

# SSR Relay NO-1A

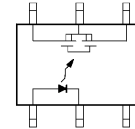
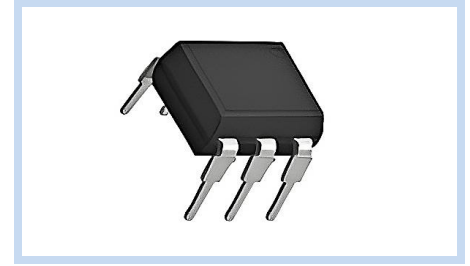
## AC/DC 40V 4.5A DIP-6

SSR1A1G4A5D6

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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=100Hz, 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	$V_L$	40	V
Output Load Current	AC (Test condition A)	$I_L$	4.5	A
	DC (Test condition B)		5.0	
	DC (Test condition C)		7.0	
Output Peak Load Current	300 $\mu$ s (1 pulse)	$I_{Peak}$	9.5	A
Output Power Dissipation		$P_{out}$	500	mW
Total Power Dissipation		$P_T$	550	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	$^{\circ}C$
Storage Temperature Range		$T_{Stg}$	-40~+100	$^{\circ}C$
soldering Temperature	For 10 sec	$T_{Sol}$	260	$^{\circ}C$

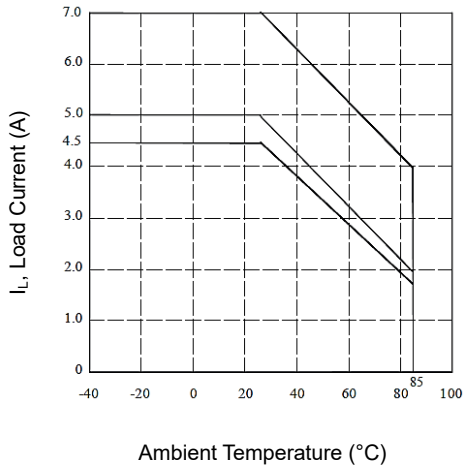
### ELECTRICAL CHARACTERISTICS

Input Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
LED Forward Voltage	$I_F=10mA$	$V_F$	--	1.3	1.5	V
Operation LED Current	--	$I_{F(on)}$	--	1.0	3.0	mA
Recovery LED Current	--	$I_{F(off)}$	--	0.35	0.8	mA
Recovery LED Voltage	--	$V_{F(off)}$	0.7	--	--	V
Output Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
On-Resistance	$I_F=10mA, I_L=Rating$ , Time to flow is within 1 sec	$R_{(on)}$	--	0.033	0.05	$\Omega$
Off-State Leakage Current	$V_L=Rating$	$I_{Leak}$	--	--	1	$\mu A$
Output Capacitance	$V_L=0V, f=1MHz$	$C_{out}$	--	690	--	pF
Transmission Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Turn-On Time	$I_F=10mA, I_L=Rating$	$t_{on}$	--	1.5	5.0	ms
Turn-Off Time		$t_{off}$	--	0.05	2.0	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	$C_{IO}$	--	1.0	1.5	pF

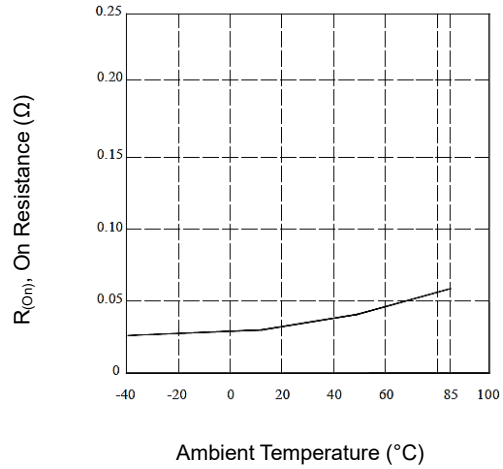
Note:  $T_A=25^{\circ}C$  unless otherwise noted.

