



# Photomos / **DUAL FORM A** Solid State Relays

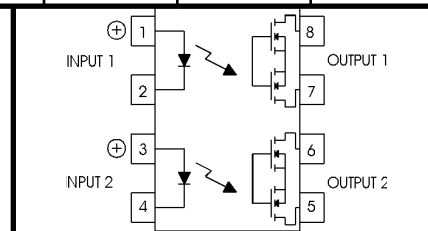
| Model Number                          |            |                               |            |         | PAA110L     | LAA110L     | PAA110      | LAA120L     |
|---------------------------------------|------------|-------------------------------|------------|---------|-------------|-------------|-------------|-------------|
| Parameters                            |            |                               |            |         | Dual Form A | Dual Form A | Dual Form A | Dual Form A |
| Input Characteristics                 | Sym.       | Test Conditions               | Units      |         |             |             |             |             |
| LED Forward Current - Turn on         | $I_{Fon}$  | $I_L = 100mA, t = 10ms$       | mADC       | Max Typ | 5.0<br>2.0  | 5.0<br>2.0  | 5.0<br>2.0  | 5.0<br>2.0  |
| LED Forward Current - Turn off        | $I_{Foff}$ | $I_L = 0.2mA, V_L = (Note 1)$ | mADC       | Min Typ | 0.1<br>1.8  | 0.1<br>1.8  | 0.1<br>1.8  | 0.1<br>1.8  |
| Recommended Forward Current           | $I_F$      |                               | mADC       | Min Max | 10<br>30    | 10<br>30    | 10<br>30    | 10<br>30    |
| LED Forward Voltage                   | $V_F$      | $I_F = 20mA$                  | VDC        | Min Max | 1.1<br>1.4  | 1.1<br>1.4  | 1.1<br>1.4  | 1.1<br>1.4  |
| <b>Maximum Input Ratings</b>          |            |                               |            |         |             |             |             |             |
| LED Forward Current                   | $I_F$      |                               | mADC       | Max     | 50          | 50          | 50          | 50          |
| LED Reverse Voltage Withstand         | $V_R$      | $I_R = 10mA$                  | VDC        | Max     | 10          | 10          | 10          | 10          |
| <b>Output Characteristics</b>         |            |                               |            |         |             |             |             |             |
| Switching Voltage                     | $V_L$      | $I_L = 50mA$                  | V PEAK     | Max     | 400         | 400         | 400         | 250         |
| Switching Current                     | $I_L$      | Each Channel                  | mA         | Max     | 150         | 120         | 180         | 180         |
|                                       |            | Both Ch's Simultaneously      | mA         | Max     | 110         | 70          | 125         | 125         |
| Current Limit                         | $I_{Lmt}$  | $I_F = 5mA, t = 5ms$          | mA         | Typ     | 380         | 380         | n/a         | 380         |
| On Resistance                         | $R_{on}$   | $I_F = 5mA, I_L = 50mA$       | $\Omega$   | Max     | 24          | 35          | 18          | 18          |
| Off State Resistance                  | $R_{off}$  | $I_F = 0mA, V_L = 100V$       | G $\Omega$ | Min Typ | 0.5<br>5000 | 0.5<br>5000 | 0.5<br>5000 | 0.5<br>5000 |
| Off State Leakage                     | $I_{off}$  | $I_F = 0mA, V_L = 100V$       | nA         | Max     | 200         | 200         | 200         | 200         |
|                                       | $I_{off}$  | $I_F = 0mA, V_L = Max$        | mA         | Typ Max | 0.5<br>1    | 0.5<br>1    | 0.5<br>1    | 0.5<br>1    |
| Turn On Time                          | $T_{on}$   | $I_F = 5mA, I_L = 50mA$       | ms         | Max     | 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         |
| Capacitance - Across Output           |            | $I_F = 0mA, V_L = 1V$         | pF         | Typ     | 95          | 60          | 95          | 110         |
|                                       |            | $I_F = 0mA, V_L = 50V$        | pF         | Typ     | 10          | 7           | 10          | 5           |
| Thermal Offset Voltage                |            | $I_F = 5mA$                   | mV         | Typ     | 0.2         | 0.2         | 0.2         | 0.2         |
| <b>General Characteristics</b>        |            |                               |            |         |             |             |             |             |
| Dielectric Strength - Input to Output |            | $t = 60sec$                   | VRMS       | Min     | 3750        | 3750        | 3750        | 3750        |
| Capacitance - Input to Output         |            |                               | pF         | Typ     | 1.2         | 1.2         | 1.2         | 1.2         |
| Power Dissipation                     | $P_{Diss}$ |                               | mW         | Max     | 600         | 600         | 600         | 600         |

