

# G2 Series/ 1 FORM A

## Solid State Relays



### Model Number

G2-1A02 G2-1A03 G2-1A05 G2-1A06 G2-1A07 G2-1A13

### Parameters

#### Input Characteristics

Parameters	Sym.	Test Conditions	Units		1 Form A	1 Form A	1 Form A	1 Form A	1 Form A	1 Form A
LED Forward Current - Turn on	$I_{Fon}$	$I_L = 100mA, t = 10ms$	mADC	Max Typ	5.0 2.0	5.0 2.0	5.0 2.0	5.0 2.0	5.0 2.0	5.0 2.0
LED Forward Current - Turn off	$I_{Foff}$	$I_L = 0.2mA, V_L = (Note 1)$	mADC	Min Typ	0.1 1.8	0.1 1.8	0.1 1.8	0.1 1.8	0.1 1.8	0.1 1.8
Recommended Forward Current	$I_F$		mADC	Min Max	10 30	10 30	10 30	10 30	10 30	10 30
LED Forward Voltage	$V_F$	$I_F = 20mA$	VDC	Min Max	1.1 1.4	1.1 1.4	1.1 1.4	1.1 1.4	1.1 1.4	1.1 1.4

#### Maximum Input Ratings

LED Forward Current	$I_F$		mADC	Max	50	50	50	50	50	50
LED Reverse Voltage Withstand	$V_R$	$I_R = 10mA$		Max	10	10	10	10	10	10

#### Output Characteristics

Switching Voltage	$V_L$	$I_L = 50mA$	V PEAK	Max	400	400	400	250	150	400
Switching Current: AC Mode(Note2)	$I_L$	Pin 4 to Pin 6	mA	Max	150	150	120	150	450	225
Switching Current: DC Mode(Note2)	$I_L$	Pins 5(-) to Pins 4&6 (+)	mA	Max	250	250	200	250	900	425
Current Limit: AC Mode(Note2)	$I_{Lmt}$	$I_F = 5mA, t = 5ms$	mA	Typ	380	n/a	380	380	n/a	n/a
Current Limit: DC Mode(Note2)	$I_{Lmt}$	$I_F = 5mA, t = 5ms$	mA	Typ	540	n/a	540	760	n/a	n/a
On Resistance: AC Mode(Note2)	$R_{on}$	$I_F = 5mA, I_L = 50mA$	V	Max	24	18	35	18	5	9
On Resistance: DC Mode(Note2)	$R_{on}$	$I_F = 5mA, I_L = 50mA$	V	Max	6	4.5	8.75	4.5	1.25	2.25
Off State Resistance	$R_{off}$	$I_F = 0mA, V_L = 100V$	GV	Min Typ	0.5 5000	0.5 5000	0.5 5000	0.5 5000	0.5 5000	0.5 5000
Off State Leakage	$I_{off}$	$I_F = 0mA, V_L = 100V$	nA	Max Typ	200 0.5	200 0.5	200 0.5	200 0.5	200 0.5	200 0.5
	$I_{off}$	$I_F = 0mA, V_L = Max$	mA	Max	1	1	1	1	1	1
Turn On Time	$T_{on}$	$I_F = 5mA, I_L = 50mA$	ms	Max	5.0	5.0	5.0	5.0	5.0*	5.0
Turn Off Time	$T_{off}$	$I_F = 5mA, I_L = 50mA$	ms	Max	1.0	1.0	1.0	1.0	1.0	1.0
Capacitance - Across Output		$I_F = 0mA, V_L = 1V$	pF	Typ	95	95	60	110	170	225
		$I_F = 0mA, V_L = 50V$	pF	Typ	10	10	7	15	30	10
Thermal Offset Voltage		$I_F = 5mA$	mV	Typ	0.2	0.2	0.2	0.2	0.2	0.2

#### General Characteristics

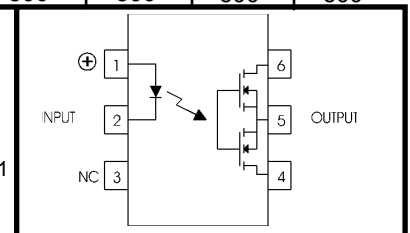
Dielectric Strength - Input to Output		$t = 60sec$	VRMS	Min	3750	3750	3750	3750	3750	3750
Capacitance - Input to Output			pF	Typ	0.8	0.8	0.8	0.8	0.8	1.1
Power Dissipation	$P_{Diss}$		mW	Max	500	500	500	500	600	600

#### Notes:

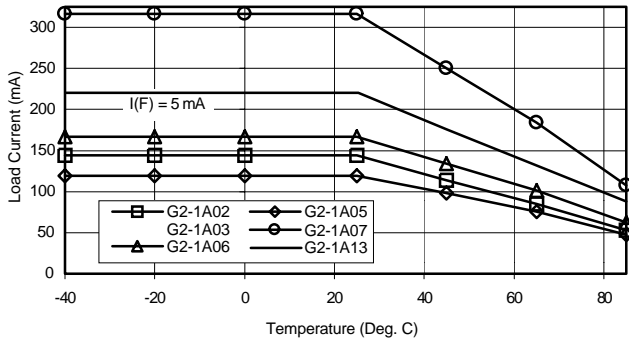
- 1:  $V_L$  for LED Forward Current - Turn Off is 50 Volts less than "Switching Voltage : Max".
- 2: See "AC Mode and DC Mode Operation" on Page 67 for further description of AC and DC Mode.
- 3: Specifications subject to change without notice.

