

TAOS Opto Components



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TAOS' intelligent opto sensors simplify analog-to-digital conversion of light and are designed to reduce the need for signal conditioning or pre-processing circuitry in light-centric systems. TAOS' light sensing solutions improve system performance and reduce design-cycle time giving designers the flexibility they require.

LIGHT-TO-VOLTAGE CONVERTERS

TAOS Inc.'s Light-to-Voltage (LTV) solutions combine a photodiode and transimpedance amplifier on a single monolithic IC. The LTV family provides a linear analog voltage output that is proportional to light intensity which is normally fed to an ADC for digital processing.

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MOUSER STOCK NO.	Fig.	Responsivity (mV/μW/cm ²)	Rise Time (μs)	Spectral Response (nm)	Voltage Range	Price Each			
						1	10	100	500
856-TSL257-LF	A	1300 @ 470nm	160	350-1000	2.7V to 5.5V	2.02	1.76	1.51	1.36
856-TSL267-LF	A	450 @ 940nm	160	850-1000	2.7V to 5.5V	2.02	1.76	1.51	1.36
856-TSL12S-LF	A	248 @ 640nm	20	320-1050	2.7V to 5.5V	1.26	1.10	.95	.85
856-TSL235R-LF	A	248 @ 640nm	20	400-1000	2.7V to 5.5V	3.60	3.15	2.70	2.43
856-TSL253R-LF	A	248 @ 640nm	7	350-1000	2.7V to 5.5V	3.15	2.70	2.43	1.98
856-TSL254R-LF	A	248 @ 640nm	2.5	350-1000	2.7V to 5.5V	3.24	2.84	1.89	1.63
856-TSL250R-LF	A	137 @ 635nm	260	350-1000	2.7V to 5.5V	2.52	2.21	1.89	1.70
856-TSL13S-LF	A	64 @ 640nm	8	320-1050	2.7V to 5.5V	1.26	1.10	.95	.85
856-TSL251R-LF	A	52 @ 635nm	70	350-1000	2.7V to 5.5V	2.52	2.21	1.89	1.70
856-TSL14S-LF	A	16 @ 640nm	3	320-1050	2.7V to 5.5V	1.26	1.10	.95	.85
856-TSL252R-LF	A	10.2 @ 635nm	7	350-1000	2.7V to 5.5V	2.52	2.21	1.89	1.70
856-TSL261R-LF	A	43.5 @ 940nm	70	850-1000	2.7V to 5.5V	2.52	2.21	1.89	1.70
856-TSL262R-LF	A	248 @ 640nm	70	850-1000	2.7V to 5.5V	2.52	2.21	1.47	1.26
856-TSL257T	B	248 @ 640nm	160	350-1000	2.7V to 5.5V	2.32	2.02	1.35	1.16
856-TSL12T	B	96 @ 640nm	20	320-1050	2.7V to 5.5V	1.37	1.20	1.03	.92
856-TSL13T	B	24 @ 640nm	8	320-1050	2.7V to 5.5V	1.37	1.20	1.03	.92
856-TSL250RD	C	69 @ 640nm	260	350-1000	2.7V to 5.5V	2.88	2.52	2.16	1.94
856-TSL251RD	C	17 @ 640nm	70	350-1000	2.7V to 5.5V	2.88	2.52	2.16	1.94

LIGHT-TO-FREQUENCY CONVERTERS

The LTF sensor performs the functions of light sensing, signal conditioning, and A/D conversion in a single monolithic IC. The LTF device converts light intensity to a digital format for a direct interface to a microcontroller.

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MOUSER STOCK NO.	Fig.	Minimum Full Scale Frequency	Dark Signal Frequency	Spectral Response (nm)	Programmable	Price Each			
						1	10	100	500
856-TSL237S-LF	A	500KHz	0.1Hz	350-1000	No	3.78	3.31	2.84	2.55
856-TSL237SM-LF	A	500KHz	0.1Hz	350-1000	No	3.92	3.36	2.12	1.83
856-TSL245R	A	500KHz	0.1Hz	850-1000	No	3.60	3.15	2.70	2.43
856-TSL237T	B	500KHz	0.1Hz	350-1000	No	3.71	3.24	2.78	2.50
856-TSL238T	B	500KHz	0.3Hz	350-1000	Yes	2.50	2.25	1.98	1.80
856-TSL230RD	C	1.1MHz	0.4Hz	350-1000	Yes	2.29	2.16	2.10	2.03
856-TSL238D	C	500KHz	0.3Hz	350-1000	Yes	3.67	3.29	2.20	1.89
856-TSL230RP-LF	D	1.1MHz	0.4Hz	350-1000	Yes	6.91	6.05	5.18	4.67

LIGHT-TO-DIGITAL CONVERTERS

TAOS Inc.'s Light-to-Digital Converters combine a broadband photodiode (350 nm to 1100 nm) with a visible light blocking photodiode in a single CMOS integrated circuit.

