

# OptoMOS<sup>®</sup>

## Solid State Switches



Engineering Specifications	LCA110	LCA120	LCA125	PLA110	LCB110	LCB120	XCA110	XCA120	OMA130	OMA160
<b>Output Characteristics</b>										
<b>Contact Form</b>	A	A	A	A	B	B	A	A	A	A
<b>Peak Blocking (V)</b>	350	250	300	400	350	250	300	200	60	250
<b>Continuous Rated Load (mA)</b>										
X Configuration	120	170	170	150	120	170	100	150	250	50
Y Configuration	200	300	300	210	200	300	150	250	400	80
<b>Peak Load/mA (10msec)</b>	350	400	400	400	350	400	350	400	500	100
<b>On Resistance (Ohms)</b>										
X Configuration, Typical	23	12	10	15	23	16	28	15	8	50
Maximum	35	20	16	22	35	20	40	25	10	100
Y Configuration, Typical	7	4	4	5	7	5	9	5	2	15
Maximum	10	6	5	7	10	6	15	10	3	30
<b>Switching Time (Max)</b>										
I <sub>CONTROL</sub> (mA)	5	5	5	5	5	5	5	8	10	10
T <sub>ON</sub> (msec)	3	5	5	1	3	5	4	5	5	0.125
T <sub>OFF</sub> (msec)	3	5	5	0.25	3	5	4	5	5	0.125
<b>Off State Leakage (Max) at Full Rated Voltage (μA)</b>	1	1	1	1	1	1	1	1	1	0.025
<b>Typical Capacitance at 0 Volts f = 1MHz (pF)</b>	25	50	50	35	25	50	25	50	50	5
*Also operates with I <sub>CONTROL</sub> = 2mA; T <sub>ON</sub> = 5 msec.; T <sub>OFF</sub> = 3 msec.										
<b>Input Characteristics</b>										
<b>Control Current (mA)**</b>										
Minimum	2	5	5	5	5	5	5	8	10	10
Maximum	100	100	100	100	100	100	100	100	100	100
<b>Voltage Drop (V)</b>										
Minimum	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Maximum	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
<b>Reverse Voltage (V, Max)</b>	5	5	5	5	5	5	5	5	5	5
<b>Reverse Leakage (μA, Max)</b>	10	10	10	10	10	10	10	10	10	10
<b>Input/Output (Capacitance, pF)</b>	3	3	3	3	3	3	3	3	3	3

\*I<sub>CONTROL</sub> represents the forward LED current used to activate the switch.

### Features:

- Small 6-pin DIP package
- Machine insertable/wave solderable
- Two milliwatt logic-compatible drive power
- No moving parts
- Loads up to 400 Volts AC/DC and 400 mA
- Lifetime in excess of 15 billion operations
- Arc-free with no snubbing circuits
- Optimal switching speeds
- 3.750 Volt input/output isolation
- UL recognized File No. E76270
- CSA compatible
- TO-5 package available
- MIL processing available
- Other configurations available
- BABT (BS 6301/BS 415 / BS7002) approval

When ordering CP Clare solid state switches, a suffix may be added to the part number to specify the following options:

Suffix	Option
E	3.750V Isolation Voltage
S	Gull-Wing Package*
T/R	Tape and Reel Package*
L	Current Limiting Versions (Available in 110, 120 and 190 Families)
C	Optional 4-Pin Configuration

### Absolute Maximum Ratings

Parameter	Min	Max	Units
Input/Output Isolation	2500	—	V <sub>RMS</sub>
Optional "E" Suffix	3750	—	V <sub>RMS</sub>
Operating Temperature†	-40	85	°C
Storage Temperature	-40	125	°C
Soldering Temperature (10 seconds on leads)	—	260	°C
All characteristics at 25°C			

### \*\*\*Typical Switching Time vs. Temperature:

- - LCA110, LCA120, LCA125 and OMA130
- - XCA110 and XCA120
- - OMA160

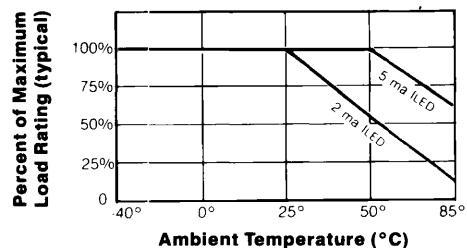
\*For a complete listing of CP Clare Solid State Products ask for our SSP15 catalog.