Schematic Top View:  
Mold mark on top of relay indicates Pin #1

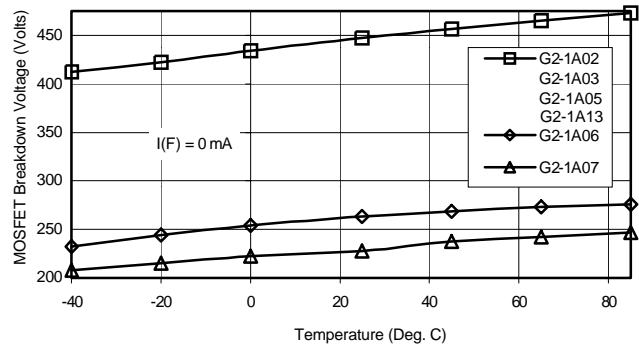
\*  $I_F = 10mA$



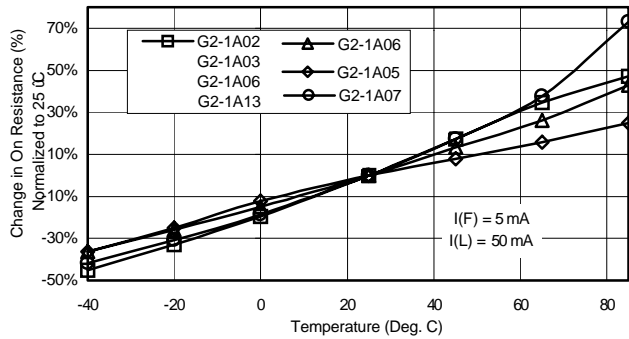
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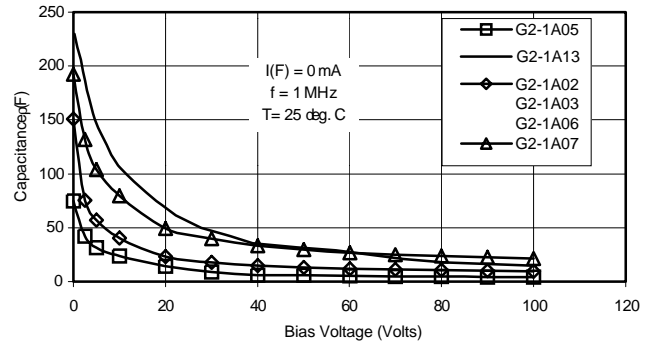
A. Load Current vs. Ambient Temperature



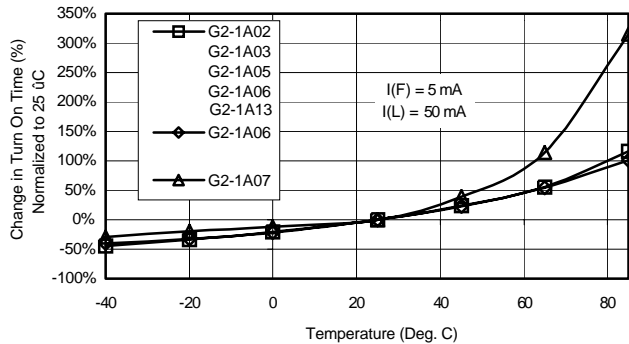
B. Output MOSFET BV vs. Ambient Temperature



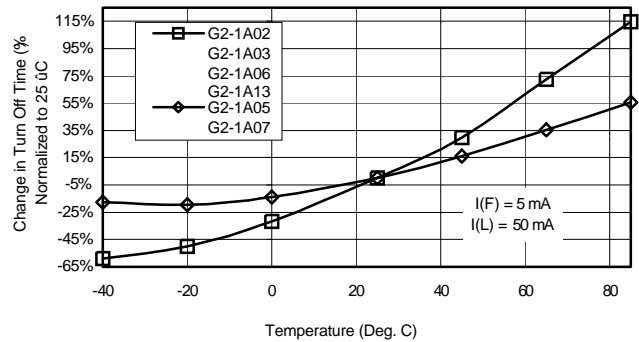
C. On-Resistance vs. Ambient Temperature



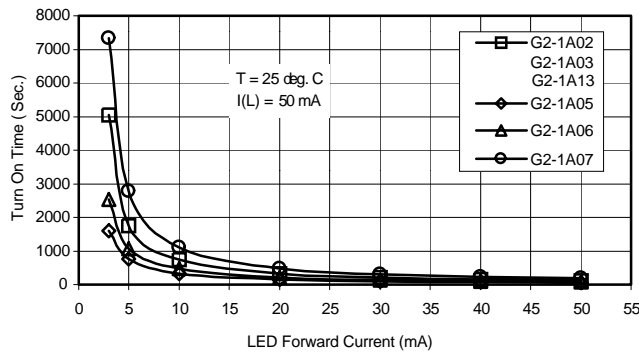
D. Output Capacitance vs. Applied Voltage



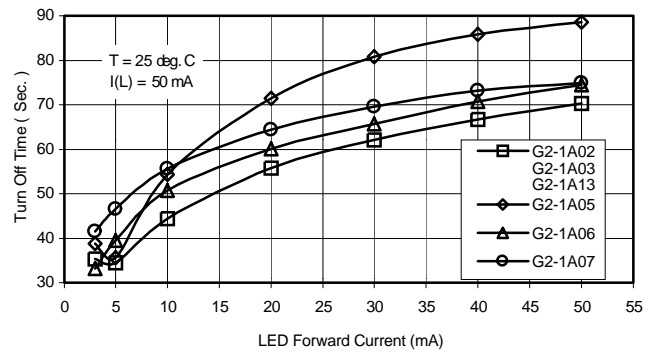
E. On Time vs. Ambient Temperature



F. Turn Off Time vs. Ambient Temperature



G. Turn On Time vs. LED Forward Current



H. Turn Off Time vs. LED Forward Current