

SSR Relay NC-1B

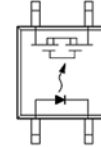
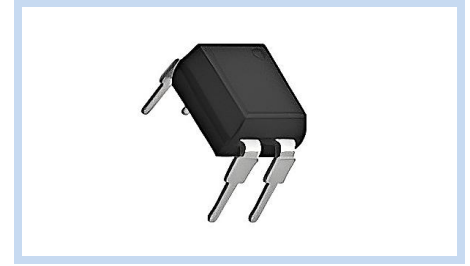
AC/DC 60V 0.5A DIP-4

SSR1B1IA50D4

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FEATURE

- Normally Close (1-Form-B) 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	500	mA
Output Peak Load Current	100ms (1 pulse)	I_{Peak}	0.6	A
Output Power Dissipation		P_{out}	300	mW
Total Power Dissipation		P_T	350	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

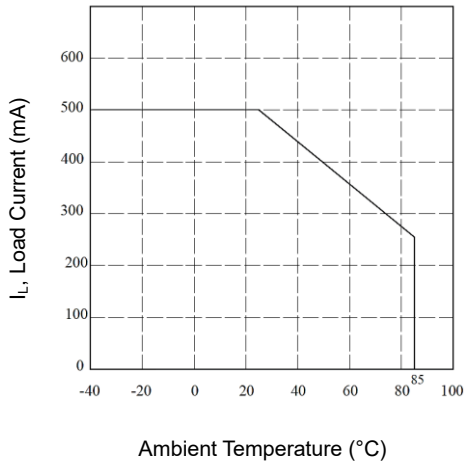
ELECTRICAL CHARACTERISTICS

Input Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
LED Forward Voltage	$I_F=10\text{mA}$	V_F	--	1.2	1.5	V
Operation LED Current	--	$I_{F(On)}$	--	0.5	5.0	mA
Recovery LED Current	--	$I_{F(Off)}$	0.1	0.4	--	mA
Recovery LED Voltage	--	$V_{F(Off)}$	0.5	--	--	V
Output Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
On-Resistance	$I_F=0\text{A, } I_L=100\text{mA,}$ Time to flow is within 1 sec	$R_{(On)}$	--	1	3	Ω
Off-State Leakage Current	$I_F=10\text{mA, } V_L=60\text{V}$	I_{Leak}	--	--	1	μA
Output Capacitance	$I_F=10\text{mA, } V_L=0\text{V, } f=1\text{MHz}$	C_{Out}	--	165	--	pF
Transmission Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Turn-On Time	$I_F=10\text{mA, } I_L=100\text{mA}$	t_{on}	--	0.5	3.0	ms
Turn-Off Time		t_{off}	--	0.25	1.0	ms
Coupled Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
I/O Isolation Resistance	$V_{IO}=500\text{V}_{DC}$	R_{IO}	10^{10}	--	--	Ω
I/O Capacitance	$f=1\text{MHz}$	C_{IO}	--	0.8	--	pF

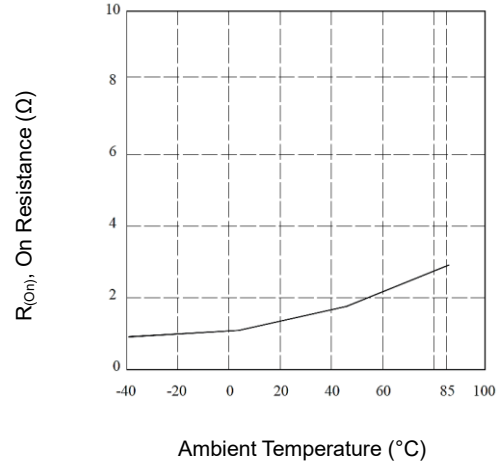
Note: $T_A=25^\circ\text{C}$ unless otherwise noted.

