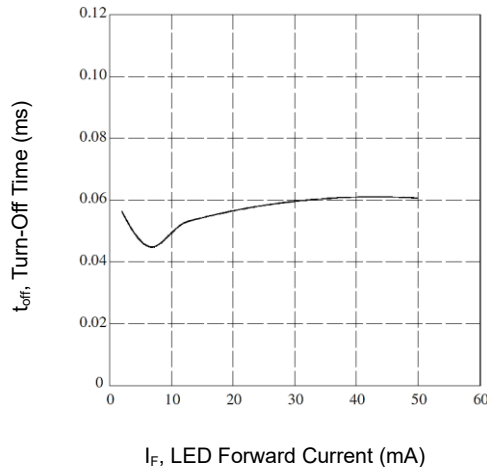
Off-State Leakage Current vs. Load Voltage



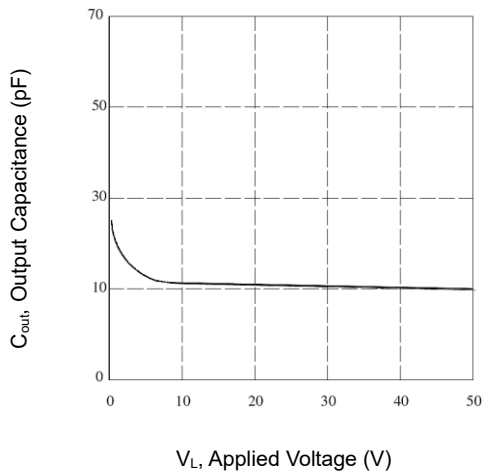
LED Forward Current vs. Turn-On Time



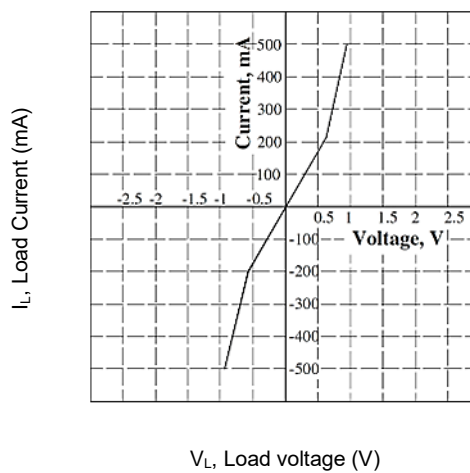
LED Forward Current vs. Turn-Off Time



Applied Voltage vs. Output Capacitance



V-I Characteristics of Output MOS



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## DIMENSIONS

Item	Min (mm)	Max (mm)
A1	0.00	0.20
A2	1.80	2.20
b	0.30	0.50
D	4.10	4.50
E	6.40	7.20
E1	4.20	4.60
e	2.54	
L	0.46	0.86
X	0.80	
X1	2.54	
Y	1.20	
Y1	7.20	
Z	0.93	

Note:

1.LED Anode; 2.LED Cathode; 3,4.Drain (MOSFET)

