

SSR Relay NO-1A AC/DC

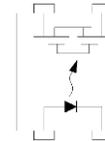
60V 0.8A SOP-4 Low on Resistor

SSR1A1IA80LS4

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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 | 0.8 | A |
| Output Peak Load Current | I_{Peak} | 4.0 | A |
| Output Power Dissipation | P_{Out} | 380 | mW |
| Total Power Dissipation | P_T | 450 | 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 | 1.4 | V |
| Operation LED Current | -- | $I_{F(On)}$ | -- | 0.6 | 1.5 | mA |
| Recovery LED Current | -- | $I_{F(Off)}$ | 0.05 | 0.2 | -- | 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 1sec | $R_{(On)}$ | -- | 0.1 | 0.3 | Ω |
| Off-State Leakage Current | $V_L=Rating$ | I_{Leak} | -- | -- | 1 | μA |
| Output Capacitance | $V_L=0V, f=1MHz$ | C_{Out} | -- | 150 | -- | pF |
| Coupled Characteristics | Conditions | Symbol | Min | Typ. | Max | Unit |
| Turn-On Time | $I_F=5mA, I_L=100mA$ | t_{on} | -- | 1.0 | 1.3 | ms |
| Turn-Off Time | | t_{off} | -- | 0.08 | 0.2 | |
| Input-Output Isolation Resistance | $V_{IO}=500V_{DC}$ | R_{IO} | 10^{10} | -- | -- | Ω |
| Input-Output Capacitance | $f=1MHz$ | C_{IO} | -- | 0.8 | 1.5 | pF |

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

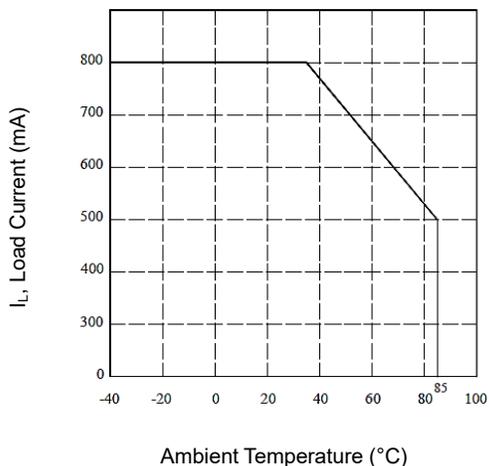
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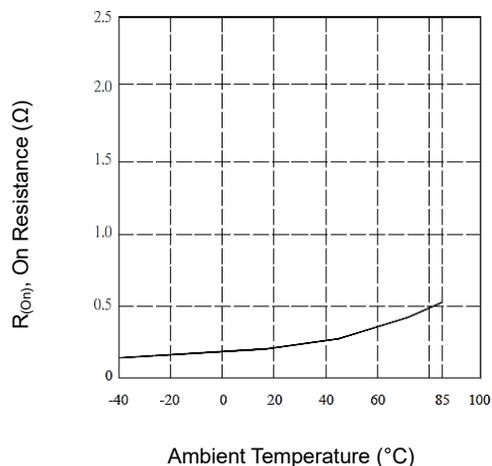
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CHARACTERISTIC CURVES

