

Photomos / 1 FORM A

Solid State Relays

Model Number	PLA110L PLA110 LCA110(L) LCA120L PLA134 PLA140									
Parameters	Sym.	Test Conditions	Units		1 Form A	1 Form A	1 Form A	1 Form A	1 Form A	1 Form A
Input Characteristics										
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}	$I_F = 5mA, I_L = 50mA$	Ω	Max	24	18	35	18	5	9
On Resistance: DC Mode(Note2)	R_{on}	$I_F = 5mA, I_L = 50mA$	Ω	Max	6	4.5	8.75	4.5	1.25	2.25
Off State Resistance	R_{off}	$I_F = 0mA, V_L = 100V$	G Ω	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".

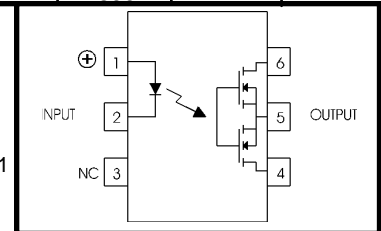
2: See "AC Mode and DC Mode Operation" on Page 67 for further description of AC and DC Mode.

3: Specifications subject to change without notice.

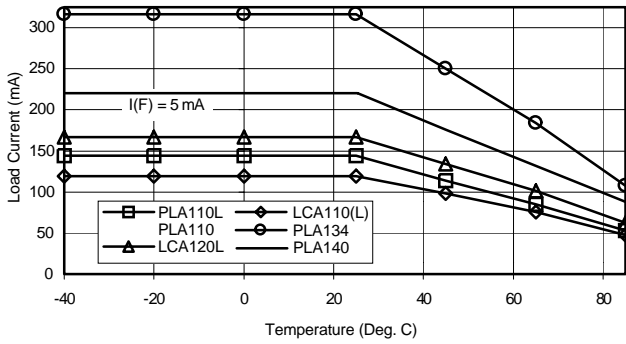
Schematic Top View:

Mold mark on top of relay indicates Pin #1

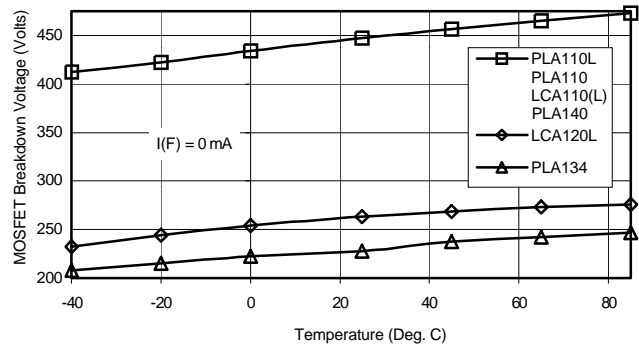
* $I_F = 10mA$



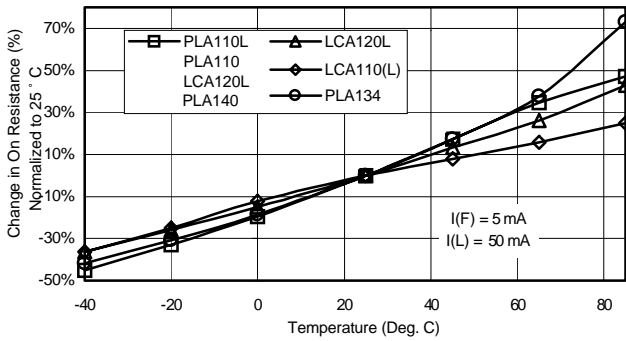
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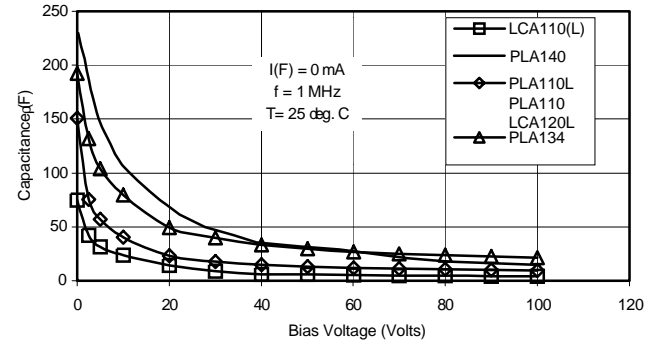
A. Load Current vs. Ambient Temperature



