

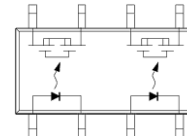
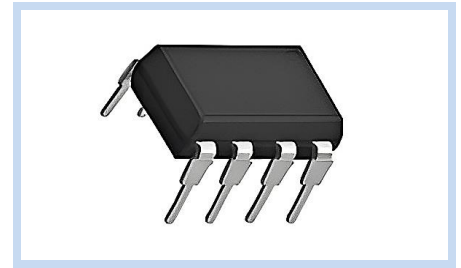
# SSR Relay NO-1Ax2 AC/DC 250V 0.18A DIP-8

SSR2A2EA18D8

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## FEATURE

- Normally Open (2-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       | $V_L$      | 250      | V         |
| Output Load Current          |                     | $I_L$      | 0.18     | A         |
| Output Peak Load Current     | 100ms (1 pulse)     | $I_{Peak}$ | 0.6      | A         |
| Output Power Dissipation     |                     | $P_{out}$  | 450      | 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        |

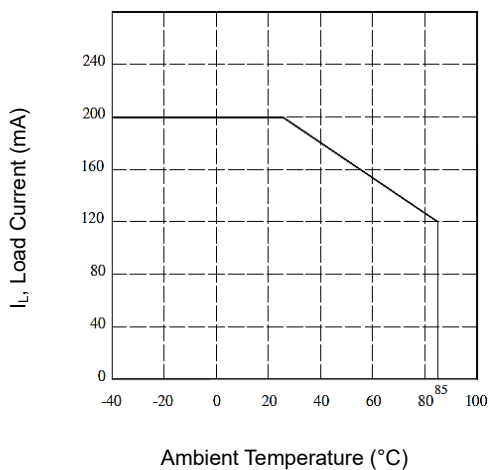
## ELECTRICAL CHARACTERISTICS

| Input Characteristics        | Conditions  | Symbol       | Min       | Typ. | Max | Unit     |
|------------------------------|---|--------------|-----------|------|-----|----------|
| LED Forward Voltage          | $I_F=10mA$  | $V_F$        | --        | 1.3  | 1.5 | V        |
| Operation LED Current        | --  | $I_{F(On)}$  | --        | 0.5  | 5.0 | mA       |
| Recovery LED Current         | --  | $I_{F(Off)}$ | --        | 0.35 | 0.5 | mA       |
| Recovery LED Voltage         | --  | $V_{F(Off)}$ | 0.7       | --   | --  | V        |
| Output Characteristics       | Conditions  | Symbol       | Min       | Typ. | Max | Unit     |
| On-Resistance                | $I_F=10mA, I_L=100mA$ ,<br>Time to flow is within 1 sec | $R_{(On)}$   | --        | 9    | 12  | $\Omega$ |
| Off-State Leakage Current    | $V_L=Rating$  | $I_{Leak}$   | --        | --   | 1   | $\mu A$  |
| Output Capacitance           | $V_L=0V, f=1MHz$  | $C_{Out}$    | --        | 45   | --  | pF       |
| Transmission Characteristics | Conditions  | Symbol       | Min       | Typ. | Max | Unit     |
| Turn-On Time                 | $I_F=10mA, I_L=100mA$                                   | $t_{on}$     | --        | 0.5  | 1.0 | ms       |
| Turn-Off Time                |   | $t_{off}$    | --        | 0.05 | 0.2 | 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       |

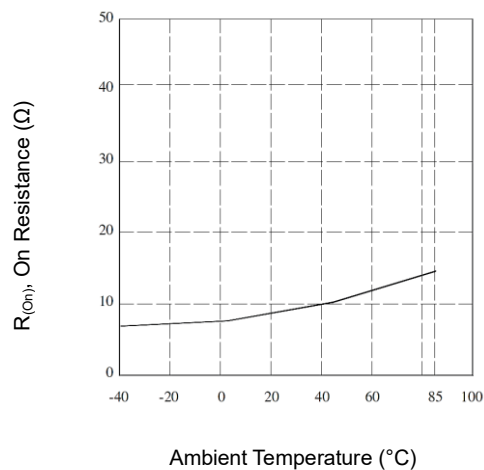
Note:  $T_A=25^\circ C$  unless otherwise noted.

