

# CLI200 CLI210 CLI220 CLI230

## Optical Switches

**GENERAL DESCRIPTIONS** — This Series of optical switches provides a small rugged unit capable of circuit board mounting. The units feature a Valox® housing and are epoxy backfilled. The optical switches feature both hermetically sealed, glass lensed IREDs and either a photo-transistor or a darlington phototransistor sensor for maximum reliability. The CLI200 and CLI210 have photo-transistor outputs providing excellent sensor current levels along with fast switching speeds. The CLI220 and CLI230 have darlington phototransistor outputs providing very high sensor current levels. The CLI210 and CLI230 have a .005" slit over the sensor aperture for additional target resolution.

### ABSOLUTE MAXIMUM RATINGS

Maximum Temperature:

Storage - 55°C to + 150°C

Operating Jct. Temperature + 100°C

### EMITTER (GaAs Diode)

Power Dissipation:

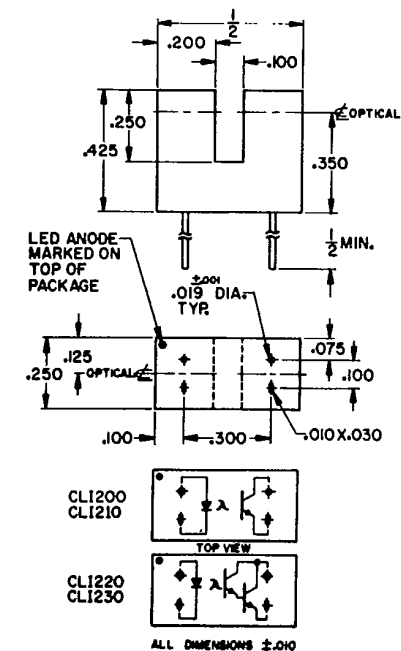
At 25°C Amb., Pd= 100mw, derate 1.33mw/°C

Maximum Voltage:

V<sub>R</sub> Reverse Voltage= 3.0 volts

Maximum Current:

I<sub>F</sub> D.C. Forward Current= 60ma cont.



### DETECTOR

Power Dissipation:

At 25°C amb., Pd=50mw, derate 0.5mw/°C

Maximum Voltages:

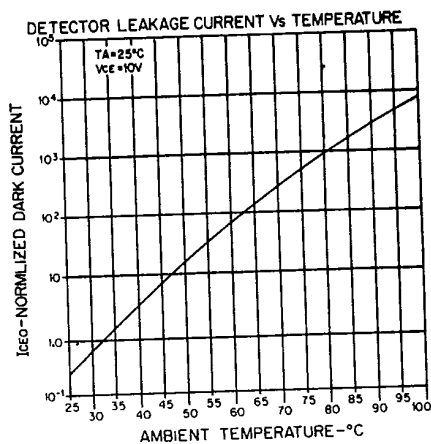
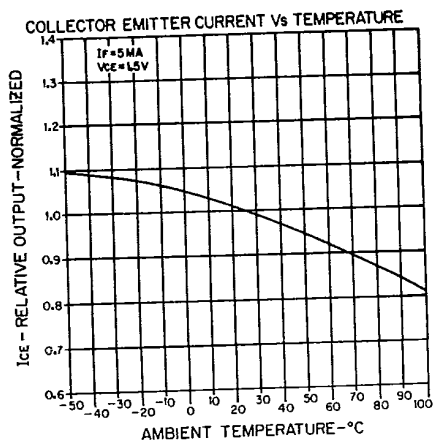
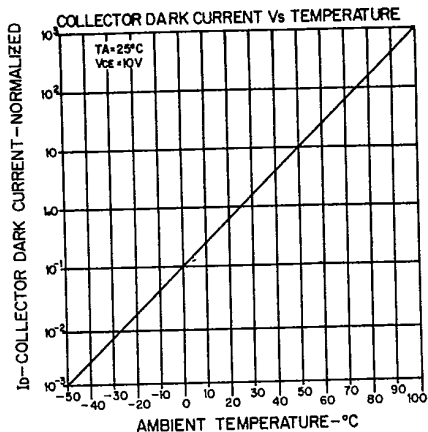
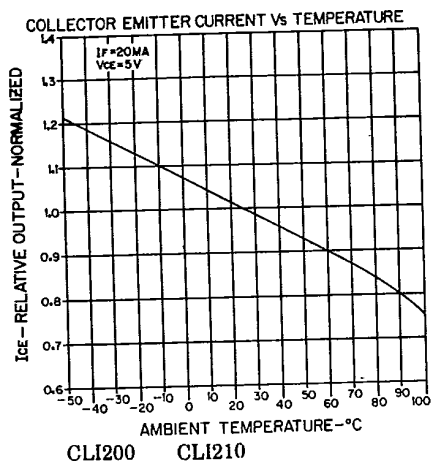
V<sub>CE0</sub> 40V, V<sub>ECO</sub> =5V

Maximum Current:

I<sub>C</sub>, Collector Current 200ma pulsed

### ELECTRICAL CHARACTERISTICS 25°C Free Air

Symbol	Characteristics	Test Conditions	CLI200		CLI210		CLI220		CLI230		Units
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
IRED V <sub>R</sub> V <sub>F</sub>	Reverse Voltage	I <sub>R</sub> =10 μa	3		3		3		3		volts
	Forward Voltage	I <sub>F</sub> =16 ma		1.5		1.5		1.5		1.5	volts
SENSOR BV <sub>CEO</sub> I <sub>D</sub>	Collector to Emitter Breakdown Voltage	I <sub>C</sub> =100 μa	40		40		40		40		volts
	Leakage Current	V <sub>CE</sub> =10V, I <sub>F</sub> =0		50		50		100		100	na
COUPLED I <sub>CE</sub> V <sub>CE(SAT)</sub>	Sensor Current	I <sub>F</sub> =20ma, V <sub>CE</sub> =5V	1.0		.10		10		2		ma
	Collector to Emitter Saturation Voltage	I <sub>F</sub> =20ma, I <sub>C</sub> =.05ma I <sub>F</sub> =20ma, I <sub>C</sub> =.5ma I <sub>F</sub> =20ma, I <sub>C</sub> =1ma		.5		.5		1.2		1.2	volts
T <sub>R</sub> , T <sub>F</sub>	Rise, Fall Time	I <sub>C</sub> =2ma, V <sub>CC</sub> =5V R <sub>L</sub> =100 ohms	5 TYP		5 TYP		150 TYP		150 TYP		μsec
T <sub>R</sub> , T <sub>F</sub>	Rise, Fall Time	I <sub>C</sub> =2ma, V <sub>CC</sub> =5V R <sub>L</sub> =1000 ohms	15 TYP		15 TYP						μsec



CLI220 CLI230