# OptoMOS®

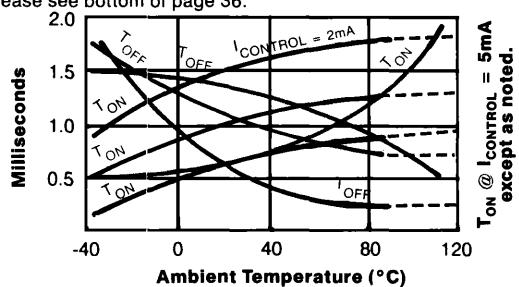
## Operating Specifications

### Performance

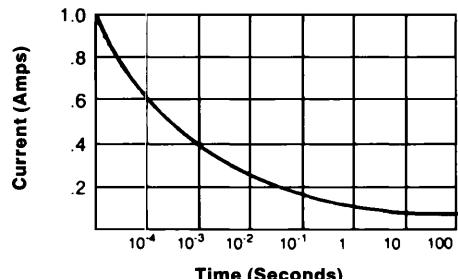
Load vs. Temperature



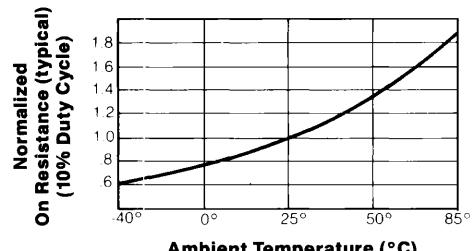
Typical Switching Time vs. Temperature \*\*\*  
Please see bottom of page 36.



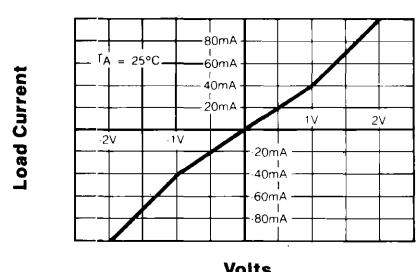
Energy Rating



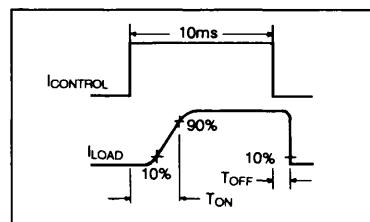
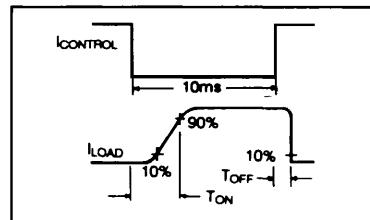
On Resistance vs. Temperature



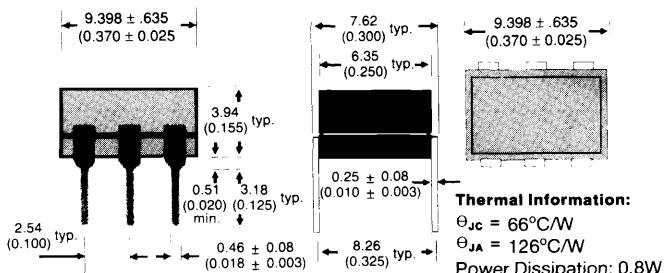
Typical I/V Characteristics



### Switching Characteristics

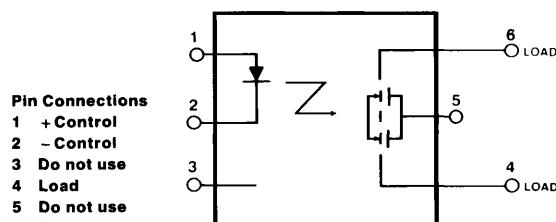


### Package Mechanical Dimensions



### Configuration X

This is the preferred configuration for AC circuits.



### Configuration Y

This configuration is most useful for DC circuits where the direction of the current does not change.