**CHARACTERISTIC CURVES**

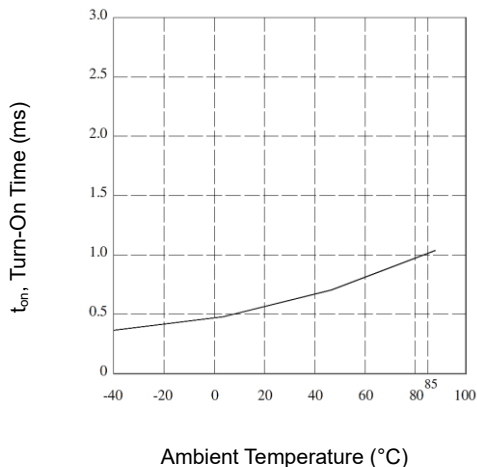
**Load Current vs. Temperature**



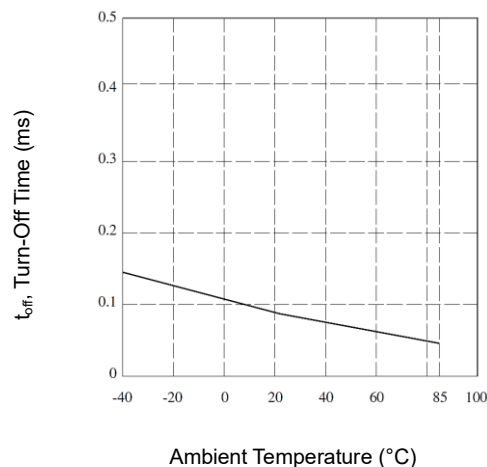
**On Resistance vs. Temperature**



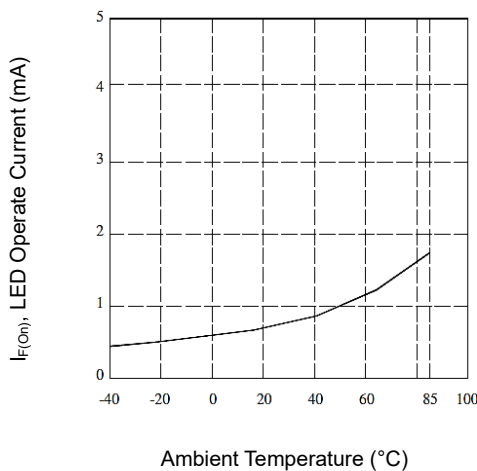
**Turn-On Time vs. Temperature**



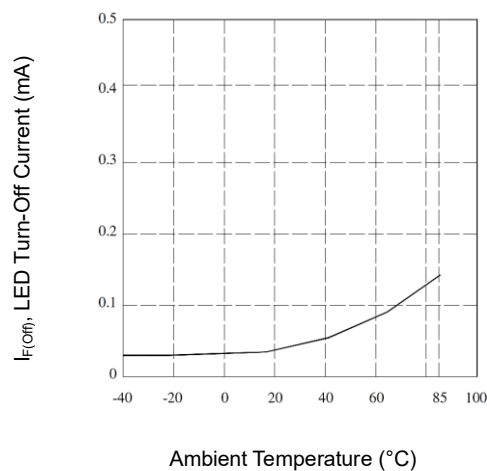
**Turn-Off Time vs. Temperature**



**LED Operate Current vs. Temperature**



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



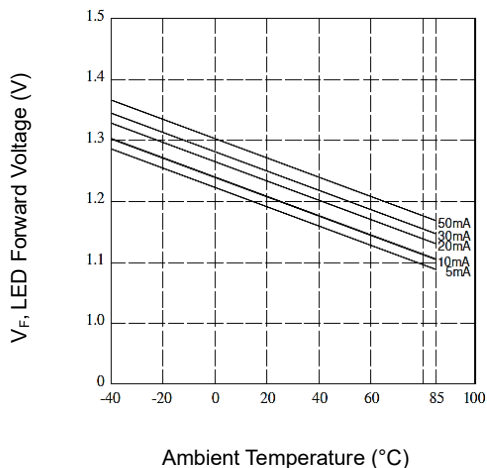
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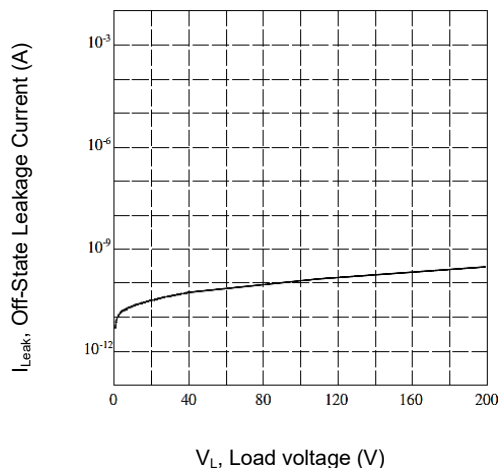
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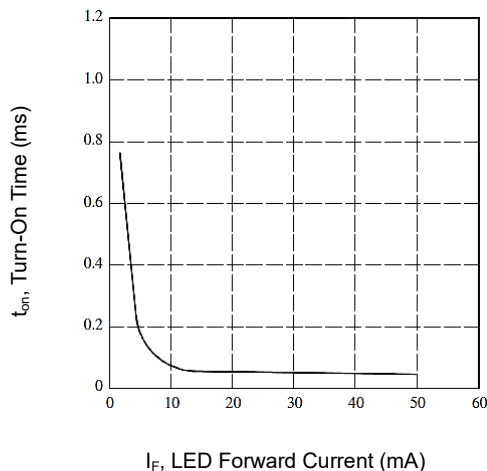
LED Forward Voltage vs. Temperature



