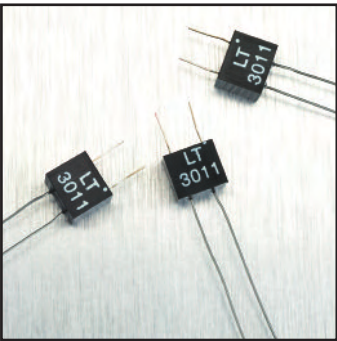


**Analog Optical Isolators—
VTL5C Series**

PerkinElmer Optoelectronics' line of AOIs consists of a light-tight package which houses a light source and one or more photoconductive cells. Through control of the input current or voltage applied to the AOI, the output resistance can be varied. The output resistance can be made to switch between an "on" and "off" state or made to track the input signal in an analog manner. Because a small change in input signal can cause a large change in output resistance, AOIs have been found to provide a very economical and technically superior solution for many applications.



LT Series

Table Key LT Series

- R1mA Output Resistance at If=1 mA
- R20mA Output Resistance at If=20 mA
- R01 Dark Resistance after 1 sec (If=0)
- R05 Dark Resistance after 5 sec (If=0)
- Top Operating Temperature Range
- Tst Storage Temperature Range
- Vi Input/Output Insulation Voltage
- TC Module Thermal Coefficient
- Ton Rise Time to 63% of final R20
- Toff Decay Time to 37% of initial R20
- Cs Output Capacity
- Vmax Operating Voltage at If=0
- Pmax Output Power Dissipation at 25°C

VTL Series

Technical Specification

Part Number	Material Type	On Resistance Input Current	Dark Resistance Adapted typ.	Off Resistance @ 10 sec. min.	Slope	Dynamic Range	Cell Voltage	Turn-on to 63% Final R _{ON} typ.	Turn-off (Decay) to 100Ω max.
VTL5C1	1	1 mA 10 mA 40 mA	20 kΩ 600 Ω 200 Ω	50 MΩ	15	100 db	100 V	2.5 ms	35 ms
VTL5C2	0	1 mA 10 mA 40 mA	5.5 kΩ 800 Ω 200 Ω	1 MΩ	24	69 db	200 V	3.5 ms	500 ms
VTL5C2/2	0	5 mA 40 mA	2.5 kΩ 700 Ω	1 MΩ	20	65 db	50 V	7 ms	150 ms
VTL5C3	3	1 mA 10 mA 40 mA	30 kΩ 5 kΩ 1.5 kΩ	10 MΩ	20	75 db	250 V	2.5 ms	35 ms
VTL5C3/2	3	1 mA 40 mA	55 kΩ 2 kΩ	10 MΩ	19	71 db	100 V	3 ms	50 ms
VTL5C4	4	1 mA 10 mA 40 mA	1.2 kΩ 125 Ω 75 Ω	400 kΩ	18.7	72 db	50 V	6 ms	1.5 sec
VTL5C4/2	4	1 mA 10 mA	1.5 kΩ 150 Ω	400 kΩ	8.3	68 db	30 V	6 ms	1.5 sec
VTL5C6	0	1 mA 10 mA 40 mA	75 kΩ 10 kΩ 2 kΩ	100 MΩ	16.7	88 db	250 V	3.5 ms	50 ms (1 MΩ)
VTL5C7	7	0.4 mA 2 mA	5 kΩ 1.1 kΩ	1 MΩ	5.7	75 db	50 V	6 ms	1 sec. (100 kΩ)
VTL5C8	0	1 mA 4 mA 16 mA	4.8 kΩ 1.8 kΩ 1 kΩ	10 MΩ	8	80 db	500 V	4 ms	60 ms
VTL5C9	1	2 mA	630 Ω	50 MΩ	7.3	112 db	100 V	4 ms	50 ms
VTL5C10	4	1 mA	400 Ω	400 kΩ	3.8	75 db	50 V	1 ms	1.5 sec

Specification Notes

LED Current: Since the input has a substantially constant voltage drop, a current-limiting resistance is required.

ON Resistance: Dark adapted resistance measured after 24 or more hours of no input.

OFF Resistance: Measured 10 sec. after removal of the input. The ultimate resistance is many times greater than the value at 10 sec.

Response Time: Ascent measured to 63% of final conductance from the application of 40 mA input. The conductance rise time

to a specified value is increased at reduced input drive while the conductance decay time to a specified value is decreased.

Typical matching and tracking from 0.4 to 40 mA is 25%.

Measured 5 sec. after removal of the input. The ultimate resistance is many times greater than the value at 5 sec.

VTL5C9 response times are based on a 2 mA input. VTL5C10 response times are based on a 10 mA input for ascent time and a 1 mA input for decay time.

LT Series

Technical Specification

Part Number	Typical Electro-Optical Characteristics						Limit Values						
	R1mA kΩ	R20mA typ. kΩ	R01 min. MΩ	R05 min. MΩ	top range °C	tst range °C	Vi min. V	TC 10 lux %/°K	ton msec	toff typ. msec	Cs max. pF	Vmax V	Pmax mW
LT3011-2	—	1	3	9	-20—+60	-20—+80	2500	2	10	10	2	50	50
LT3011	—	0.32	0.1	0.3	-20—+70	-20—+70	2500	0.4	50	40	2	100	75
LT9909	0.7—1.2	0.35	0.06	0.18	-20—+70	-20—+70	1000	0.4	40	40	1	50	50
LT9910	1.2—2.5	0.7	0.06	0.18	-20—+70	-20—+70	1000	0.4	40	40	1	50	50
LT9911	2—5	1.5	0.1	0.3	-20—+70	-20—+70	1000	0.4	50	40	1	100	50
LT9912	4.5—9	2	0.2	0.6	-20—+70	-20—+70	1000	0.4	40	30	1	100	50
LT9913	8—16	3.5	0.5	1.5	-20—+70	-20—+70	1000	0.4	35	30	1	100	50
LT9914	14—25	6	0.7	2.1	-20—+70	-20—+70	1000	0.4	35	30	1	100	50

All readings taken at standard light A (2854 K color temperature) after 2 hours of preillumination at 500 lux.

Input/Output Coupling Capacity: 1 pF max.

Reverse Voltage: 4 V max.

Diode Forward Current: 25 mA max. DC