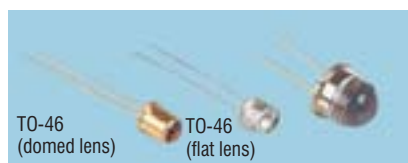


Emitters and Detectors - continued

Infra-Red Emitters - Plastic Package - continued

Order Multiple=5		Price Each				
Mfrs. List No.	Order Code	1+	10+	100+	500+	+
5mm/T1¼						
LD271	121-2748	37.00	31.00	29.00	24.00	--
SFH415-U	121-2749	22.00	19.00	18.00	15.00	--
SFH484-2	121-2737	57.00	48.00	46.00	38.00	--
SFH485P	121-2738	49.00	42.00	39.00	32.00	--
SFH486	121-2759	38.00	33.00	31.00	26.00	--
TSHA5201	104-5516	22.00	20.00	17.00	14.00	--
TSHA5200	104-5522	21.00	18.00	16.00	12.00	--
TSUS5202	104-5377	11.00	10.00	8.00	7.00	--
TSUS5400	104-5378	11.00	10.00	8.00	7.00	--
3mm/T1						
OP165D	178-945	139.00	115.00	100.00	39.00	--
SEP8705-3	120-1203	85.00	80.00	77.00	73.00	--
TSHA4401	104-5517	22.00	20.00	17.00	14.00	--
TSUS4300	104-5518	13.00	12.00	10.00	8.00	--
TSAL4400	104-5420	10.00	9.00	8.00	6.00	--
1.8mm/T1¼						
CQY37N	104-5521	20.00	18.00	15.00	12.00	--
TO-18 Narrow Angle						
OP298B	491-305	74.00	54.00	52.00	51.00	--
TO-18 Wide Angle						
OP293B	491-299	84.00	38.00	--	--	--
Side Viewing						
OP240B	316-7537	76.00	61.00	53.00	42.00	--
SEP85063						
SEP85063	120-1204	83.00	77.00	75.00	70.00	--
SEP8736-3	120-1209	83.00	77.00	75.00	70.00	--

Infra-Red Emitters - Sealed Metal Package



TO-46
Lead pitch=2.54,
Tag: Cathode
Anode connected to case.

Light Output mW @ 1 _F (mA)	Half Angle	Peak Wavelength	Switching tr,tf (ns)	Mfr.	Mfrs. List No.
TO-46 Narrow Angle (Domed Lens)					
5@100	18°	935nm	1	OPTEK	OP133
7.0@100	20°	880nm	0.6	HONEYWELL	SE5470-3
9	20	880	1.5	QT	F5D2
3.5@100	15°	940nm	1	QT	LED55B
5.4@100	15°	940nm	1	QT	LED55C
TO-46 Wide Angle (Flat Lens)					
12@100	80°	880nm	1.5	QT	F5E1

◆ Power emitted about the mechanical axis of the package into 6.35mm dia. aperture placed 36.3mm from top of flange.

221666

Mfrs. List No.		Price Each			
Order Code	1+	25+	50+	100+	
TO-46 Narrow Angle					
OP133	316-7549	192.00	172.00	149.00	102.00
SE5470-3	327-359	251.00	240.00	231.00	220.00
F5D2	102-1135	182.00	160.00	112.00	83.00
LED55B	102-1136	177.00	148.00	104.00	77.00
LED55C	102-1137	180.00	151.00	106.00	78.00
TO-46 Wide Angle					
F5E1	102-1139	192.00	166.00	116.00	86.00

Infra-Red Emitter - Panel Mounting



CQW13 infra-red emitter in bright plated housing with mirror reflector and optical system, giving high radiation intensity (720mW/Sr typ.) and greatly increased transmission distance. Designed for pulse operation (1.5A max).