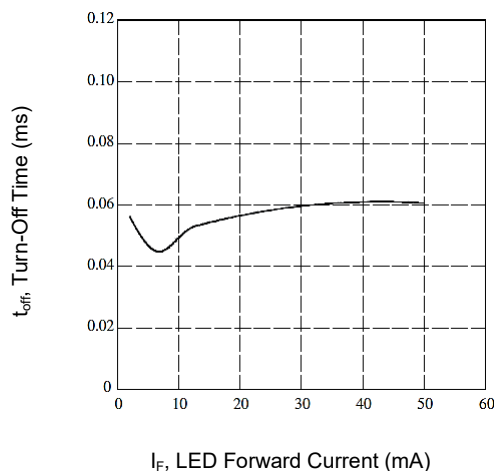
Off-State Leakage Current vs. Load Voltage



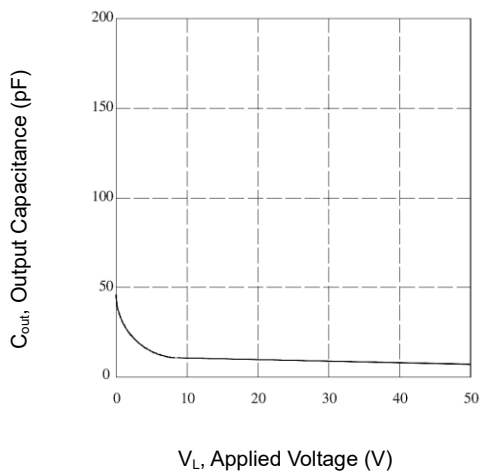
LED Forward Current vs. Turn-On Time



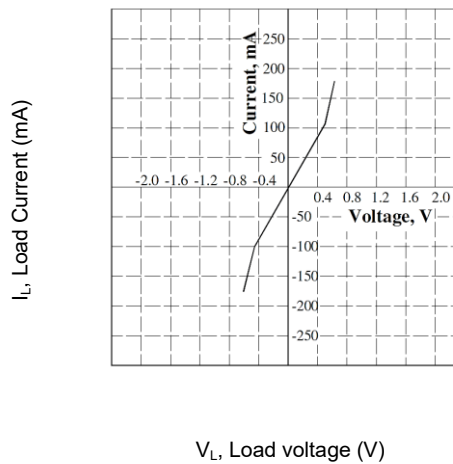
LED Forward Current vs. Turn-Off Time



Applied Voltage vs. Output Capacitance



V-I Characteristics of Output MOS



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## DIMENSIONS

| Item | Min (mm) | Max (mm) |
|------|----------|----------|
| A    | 6.70     | 7.10     |
| A1   | 3.20     | 3.60     |
| A2   | 3.70     | 4.10     |
| b    | 0.27     | 0.67     |
| c    | 0.25     |          |
| D    | 9.60     | 10.00    |
| E    | 7.42     | 7.82     |
| E1   | 6.20     | 6.60     |
| e    | 2.54     |          |
| e1   | 7.22     | 8.02     |
| X    | 7.22     | 8.02     |
| Y    | 7.52     | 7.72     |

Note:

1,3.LED Anode; 2,4.LED Cathode; 5,6.Drain (MOSFET); 7,8.Drain (MOSFET)

