

JENCOLOR - True Color Sensors (Color Measurement to DIN 5033)

PRODUCT INFORMATION



JENCOLOR True Color Sensor ICs are specifically designed for sensitivity to yield a significantly improved performance where color deviations have to be resolved. Each sensor IC consists of a PIN photodiode with sensitivity optimized for the visible wavelength range, and a directly mounted interference filter. Of greater blue-sensitivity, these sensors also provide a general improvement in practical operating values.

The interference filter represents on-chip-microstructured filter layers. These feature high transmission in the bandpass range and resistance to aging, mechanical impacts and thermal influences.

Interference filters which are directly deposited onto a silicon waver have already recommended themselves in many applications.

How good a result can be achieved by color measurement essentially depends on the type and quality of the filter function.

The new generation of JENCOLOR True Color Sensors implements the tri-stimulus value function (under DIN 5033, part 2) in a way that allows colors to be determined according to the three range procedure – measurement with spectral properties - as defined in part 6 of DIN 5033.

It facilitates applications for “sufficiently accurate detection“ of emitting, remitting, or transmitting samples. Such applications include, for example, LED testing and sorting, monitor calibrating, or simple, compact and low-cost modules for color measurement.

The spectral sensitivity distribution of each interference filter cell is obtained as a functional diagram of the spectral sensitivity of the filter's base material versus its transmittance, with the standard distribution function representing the sensor's actual sensitivity.

The output currents of the color sensor ICs are a function of the spectral

composition of incident light, weighted with the function of the filter which is mounted to the photodiode.

A special factor is defined for gain matching of, and normalization of the values measured in each channel, in order to fulfill Luther's condition. The resulting absolute standard spectral coefficients for XYZ are available for further mathematical conversion into a randomly selectable color space.

Highlights

- *Detection/ measurement of colors more accurately and much faster than human eye*
- *low dark current*
- *Signal input frequencies > 100 kHz*
- *RoHS compliant*
- *Values display as XYZ*
- *Calibration in system L^*a^*b*

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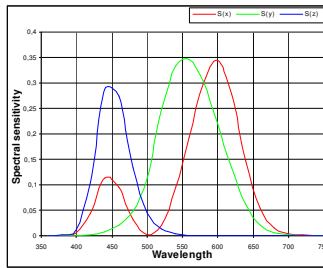
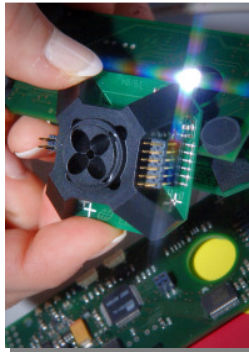
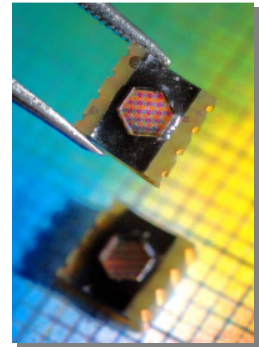


Figure: Spectral sensitivity of True Color sensors



Product Overview of JENCOLOR® - True Color Sensors

True Color Sensor ICs			
MTCSi	True Color Sensor IC		Ordering code:
MTCSiCS	with transparent glob top in SO package		V520P020310
MTCSiCT	with transparent glob top in TO39 package		V520P020422
MTCSiCO	with optical lens in TO39 package		V520P020462
MTCS FIKU	Sensor IC characteristics (TXT-file)		V500A000017
Accessories			
MTCS-ME1 modEVA Main	modEVA: Mainboard with μ C and USB interface		V522A100030
MTCS-ME1 modEVA Main Fr	modEVA: Mainboard for FRONT module with μ C and USB interface		V522A100031
MTCS-ME1 modEVA Soft	modEVA: Software USB driver (f. USB 2.0) and PC test software		V522A100020
MTCS-ME1 modEVA DLL	modEVA: API program interface (DLL)		V522A100022
MTCS-ME1 modEVA USB	modEVA: Cable USB 59204-9401; 1m, Plug Type A/mini-B		V522A100021
MTCS-ME1 modEVA TOP	modEVA: TOP plug-module with 4xLED, Sensor-IC, circular hole and signal electronics		V522A100040
MTCS-ME1 modEVA FRONT	modEVA: FRONT plug-module with 2xLED, Sensor-IC, circular hole and signal electronics		V522A100050
MTCS-ME1 modEVA DARK CCC	modEVA: DARK CCC plug-module with Sensor-IC, circular hole and signal electronics (Current-Charge-Converter)		V522A100060
MTCS-ME1 modEVA DARK TIA	modEVA: DARK TIA plug-module with Sensor-IC, circular hole and signal electronics (Transimpedance amplifier)		V522A100070
Transimpedance amplifier			
MTI04xx	Multi-channel preamplifier (current to voltage amp.)		
MTI04BD	delivery form die (PCM tested) sawed on foil		V520T012040
MTI04BS-BF	delivery form SOP16, lead-free		V520T012045
MTI04BQ-BF	delivery form QSOP16, lead-free		V520T012046
MTI04CS	NEW! delivery form SOP16, lead-free		E036A000110
MTI04CQ	NEW! delivery form QSOP16, lead-free		E036A000139

Further information available at <http://www.MAZeT.de> or from our sales departments!