## Notes:

1:  $V_L$  for LED Forward Current - Turn Off is 50 Volts less than "Switching Voltage : Max".

2: Specifications subject to change without notice.

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



For recommended applications and more information contact:

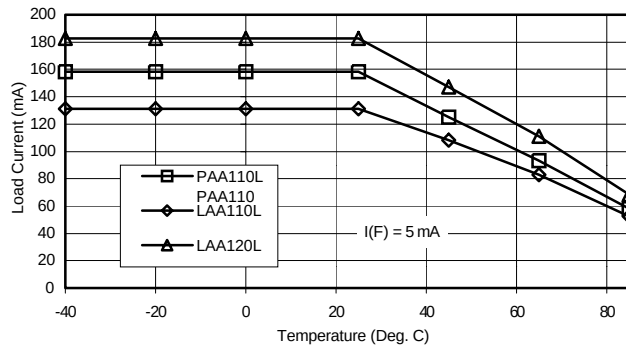
USA: Sales Support (877) 502-5500 Tech Support (877) 702-7700 FAX (619) 710-8540

Crydom Corp, 2320 Paseo de las Americas, Ste. 201, San Diego, CA 92154

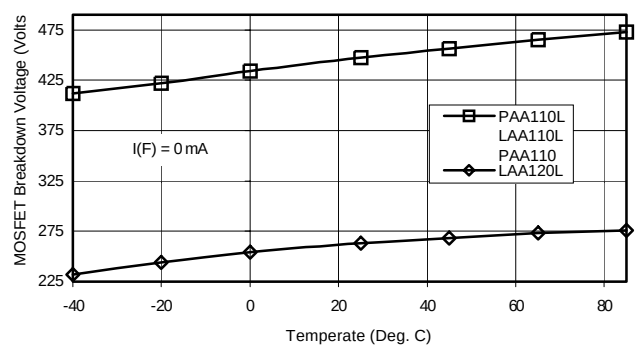
Email: sales@crydom.com WEB SITE: <http://www.crydom.com>

UK: +44 (0)1202 365070 • FAX +44 (0)1202 365090 Crydom International Ltd., 7 Cobham Road, Ferndown Industrial Estate, Ferndown, Dorset BH21 7PE, Email: [intsales@crydom.com](mailto:intsales@crydom.com).  
GERMANY: +49 (0)180 3000 506