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MOUSER STOCK NO.	Fig.	Selectable Integration	Dynamic Range (lux)	ADC Digital Output	Operating Voltage	Price Each			
						1	10	100	500
856-TSL2550T	B	160&800	0-10,000	7-bit companded	5V	3.28	2.87	2.46	2.21
856-TSL2560CS	E	12,100,400msec	0-40,000	16 bit Linear	5V	2.98	2.55	1.61	1.38
856-TSL2560T	E	12,100,400msec	0-40,000	16 bit Linear	5V	2.77	2.37	1.50	1.29
856-TSL2561CS	E	12,100,400msec	0-40,000	16 bit Linear	5V	2.98	2.55	1.61	1.38
856-TSL2561T	E	12,100&400	0-40,000	16 bit Linear	3V	2.84	2.49	2.13	1.92
856-TSL2563CS	E	12,100&400	0-40,000	16 bit Linear	2.5V	2.98	2.55	1.61	1.38
856-TSL2563T	E	12,100&400	0-40,000	16 bit Linear	2.5V	2.77	2.37	1.50	1.29
856-TSL2550D	C	160&800	0-10,000	7-bit companded	5V	3.49	3.06	2.62	2.36

COLOR SENSORS, 2.7V TO 5.5V

The integrated color LTV sensors combine a photodiode, color filter, and transimpedance amplifier on a single die. TAOS solution requires fewer components, saves board space and reduces assembly cost over a discrete photodiode approach.

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MOUSER STOCK NO.	Fig.	Output	Colors	Op. Temperature Range (TA)	Voltage Range	Price Each			
						1	10	25	50
856-TCS3200D-TR	C	4 CH Light to Freq.	RGB, Clear	-40°C to 85°C	2.7V to 5.5V	2.44	2.36	2.21	2.04
856-TCS3210D-TR	C	4 CH Light to Freq.	RGB, Clear	-40°C to 85°C	2.7V to 5.5V	2.44	2.36	2.21	2.04
856-TCS3414CS	F	16 Bit Digital	RGB, Clear	-40°C to 85°C	2.7V to 3.6V	3.51	3.39	3.18	2.94

LINEAR SENSOR ARRAYS

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MOUSER STOCK NO.	Fig.	Resolution	# Pixels	Active Length (mm)	Outputs	Price Each			
						1	10	100	500
856-TSL1401R-LF	D	400	128	8.12	one analog	8.17	7.15	6.13	5.52
856-TSL3301LF	D	300	102	8.64	8-bit digital	9.90	8.66	5.77	4.96
856-TSL201R-LF	D	200	64	8.26	one analog	7.20	6.30	5.40	4.86
856-TSL1401CS	G	400	128	8.12	one analog	8.82	7.56	5.21	4.48
856-TSL1402R	H	400	256	-	two analog	14.31	13.70	9.03	8.23
856-TSL202R	H	200	128	-	one analog	12.50	10.00	9.63	9.63
856-TSL1406R	I	400	768	2.08	two analog	25.60	23.27	18.28	17.06
856-TSL1406RS	I	400	768	2.08	two analog	25.60	23.27	21.33	17.06
856-TSL1410R	I	400	1280	3.58	two analog	47.03	42.32	37.62	26.87
856-TSL1412S	I	400	1536	3.59	two analog	77.77	66.66	52.69	40.25
856-TSL2014	J	200	896	4.73	one analog	82.32	70.56	55.68	42.60
856-TSL208R	K	200	512	2.85	one analog	60.94	52.23	47.01	38.30

EVALUATION BOARDS (EVM)

MOUSER STOCK NO.	Fig.	Description	Price Each
856-TCS3200EVM	-	Evaluation system for TCS230 color sensor, consist's of a lens module, white LED illuminator,	175.00
856-TSL3301USBSEVM	-	Evaluation system for TSL3301 Linear Optical Sensor Array with USB interface	190.00
856-LTFEVM	-	Evaluation system for Light to Frequency Module	191.00