**CHARACTERISTIC CURVES**

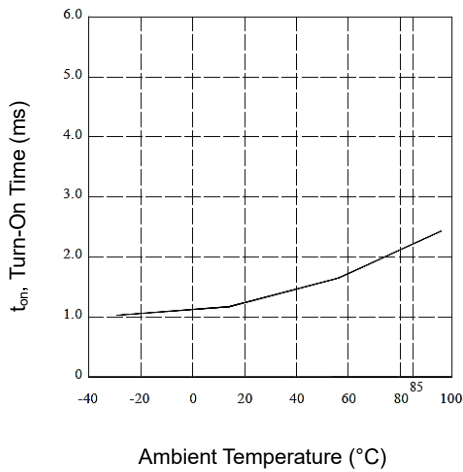
**Load Current vs. Temperature**



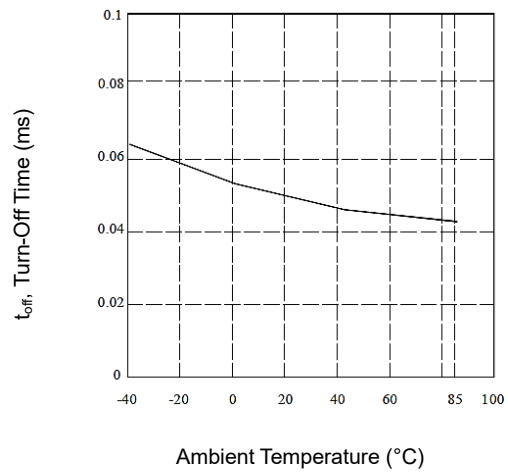
**On Resistance vs. Temperature**



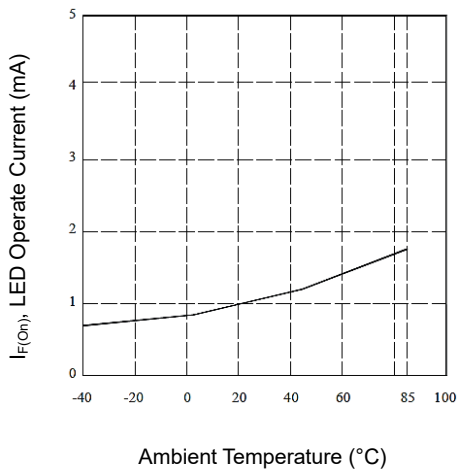
**Turn-On Time vs. Temperature**



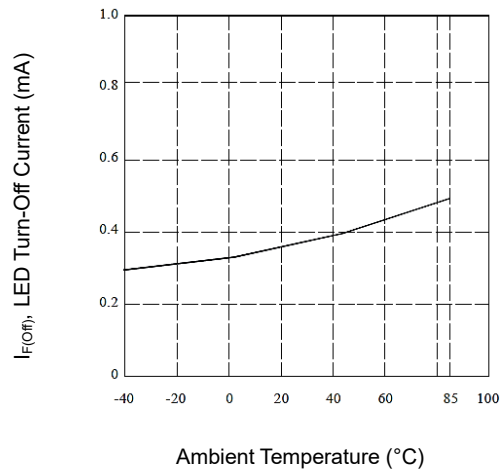
**Turn-Off Time vs. Temperature**



**LED Operate Current vs. Temperature**



**LED Turn-Off Current vs. Temperature**



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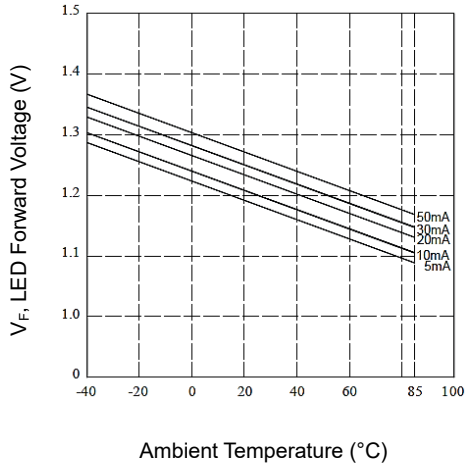
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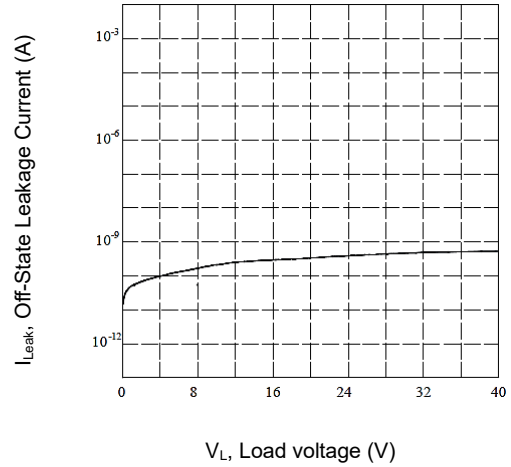
