



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

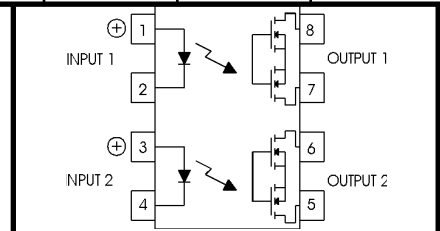
| Model Number                          |            |  |           |            | PAA110L     | LAA110L     | PAA110      | LAA120L     |
|---------------------------------------|------------|--|-----------|------------|-------------|-------------|-------------|-------------|
|                                       |            |  |           |            | Dual Form A | Dual Form A | Dual Form A | Dual Form A |
| Parameters                            | Sym.       | Test Conditions                          | Units     |            |             |             |             |             |
| <b>Input Characteristics</b>          |            |  |           |            |             |             |             |             |
| LED Forward Current - Turn on         | $I_{Fon}$  | $I_L = 100mA, t = 10ms$                  | mADC      | Max<br>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<br>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<br>Max | 10<br>30    | 10<br>30    | 10<br>30    | 10<br>30    |
| LED Forward Voltage                   | $V_F$      | $I_F = 20mA$                             | VDC       | Min<br>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<br>Both Ch's Simultaneously | mA        | Max        | 150         | 120         | 180         | 180         |
|                                       |            |  | 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<br>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<br>Typ | 200<br>0.5  | 200<br>0.5  | 200<br>0.5  | 200<br>0.5  |
|                                       | $I_{off}$  | $I_F = 0mA, V_L = Max$                   | mA        | Max        | 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         |
| 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.

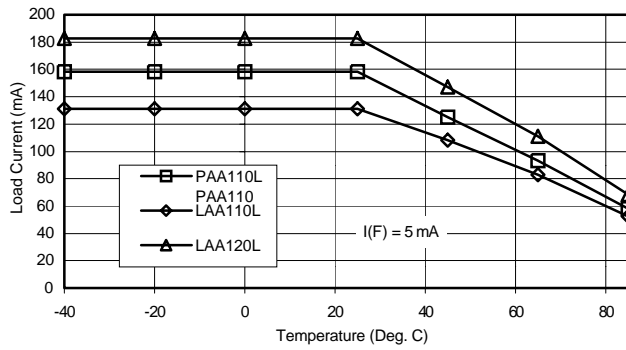
Schematic Top View:  
Mold mark on top of relay indicates Pin #1



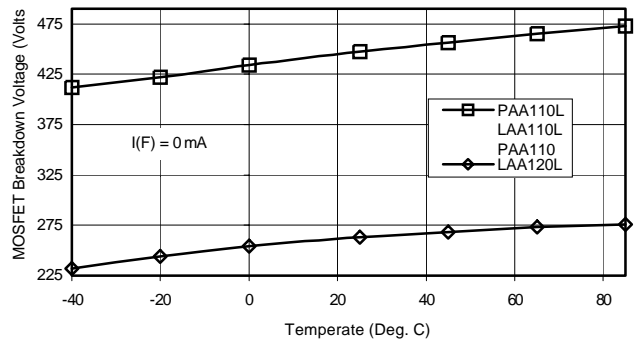
For recommended applications and more information contact:  
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**UK: +44 (0)1202 365070 • FAX +44 (0)1202 365090** Crydom International Ltd., 7 Cobham Road, Ferndown Industrial Estate, Ferndown, Dorset BH21 7PE, **Email: intsales@crydom.com.**  
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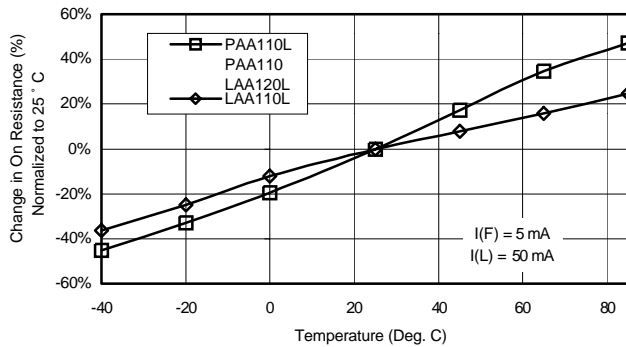
# Photomos / DUAL FORM A