Body L=18, Bezel dia.=13, Thread=M8#0.75, Short Lead: Cathode

Half Angle	20°typ.	Switching Time	1.0µs
Peak Response	950nm	Temperature Range	-25°Cto +100°C

206222

Mfrs. List No.		Price Each		
Order Code	1+	25+	100+	
RTM5070	121-5798	538.00	426.00	354.00

MCS3 Colour Sensors



4142731
1200317



4142720
1200316

JEN-COLOUR



4142743
1200319



4142755
1200321



4142780

- Rapid Colour Recognition
- 3 x On-chip Integrated PIN Photodiodes
- Leaded and SMD Package Versions
- Dielectric Filters for the three colour ranges: Red, Green and Blue
- TO5 versions with/without IR-Blocking
- SMD version

- Applications:**
- Quality Control
 - Production Monitoring
 - Control of Manufacturing
 - Detection of Colour Marks

The **MCS3** colour sensors are made up of 3 x Si-PIN photo diodes integrated onto a single chip. They are constructed as segments of a ring with the diameter of 2.0 mm. The design uses Si-PIN photo diodes which allow signal frequencies up to MHz-range. In order to achieve low cross talk between the photodiodes, the individual sectors are separated from each other by additional structures. Each of the photodiodes are sensitised with a dielectric spectral filter for a specific colour range from the primary colours red, green and blue. The individual outputs are then accessible for processing.

The range is further enhanced by variants with infrared filtering which give considerable attenuation to wavelengths above 725nm.

The **MCSi** colour sensors feature a hexagonal matrix of 3 x 19 Si-PIN photodiodes on one substrate, each photodiode having an individual filter above it. These devices average the colour signal from the whole sensing area and makes the unit less sensitive to images which are not central onto the array.

A development board is available for the evaluation and testing of the sensors for colour recognition. Specific adapter boards allow the TO-5 and SOP8 packages to be utilised. Four white light LEDs illuminate a test surface under an incident angle of 45° (approx.). At a distance of 20 mm along the surface, diffused reflected light is detected and digitised by the MCS colour sensor.

Communication between a PC computer and the MCS-EB1 development board is via an RS232 interface. Through this interface the sensor data may be read and parameters for the sensors set up. The PC software allows manual gain selection for the current-voltage converter. In addition to the 10-bit ADC output values obtained for the various RGB photocurrents, the normalised colour portions and mixed colours are represented on an animated screen in real-time.

To complement the sensors a dedicated four channel SMD transimpedance amplifier is available in a SOP16 package.

Rev. Voltage (typ)	Dark Current (nA)	Rise / Fall Time (µs)	Crosstalk %	Lead Cap. (pF) V _R =5V	Noise Equ. Pwr. W/√Hz	Package Style	Mfrs. List No.
5V	0.1	<1	0.5%	50	<10 ⁻¹³	SO-8	MCS3AS
5V	0.1	<1	0.5%	50	<10 ⁻¹³	TO-5	MCS3AT
9V	0.1	<1	0.5%	50	<10 ⁻¹³	TO-5	MCS3BT
5V	0.1	<1	0.5%	<100	<10 ⁻¹³	TO-5	MCSiAT
Field of Spectral Sensitivity	λ _B	400 - 510nm	λ _G	490 - 610nm	λ _R	590 - 750nm	

Mfrs. List Nos: MCS3AS = 120-0316 MCS3BT = 120-0319 MCS-EB1 = 120-0322
MCS3AT(RoHS) = 120-0317 MCSiAT(RoHS) = 120-0321

241023

Description	Order Code	1+	3+	5+
Colour Sensor SOP8	120-0316	2,253.00	2,080.00	1,976.00
Colour Sensor TO-5	120-0317	2,622.00	2,439.00	--
Colour Sensor TO-5 with I/R filter	120-0319	3,410.00	3,171.00	--
Colour Sensor Array TO-5	120-0321	3,276.00	3,047.00	--
Four Channel Photodiode Preamp	414-2779	625.00	619.00	605.00

Photodiode Detectors - High output with filter options

SILONEX



- Standard, IR and BG spectral response
- High output for package size
- Active area: 9.8mm² & 2.0mm²

Housed in epoxy coated ceramic packages, these devices feature high photocurrent output for the package size. Available in standard spectral response, I_R filtered (for daylight rejection applications) and BG filtered (for daylight sensing applications). With two active areas available these devices are an excellent balance of performance and economy.