

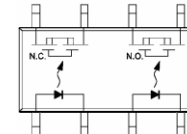
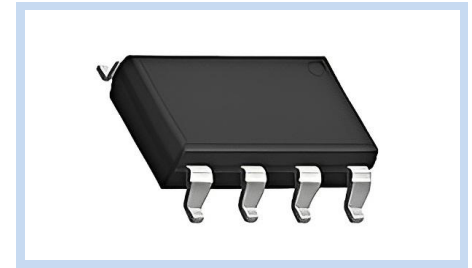
# SSR Relay NO+NC/1A+1B AC/DC 60V 0.4A SMD-8

SSRAB1IA408S

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## FEATURE

- Normally Open + Normally Close (1-Form-A/B) Solid State Relay
- AC/DC Output Load Compatible
- Isolation Voltage: 3750/5000 Vrms
- Application: Programmable Controller, Industrial I/O Module, Communication Equipment Protection
- 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	$I_L$	400	mA
Output Peak Load Current	$I_{Peak}$	700	mA
Output Power Dissipation	$P_{out}$	450	mW
Total Power Dissipation	$P_T$	500	mW
Isolation Voltage	$V_{ISO}$	3750	$V_{RMS}$
Isolation Voltage (Suffix-V)		5000	
Operating Temperature Range	$T_{Opr}$	-40~+85	°C
Storage Temperature Range	$T_{Stg}$	-40~+100	°C
Soldering Temperature	$T_{SOL}$	260	°C

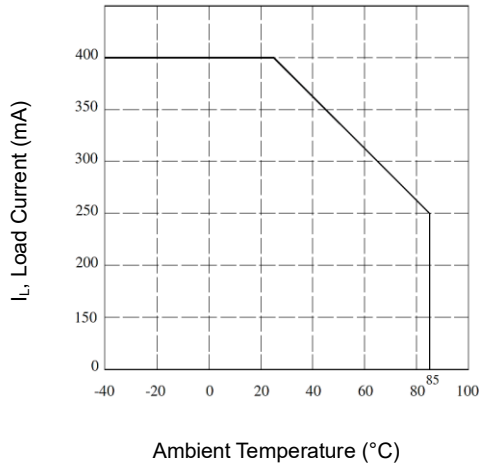
## ELECTRICAL CHARACTERISTICS

Input Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
LED Forward Voltage	$I_F=10mA$	$V_F$	--	1.2	1.5	V
Operation LED Current	--	$I_{F(On)}$	--	0.5	5.0	mA
Recovery LED Current	--	$I_{F(off)}$	--	0.35	0.8	mA
Recovery LED Voltage	--	$V_{F(off)}$	0.5	--	--	V
Output Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
On-Resistance	$I_F=10mA$ (N.O.), $I_F=0mA$ (N.C.), $I_L=100mA$ , Time to flow is within 1 sec	$R_{(On)}$	--	1.0(N.O.)	1.4(N.O.)	$\Omega$
				1.0(N.C.)	3.0(N.C.)	
Off-State Leakage Current	$I_F=0mA$ (N.O.), $I_F=10mA$ (N.C.), $V_L=Rating$	$I_{Leak}$	--	1	10	$\mu A$
Output Capacitance	$I_F=5mA$ , $V_L=0$ , $f=1MHz$	$C_{Out}$	--	150	--	pF
Transmission Characteristics	Conditions	Symbol	Min	Typ.	Max	Unit
Turn-On Time	$I_F=10mA$ , $I_L=100mA$	$t_{on}$	--	0.5(N.O.)	1.0(N.O.)	ms
				0.05(N.C.)	0.5(N.C.)	
Turn-Off Time	$I_F=10mA$ , $I_L=100mA$	$t_{off}$	--	0.03(N.O.)	0.2(N.O.)	ms
				0.5(N.C.)	3.0(N.C.)	
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	--	pF

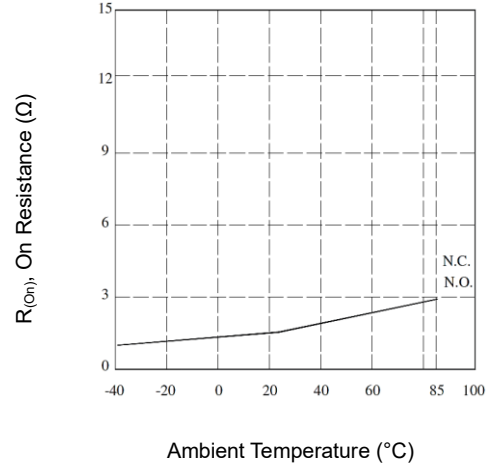
Note:  $T_A=25^\circ C$  unless otherwise noted.