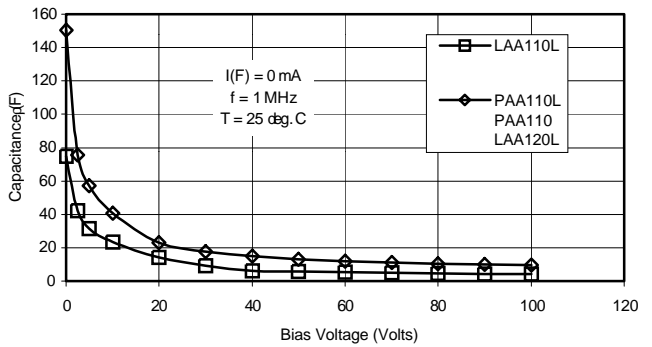
**A. Load Current vs. Ambient Temperature**



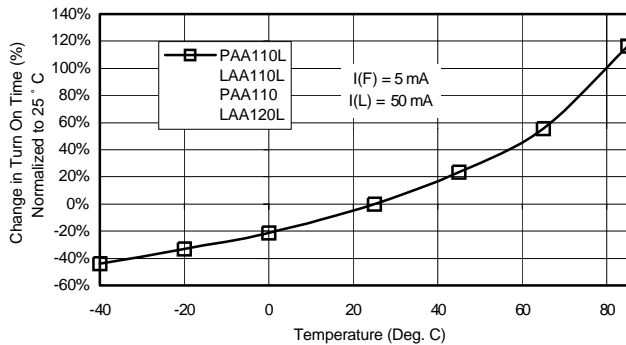
**B. Output MOSFET BV vs. Ambient Temperature**



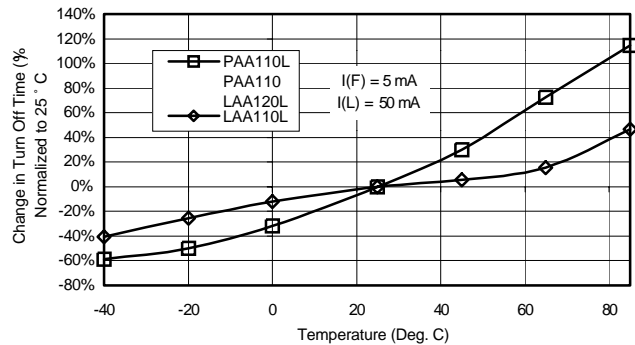
**C. On-Resistance vs. Ambient Temperature**



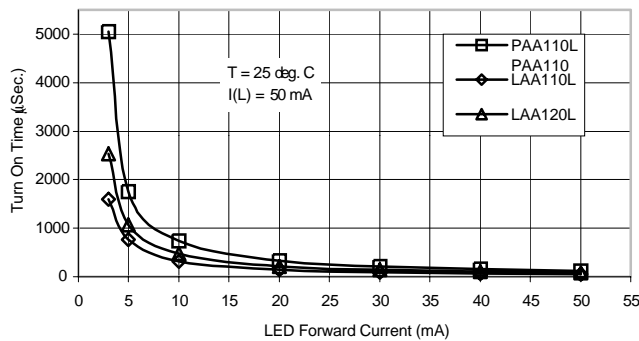
**D. Output Capacitance vs. Applied Voltage**



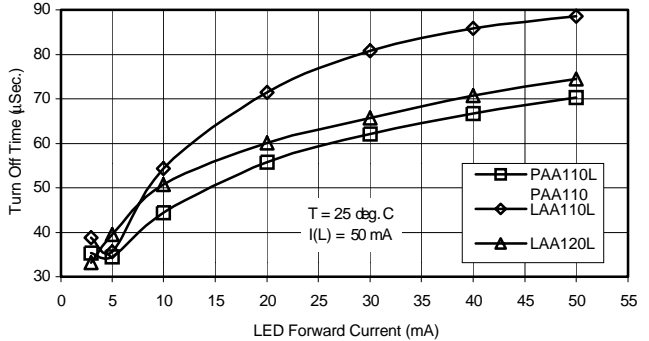
**E. On Time vs. Ambient Temperature**



**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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