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### CHARACTERISTIC CURVES

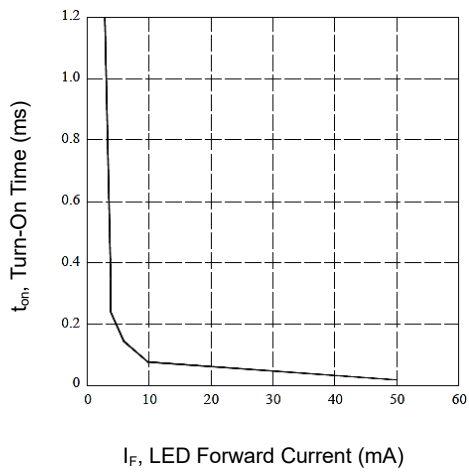
LED Forward Voltage vs. Temperature



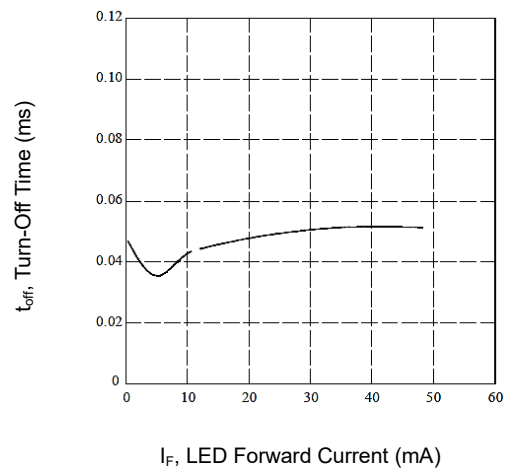
Off-State Leakage Current vs. Load Voltage



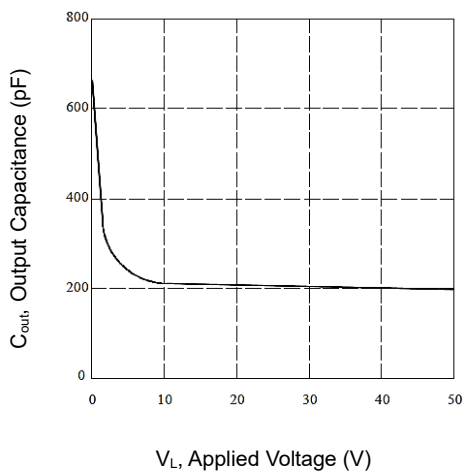
LED Forward Current vs. Turn-On Time



LED Forward Current vs. Turn-Off Time



Applied Voltage vs. Output Capacitance



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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	8.60	9.00
E1	6.20	6.60
e	2.54	
e1	5.08	
L1	7.42	7.82
X	2.54	
X1	5.08	
Y	7.62	

Note:

1.LED Anode; 2.LED Cathode; 4.Drain (MOSFET); 5.Source (MOSFET); 6.Drain (MOSFET)

