

# SSR Relay NO-1A

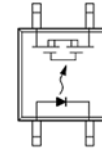
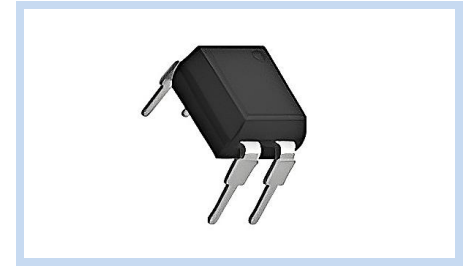
## AC/DC 60V 3A DIP-4

SSR1A1I3A0D4

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### FEATURE

- Normally Open (1-Form-A) Solid State Relay
- AC/DC Output Load Compatible
- Isolation Voltage: 3750/5000 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	$f=100\text{Hz, duty}=1\%$	$I_{FP}$	1	A
Input LED Reverse Voltage		$V_R$	5	V
Input Power Dissipation		$P_{In}$	75	mW
Output Load Voltage	AC peak or DC	$V_L$	60	V
Output Load Current		$I_L$	3.0	A
Output Peak Load Current	100ms (1 pulse)	$I_{Peak}$	5.0	A
Output Power Dissipation		$P_{out}$	400	mW
Total Power Dissipation		$P_T$	500	mW
Isolation Voltage	AC for 60sec, RH60%	$V_{ISO}$	3750	$V_{RMS}$
Isolation Voltage (Suffix V)			5000	$V_{RMS}$
Operating Temperature Range		$T_{Opr}$	-40~+85	°C
Storage Temperature Range		$T_{Stg}$	-40~+100	°C
Soldering Temperature	For 10 sec	$T_{SOL}$	260	°C

### ELECTRICAL CHARACTERISTICS

Input Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
LED Forward Voltage	$I_F=10\text{mA}$	$V_F$	--	1.3	1.5	V
Operation LED Current	--	$I_{F(On)}$	--	0.5	5.0	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	$I_F=10\text{mA, } I_L=100\text{mA}$ , Time to flow is within 1 sec	$R_{(On)}$	--	0.06	0.1	$\Omega$
Off-State Leakage Current	$V_L=\text{Rating}$	$I_{Leak}$	--	--	1	$\mu\text{A}$
Output Capacitance	$V_L=0\text{V, } f=1\text{MHz}$	$C_{Out}$	--	150	--	pF
Transmission Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Turn-On Time	$I_F=10\text{mA, } I_L=100\text{mA}$	$t_{on}$	--	1.5	3.0	ms
Turn-Off Time		$t_{off}$	--	0.1	0.3	ms
Coupled Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
I/O Isolation Resistance	$V_{IO}=500\text{V}_{DC}$	$R_{IO}$	$10^{10}$	--	--	$\Omega$
I/O Capacitance	$f=1\text{MHz}$	$C_{IO}$	--	0.8	1.5	pF

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

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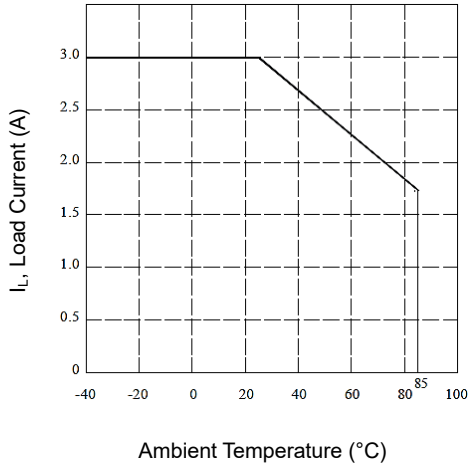
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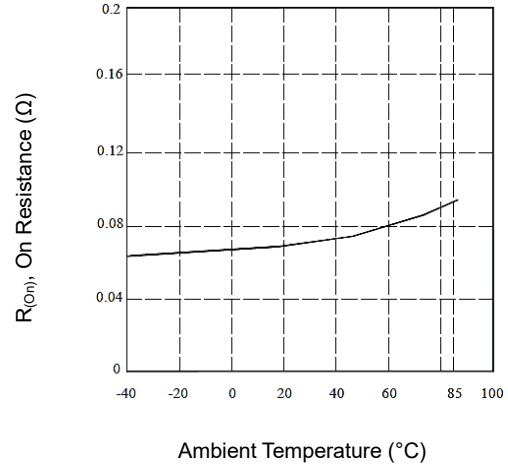
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### CHARACTERISTIC CURVES

