

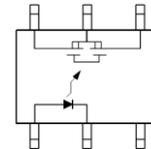
# SSR Relay NO-1A AC/DC 60V 0.5A SMD-6 High Temp

SSR1A1IA50T6S

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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	$I_{FP}$	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	$I_{Peak}$	3	A
Output Power Dissipation	$P_{out}$	300	mW
Total Power Dissipation	$P_T$	350	mW
Isolation Voltage	$V_{ISO}$	3750	$V_{RMS}$
Isolation Voltage (Suffix-V)		5000	
Operating Temperature Range	$T_{Opr}$	-40~+125	°C
Storage Temperature Range	$T_{Stg}$	-40~+135	°C
Soldering Temperature	$T_{SOL}$	260	°C

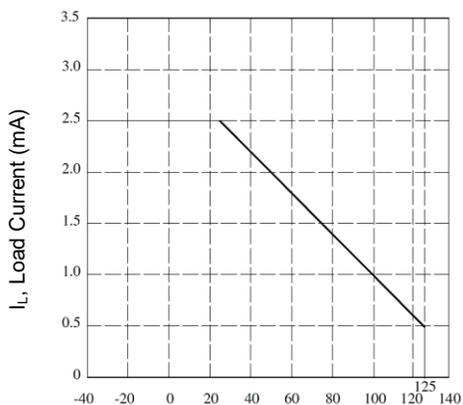
## ELECTRICAL CHARACTERISTICS

Input Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
LED Forward Voltage	$I_F=10mA$	$V_F$	--	1.3	1.5	V
Operation LED Current	--	$I_{F(On)}$	--	5	10	mA
Recovery LED Current	--	$I_{F(Off)}$	--	0.35	0.5	mA
Recovery LED Voltage	--	$V_{F(Off)}$	0.7	--	--	V
Output Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
On-Resistance	$I_F=5mA, I_L=$ Rating, Time to flow is within 1 sec	$R_{(On)}$	--	0.17	0.5	$\Omega$
Off-State Leakage Current	$V_L=$ Rating	$I_{Leak}$	--	--	10	$\mu A$
Output Capacitance	$V_L=0V, f=1MHz$	$C_{Out}$	--	300	--	pF
Transmission Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Turn-On Time	$I_F=5mA, I_L=$ Rating	$t_{on}$	--	1.2	5.0	ms
Turn-Off Time		$t_{off}$	--	0.05	0.5	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.

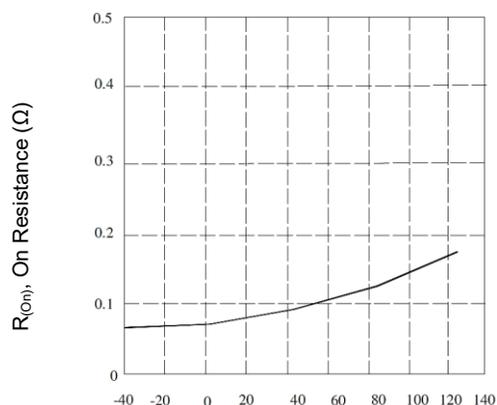
**CHARACTERISTIC CURVES**

**Load Current vs. Temperature**



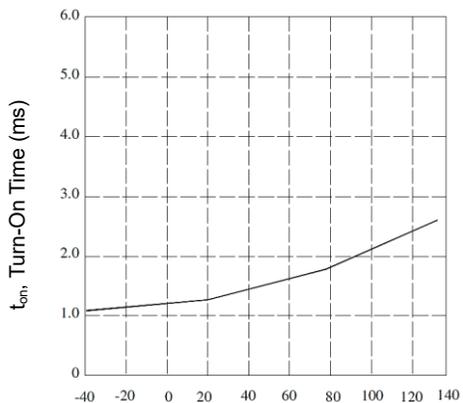
Ambient Temperature (°C)

**On Resistance vs. Temperature**



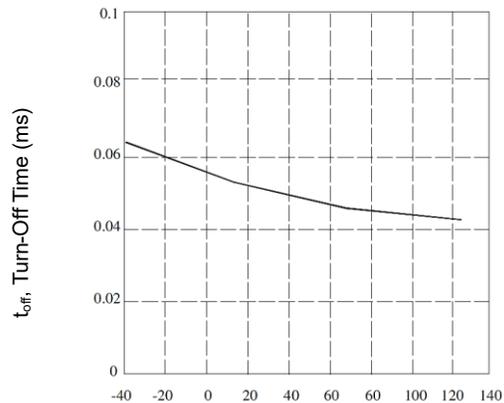
Ambient Temperature (°C)

**Turn-On Time vs. Temperature**



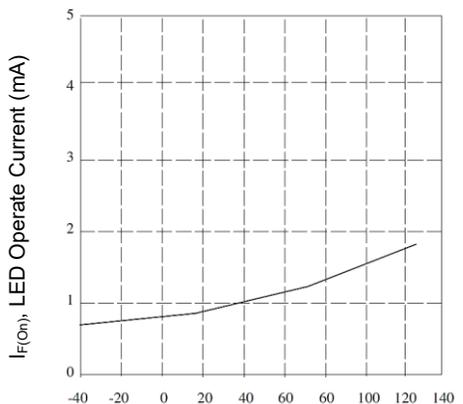
Ambient Temperature (°C)

**Turn-Off Time vs. Temperature**



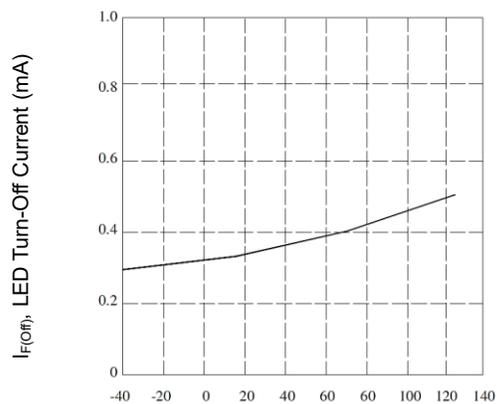
Ambient Temperature (°C)