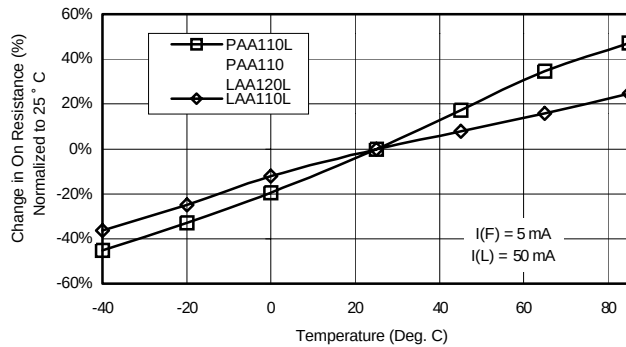
# Photomos / DUAL FORM A



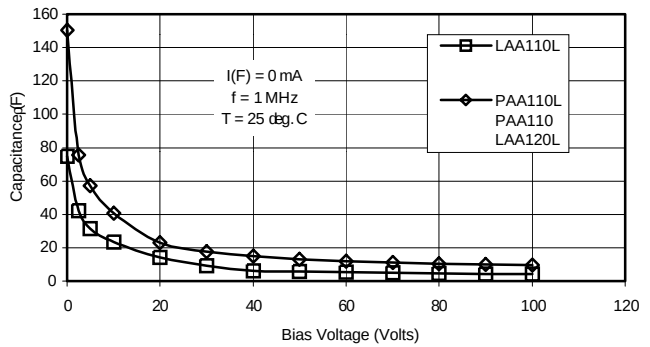
**A. Load Current vs. Ambient Temperature**



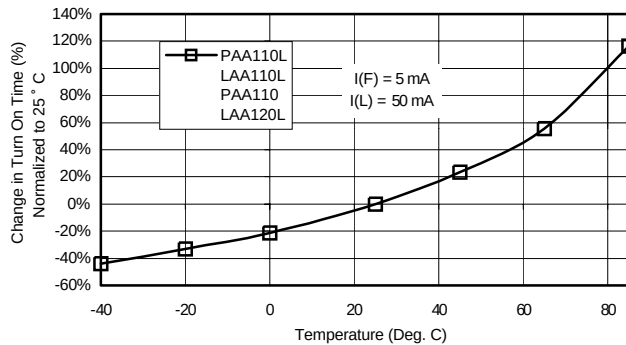
**B. Output MOSFET BV vs. Ambient Temperature**



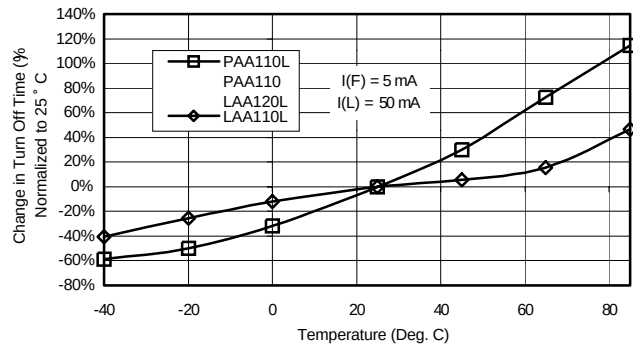
**C. On-Resistance vs. Ambient Temperature**



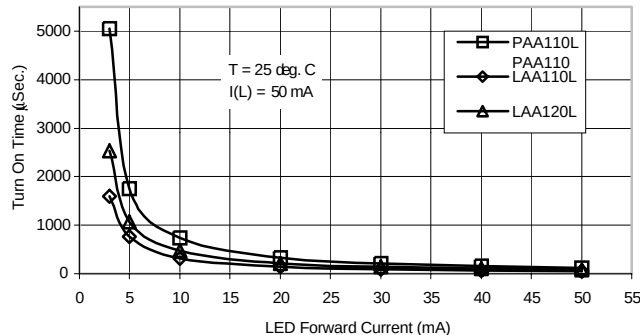
**D. Output Capacitance vs. Applied Voltage**



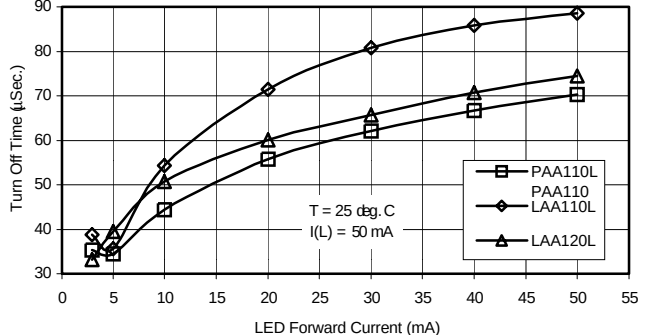
**E. On Time vs. Ambient Temperature**



**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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