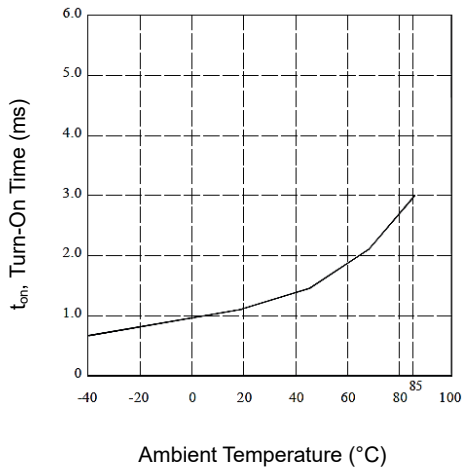
Load Current vs. Temperature



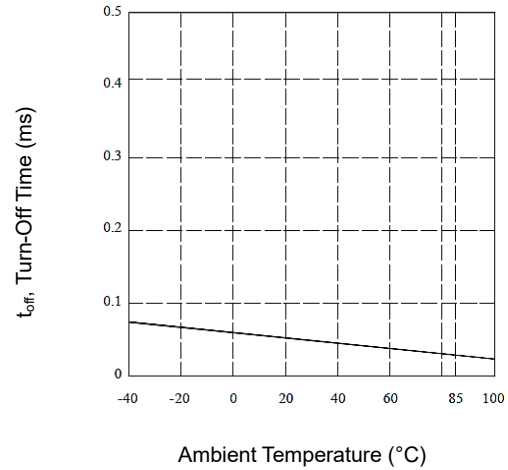
On Resistance vs. Temperature



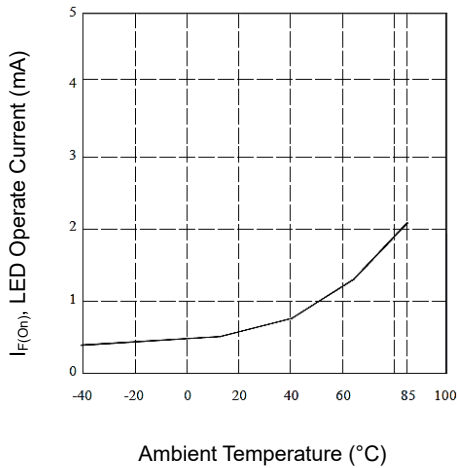
Turn-On Time vs. Temperature



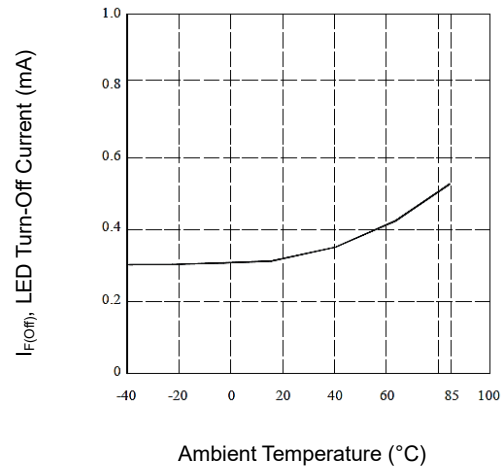
Turn-Off Time vs. Temperature



LED Operate Current vs. Temperature

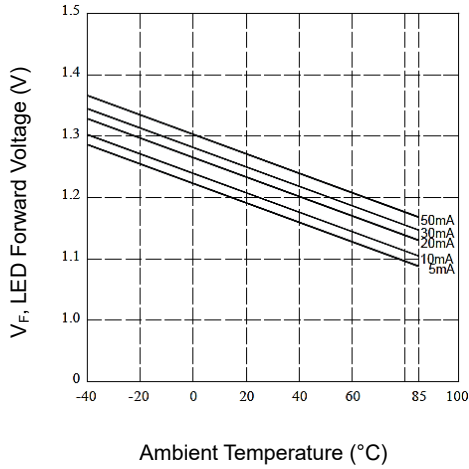


LED Turn-Off Current vs. Temperature

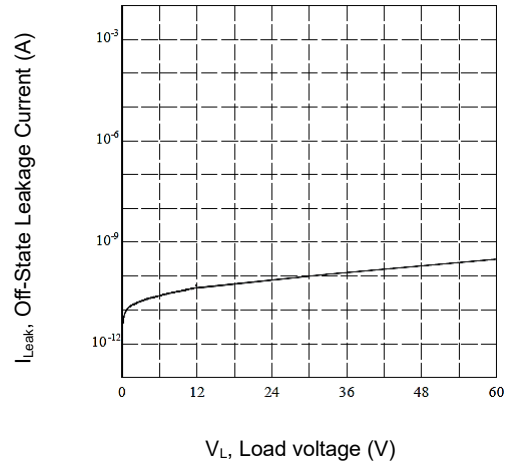


**CHARACTERISTIC CURVES**

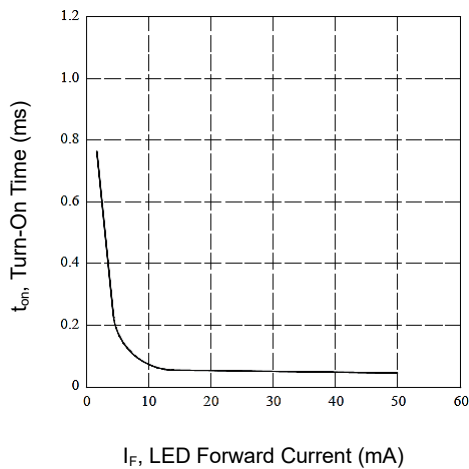
**LED Forward Voltage vs. Temperature**



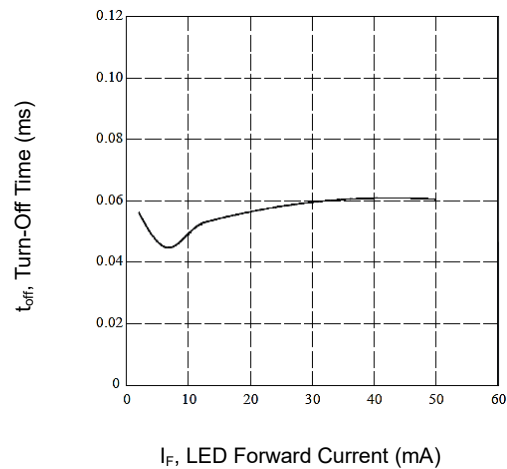
