OptoMOS®
Solid State Switches

Engineering Specifications	LCA110	LCA120	LCA125	PLA110	LCB110	LCB120	XCA110	XCA120	OMA130	OMA160
					Output Characteristics					
Contact Form	A	A	A	A	B	B	A	A	A	A
Peak Blocking (V)	350	250	300	400	350	250	300	200	60	250
Continuous Rated Load (mA)										
X Configuration	120	170	170	150	120	170	100	150	250	50
Y Configuration	200	300	300	210	200	300	150	250	400	80
Peak Load/mA (10msec)	350	400	400	400	350	400	350	400	500	100
On Resistance (Ohms)										
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
Switching Time (Max)										
$I_{CONTROL}$(mA)	5[1]	5	5	5	5	5	5	8	10	10
T_{ON} (msec)	3	5	5	1	3	5	4	5	5	0.125
T_{OFF} (msec)	3	5	5	0.25	3	5	4	5	5	0 125
Off State Leakage (Max) at Full Rated Voltage (μA)	1	1	1	1	1	1	1	1	1	0.025
***Typical Capacitance at* 0 Volts** f = IMHz (pF)	25	50	50	35	25	50	25	50	50	5

[1]Also operates with $I_{CONTROL}$ = 2mA ; T_{ON} = 5 msec.; T_{OFF} = 3 msec.

					Input Characteristics					
Control Current (mA)**										
Minimum	2	5	5	5	5	5	5	8	10	10
Maximum	100	100	100	100	100	100	100	100	100	100
Voltage Drop (V)										
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
Reverse Voltage (V, Max)	5	5	5	5	5	5	5	5	5	5
Reverse Leakage (μA, Max)	10	10	10	10	10	10	10	10	10	10
Input/Output (Capacitance, pF)	3	3	3	3	3	3	3	3	3	3

*$I_{CONTROL}$ 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_{RMS}
Optional "E" Suffix	3750	—	V_{RMS}
Operating Temperature†	-40	85	°C
Storage Temperature	-40	125	°C
Soldering Temperature (10 seconds on leads)	—	260	°C

All characteristics at 25°C

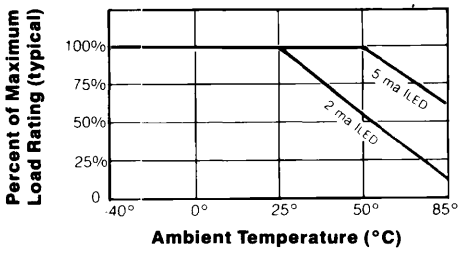
***Typical Switching Time vs. Temperature:**

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

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

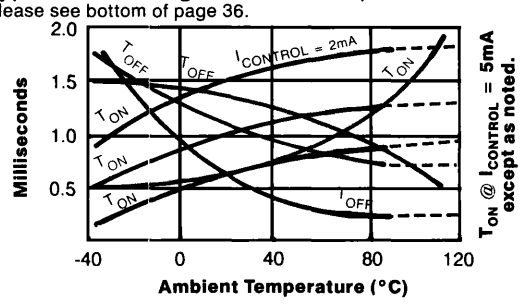
Performance

Load vs. Temperature

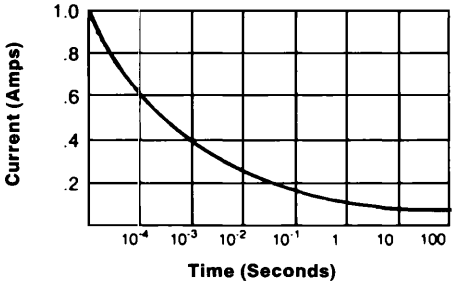


Typical Switching Time vs. Temperature***

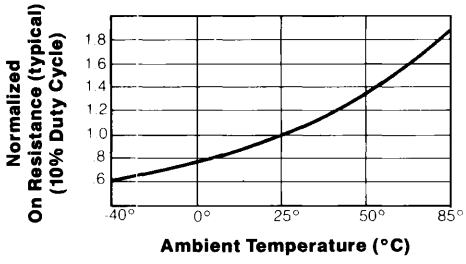
Please see bottom of page 36.



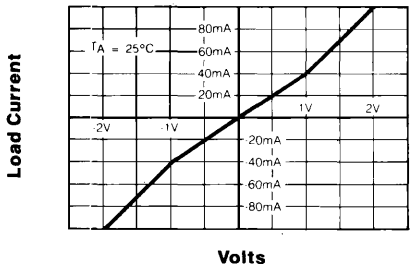
Energy Rating



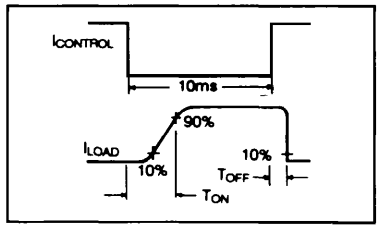
On Resistance vs. Temperature

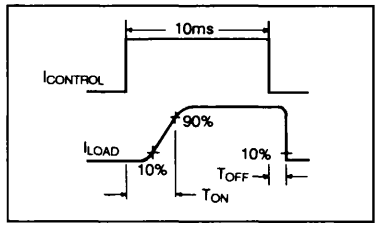


Typical I/V Characteristics

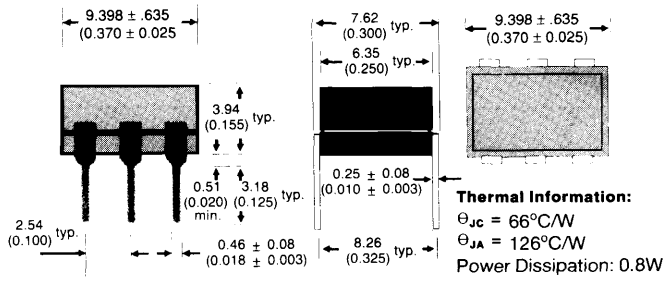


Switching Characteristics





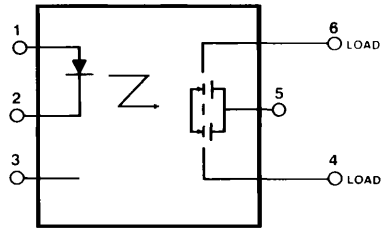
Package Mechanical Dimensions



Thermal Information:
Θ_{JC} = 66°C/W
Θ_{JA} = 126°C/W
Power Dissipation: 0.8W

Configuration X

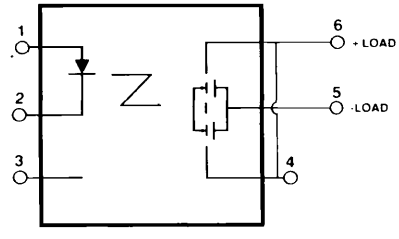
This is the preferred configuration for AC circuits.



Pin Connections
1 + Control
2 – Control
3 Do not use
4 Load
5 Do not use
6 Load

Configuration Y

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



Pin Connections
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