CHARACTERISTIC CURVES

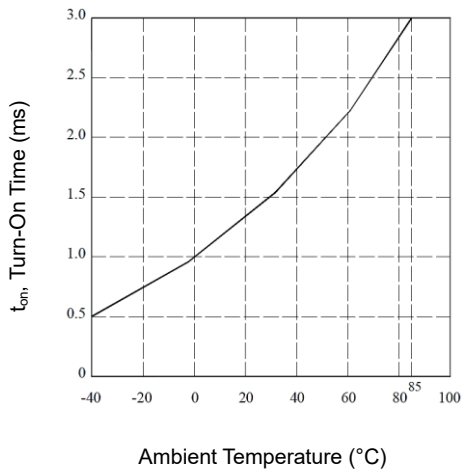
Load Current vs. Temperature



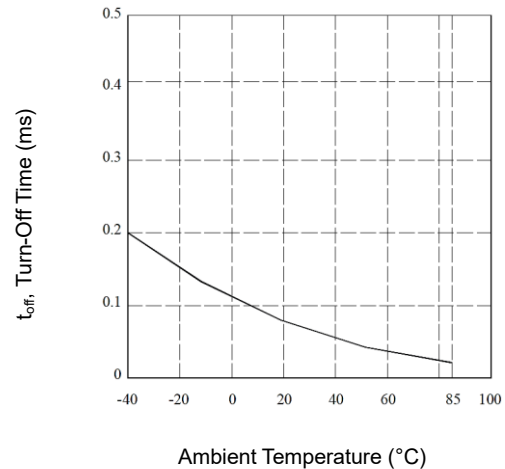
On Resistance vs. Temperature



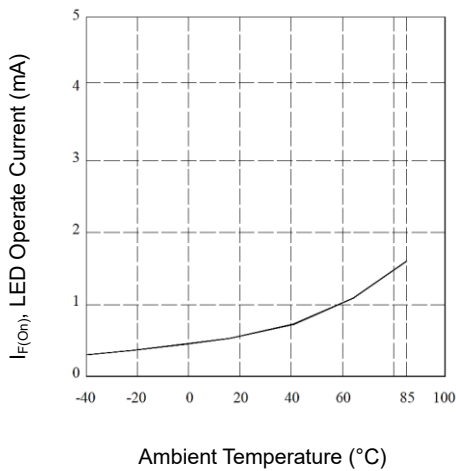
Turn-On Time vs. Temperature



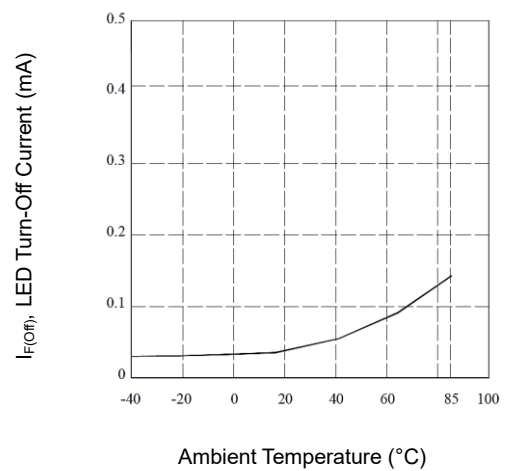
Turn-Off Time vs. Temperature



LED Operate Current vs. Temperature



LED Turn-Off Current vs. Temperature



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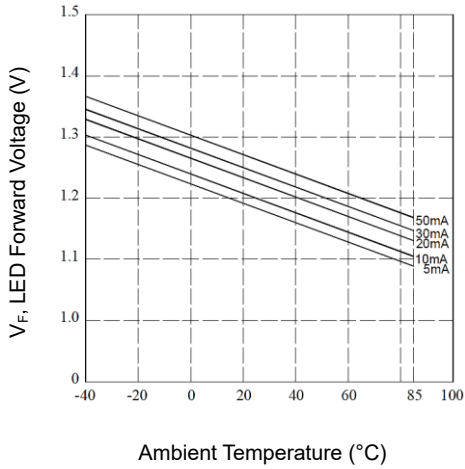
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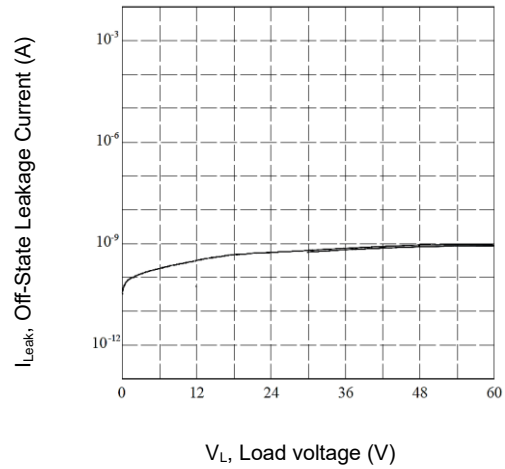
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CHARACTERISTIC CURVES

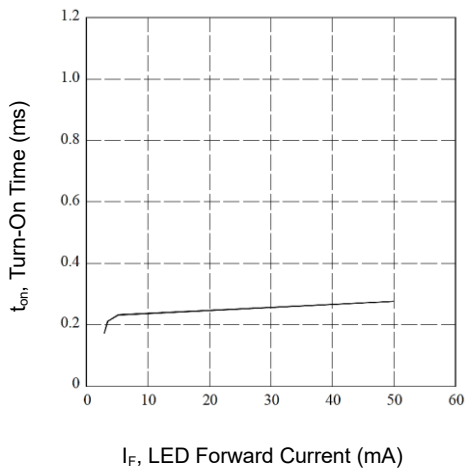
LED Forward Voltage vs. Temperature



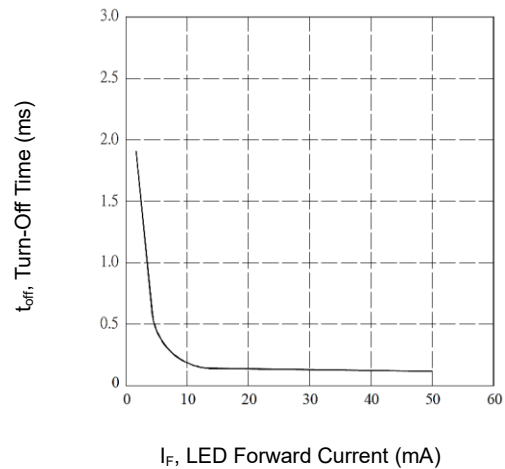
Off-State Leakage Current vs. Load Voltage



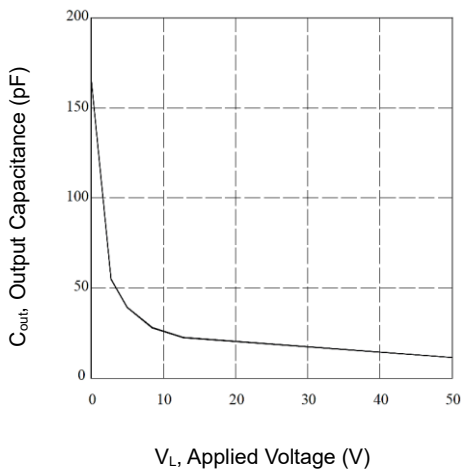
LED Forward Current vs. Turn-On Time



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	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)