**Off-State Leakage Current vs. Load Voltage**



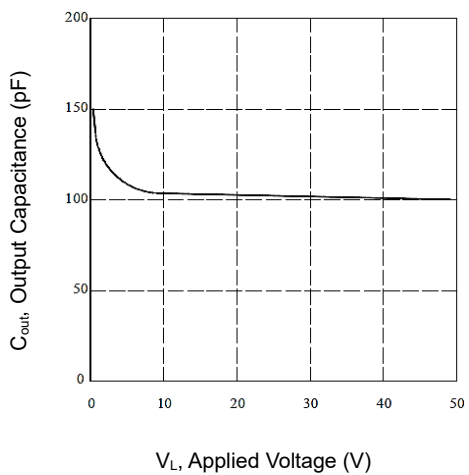
**LED Forward Current vs. Turn-On Time**



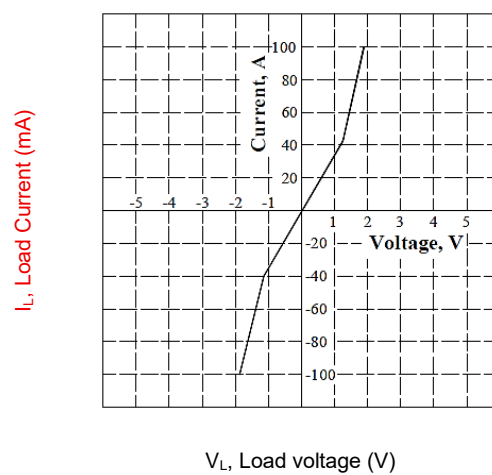
**LED Forward Current vs. Turn-Off Time**



**Applied Voltage vs. Output Capacitance**



**V-I Characteristics of Output MOS**



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### DIMENSIONS

Item	Min (mm)	Max (mm)
A	6.70	7.10
A1	3.20	3.60
A2	3.70	4.10
b	0.27	0.67
c	0.25	
D	4.50	4.90
E	6.20	6.60
E1	7.42	7.82
e	2.54	
X	2.54	
Y	7.62	

Note:

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