**CHARACTERISTIC CURVES**

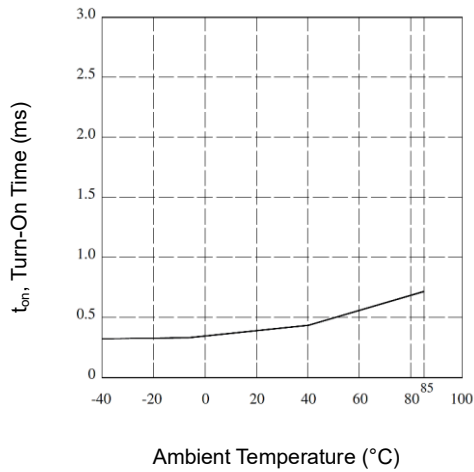
**Load Current vs. Temperature**



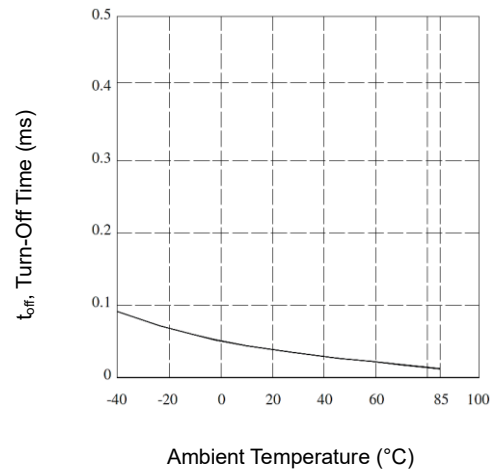
**On Resistance vs. Temperature**



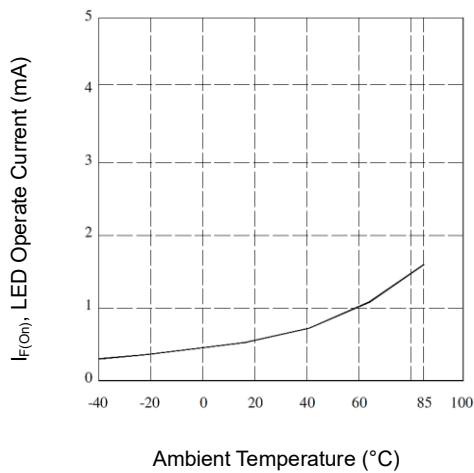
**Turn-On Time vs. Temperature**



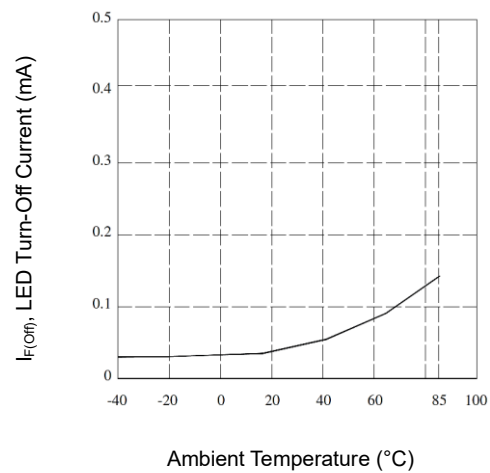
**Turn-Off Time vs. Temperature**



**LED Operate Current vs. Temperature**

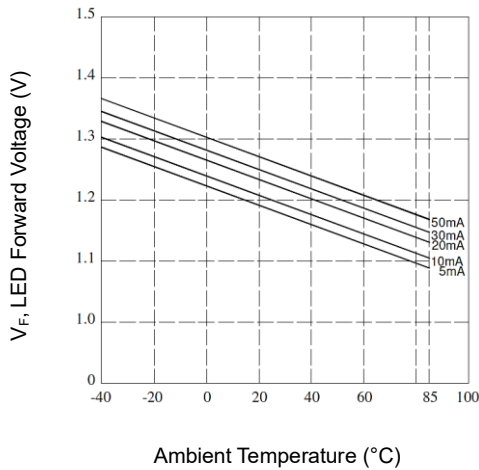


**LED Turn-Off Current vs. Temperature**

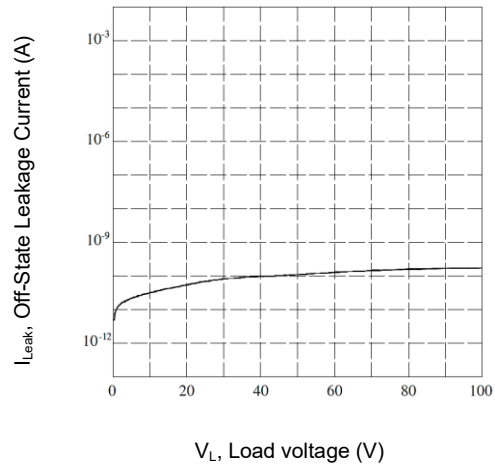


**CHARACTERISTIC CURVES**

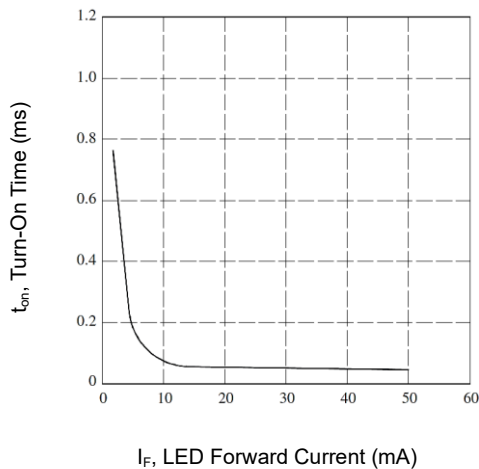
**LED Forward Voltage vs. Temperature**



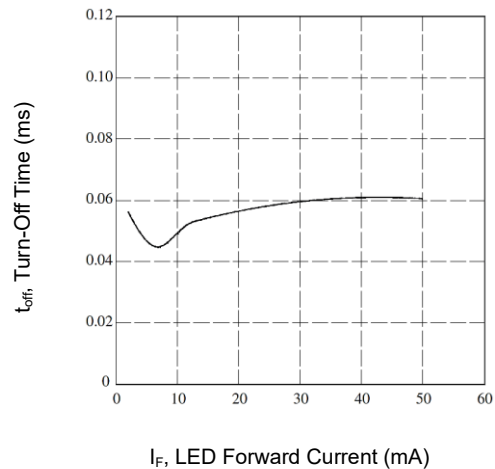