**LED Operate Current vs. Temperature**



Ambient Temperature (°C)

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



Ambient Temperature (°C)

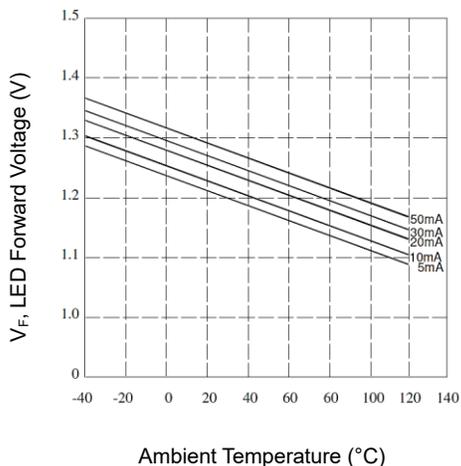
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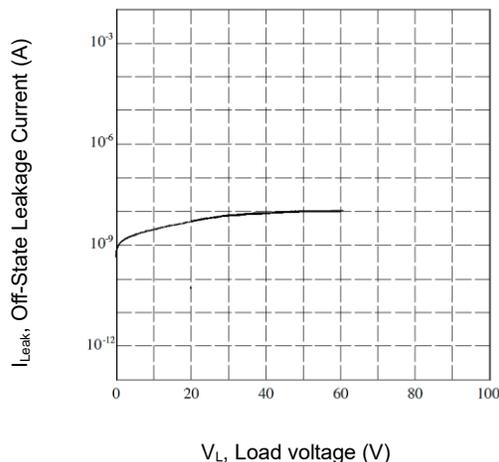
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## CHARACTERISTIC CURVES

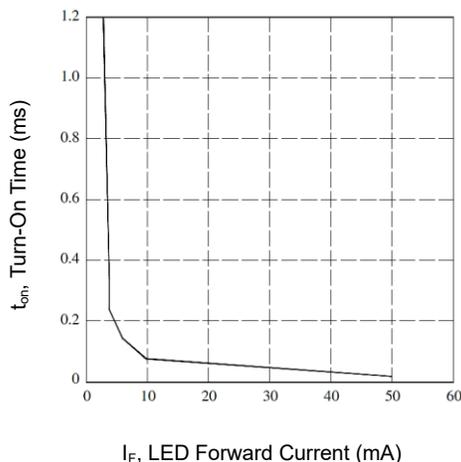
LED Forward Voltage vs. Temperature



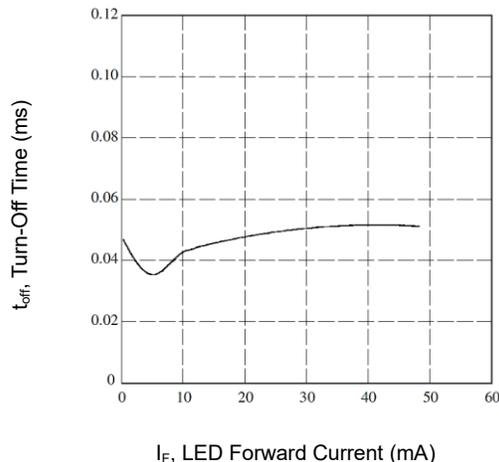
Off-State Leakage Current vs. Load Voltage



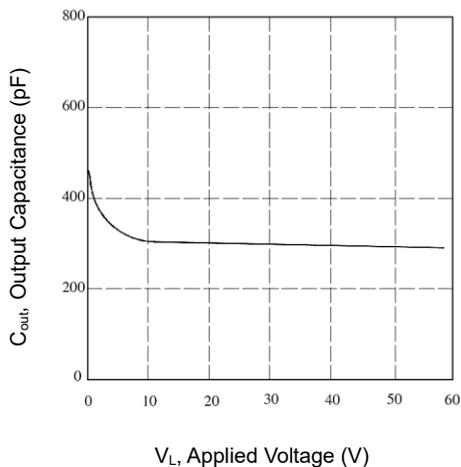
LED Forward Current vs. Turn-On Time



LED Forward Current vs. Turn-Off Time



Applied Voltage vs. Output Capacitance



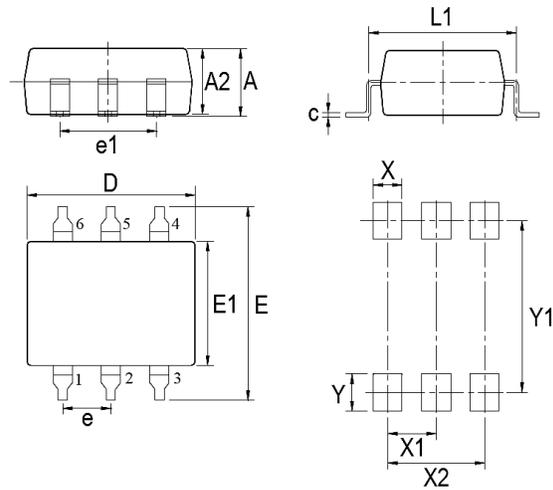
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## DIMENSIONS

Item	Min (mm)	Max (mm)
A	3.30	3.70
A2	3.20	3.60
c	0.25	
D	8.60	9.00
E	9.80	10.20
E1	6.20	6.60
e	2.54	
e1	5.08	
L1	7.42	7.82
X	1.50	
X1	2.54	
X2	5.08	
Y	1.90	
Y1	8.60	8.80



Note:

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