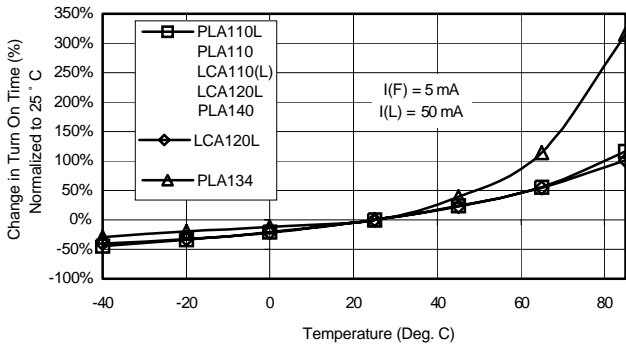
B. Output MOSFET BV vs. Ambient Temperature



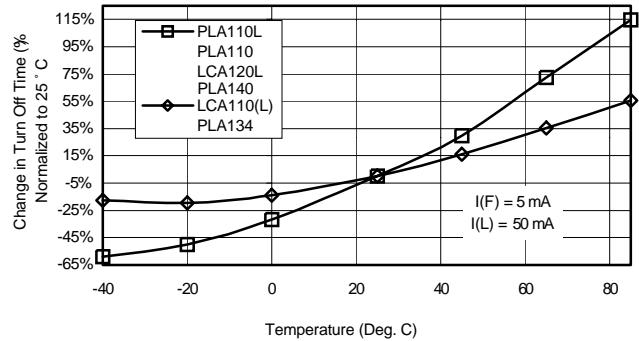
C. On-Resistance vs. Ambient Temperature



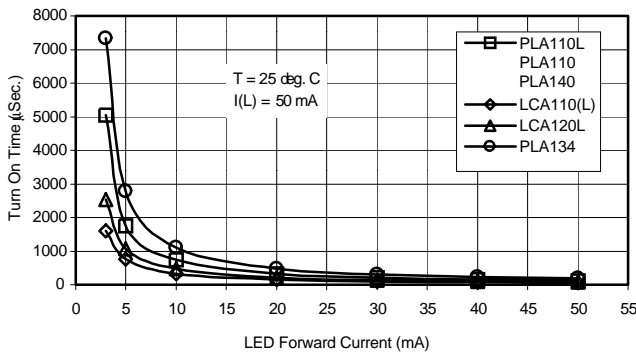
D. Output Capacitance vs. Applied Voltage



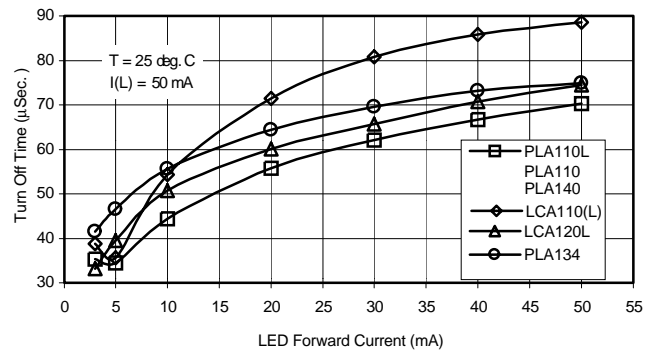
E. On Time vs. Ambient Temperature



F. Turn Off Time vs. Ambient Temperature



G. Turn On Time vs. LED Forward Current



H. Turn Off Time vs. LED Forward Current

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PhotoMOS				
Part No.	Max Switch Voltage	Max Switch Current	-	-
PLA110	400	250	-	-
PLA110L	400	250	-	-
PLA110LS	400	250	-	-
PLA110LSTR	400	250	-	-
PLA110S	400	250	-	-
PLA110STR	400	250	-	-

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Part No.	Max Switch Voltage	Max Switch Current	-	-
PLA134	150	900	-	-
PLA134S	150	900	-	-
PLA134STR	150	900	-	-

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Part No.	Max Switch Voltage	Max Switch Current	-	-
PLA140	400	425	-	-
PLA140S	400	425	-	-
PLA140STR	400	425	-	-

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Part No.	Max Switch Voltage	Max Switch Current	-	-
LCA120L	250	250	-	-
LCA120LS	250	250	-	-
LCA120LSTR	250	250	-	-

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LCA110	400	200	-	-
LCA110L	400	200	-	-
LCA110LS	400	200	-	-
LCA110LSTR	400	200	-	-
LCA110S	400	200	-	-
LCA110STR	400	200	-	-

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