**Off-State Leakage Current vs. Load Voltage**



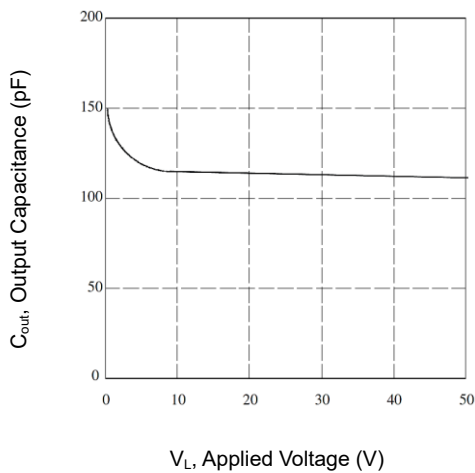
**LED Forward Current vs. Turn-On Time**



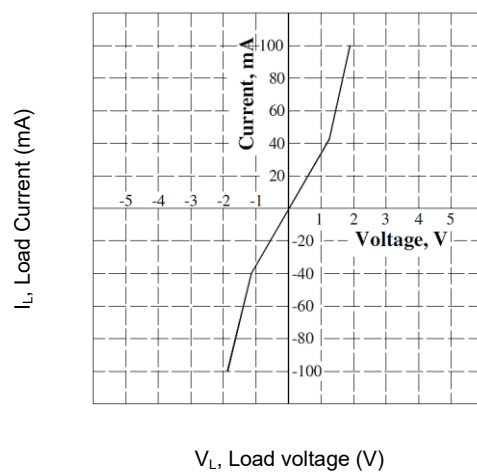
**LED Forward Current vs. Turn-Off Time**



**Applied Voltage vs. Output Capacitance**



**V-I Characteristics of Output MOS**



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SSRAB1IA408S

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## DIMENSIONS

Item	Min (mm)	Max (mm)
A	3.30	3.70
A1	3.20	3.60
c	0.25	
D	9.60	10.00
E	9.80	10.20
E1	6.20	6.60
e	2.54	
e1	7.62	
L1	7.42	7.82
X	1.50	
X1	7.22	8.02
Y	1.90	
Y1	8.60	8.80

Note:

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