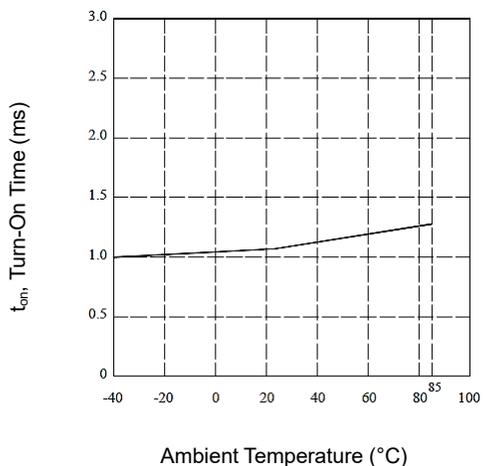
Load Current vs. Temperature



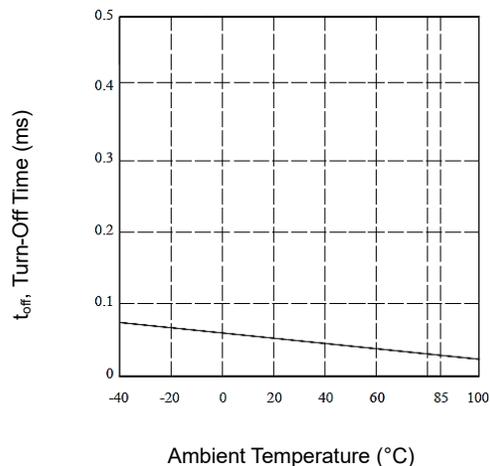
On Resistance vs. Temperature



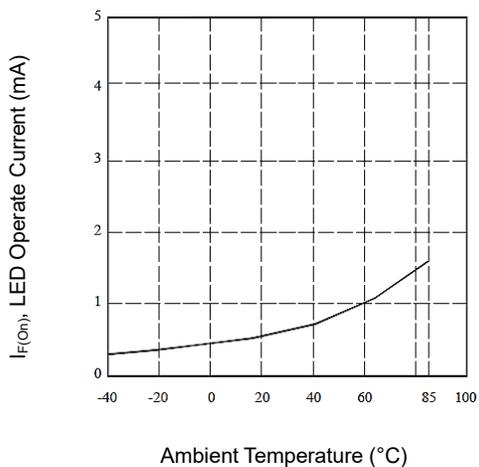
Turn-On Time vs. Temperature



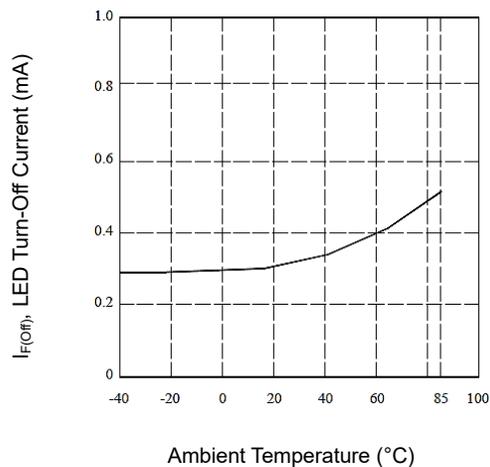
Turn-Off Time vs. Temperature



LED Operate Current vs. Temperature



LED Turn-Off Current vs. Temperature



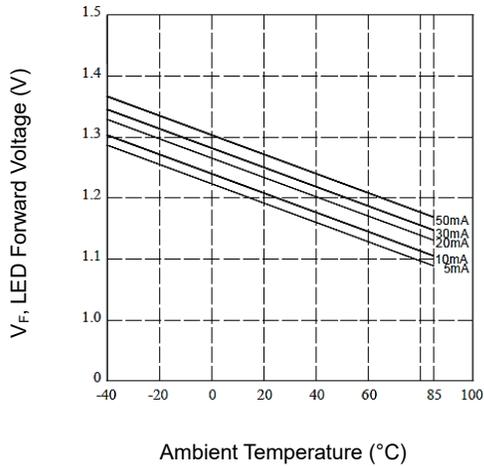
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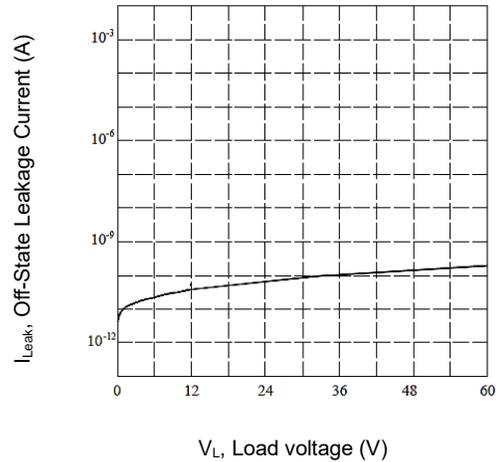
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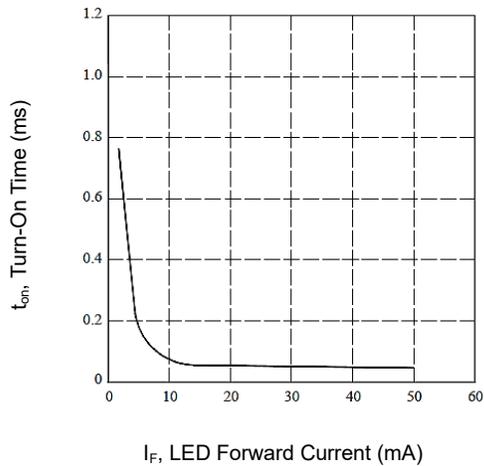
LED Forward Voltage vs. Temperature



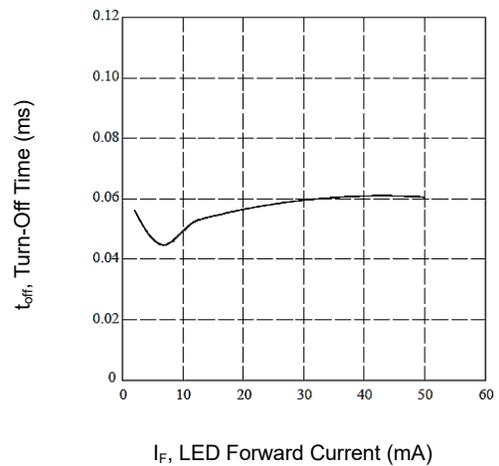
Off-State Leakage Current vs. Load Voltage



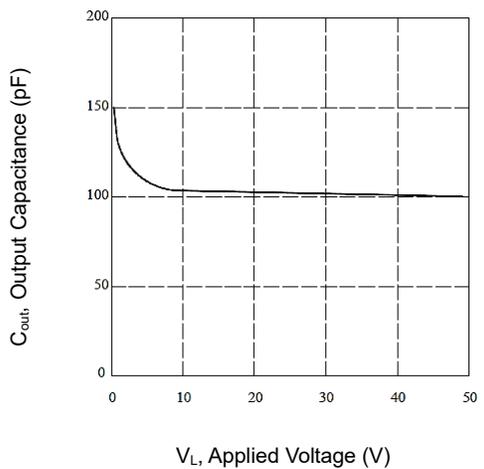
LED Forward Current vs. Turn-On Time



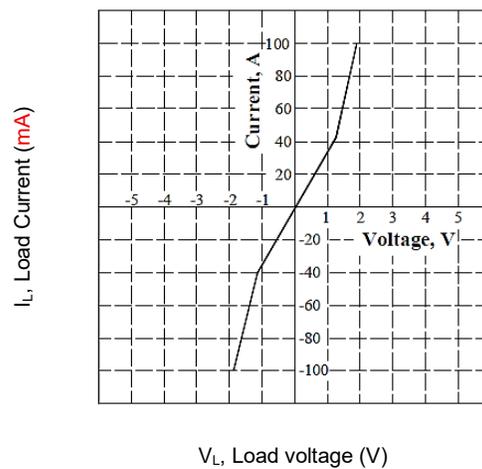
LED Forward Current vs. Turn-Off Time



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)

