

Sense the power of light

ams OSRAM

Low Power IR Emitters & Sensors

Product Pairs

OS VS PMK EM
June 2024

IR Low Power Emitter and Sensor

One of the broadest and most complete portfolio on the market to address various application fields

	Emitter Std	Sensor Std	CSA IOS AVS Automotive & Industrial Sensors	CSA IOS AVS Vital Sign Mon. (VSM)	OS VS (VSM)
ChipLED	SFH 4045N SFH 4052 SFH 4053 SFH 4056 SFH 4059 SFH 4059SR SFH 4059S SFH 4059R SFH 4043	SFH 3710	SFH 5711 SFH 3716 SFH 3711 SFH 5701 SFH 5701 A01 SFH 2711 A01 SFH 2700 FA A01 SFH 2700 A01 SFH 2716 A01 SFH 2770 A01	SFH 2703 SFH 2704 SFH 2713 SFH 2714 SFH 2780A SFH 2781A	SFH 7014C SFH 7015 SFH 7016 SFH 7017
Chip-on-Board			SFH 7776 SFH 7779 SFH 5721		
FireFly	SFH 4060 SFH 4030				CT DBLP31.12 CT DBLP32.12 CT DELSS1.12 CH DELSS1.22
Metal Can	SFH 4851 SFH 464 SFH 4855	BP 103 BPW 21 BPX 61 BPX 65 BPY 62			
Micro SIDELED	SFH 4254		SFH 3204		

	Emitter Std	Sensor Std
MIDLED	SFH 4640 SFH 4641 SFH 4645 SFH 4646 SFH 4650 SFH 4651 SFH 4655 SFH 4656	SFH 3600 SFH 3605
Mini TOPLED	SFH 4247	
Power TOPLED	SFH 4240 SFH 4248 SFH 4249 SFH 4250 SFH 4250S SFH 4258 SFH 4258S SFH 4259 SFH 4259S	
Radial	SFH 4350 SFH 4356 SFH 4511 SFH 4542 SMR SFH 4543 SMR SFH 4544 SFH 4545 SFH 4546 SFH 4547 SFH 4550 SFH 4551 SMR SFH 4554 SFH 4556 SFH 4555 SFH 4556 SFH 4557 SFH 4558 SMR SFH 4570 SFH 4571	SFH 203 SFH 203 FA SFH 203 P SFH 203 PFA SFH 205 FA SFH 206 K SFH 213 SFH 213 FA SFH 229 SFH 229 FA SFH 235 FA SFH 250 SFH 250V SFH 2500 FA SMR SFH 2505 SMR SFH 2505 FA SMR SFH 2504 SFH 300 SFH 300-3 E9588 SFH 300 FA SFH 309 FA SFH 309 SFH 313 FA SFH 314 FA SFH 3310

	Emitter Std	Sensor Std	CSA IOS AVS Automotive & Industrial Sensors	CSA IOS AVS Vital Sign Mon (VSM)
SIDELED	SFH 4244 SFH 4245 SFH 4256 SFH 4255	SFH 325 FA SFH 325	SFH 325 FAG	
SmartLED	SFH 4050			
Smart DIL		SFH 2400	SFH 2400 FAR SFH 2400 FA SFH 3410 SFH 3410R	
DIL		BPW 34 BPW 34 S BPW 34 SR BPW 34 FS BP 104 FAS BP 104 FASR BP 104 FS SFH 2401	BPW 34 FAS BPW 34 FASR SFH 2430	SFH 2440
Multi TOPLED		SFH 331 SFH 7250		
Reflective Interrupter			SFH 9206	
TOPLED	SFH 4243 SFH 4246R SFH 4253 SFH 4253R SFH 4257 SFH 4257R	SFH 320 FA SFH 320 SFH 3211 FA SFH 3219	SFH 2200 A01 SFH 2201 A01 SFH 2240 A01 SFH 2270R SFH 320G	SFH 2200 SFH 2201 SFH 2240

IR Low Power Emitters & Detector Portfolio

Addressing Various Application Fields

IR Low Power Emitters

(Power) TOPLED® Family

- Well established product
- High variety of package and chip options



CHIPLED® Family

- Ultra compact IR Emitters
- Ideal for cost sensitive designs



Radial and MetalCans

- High robustness
- Still technology of choice for e.g. smoke detectors



SMR Radial

- SMR package in surface mount technology
- Narrow viewing angle



MIDLED

- SMT package in surface mount technology
- Reflector based narrow viewing angle



Detector

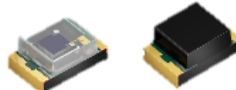
TOPLED® Family

- Silicon NPN Phototransistor
- High linearity



CHIPLED® Family

- Industry-standard footprints available



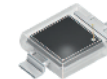
Radials and Metal Cans

- High robustness
- Ideal for industrial applications



DIL SMT & Smart DIL

- Multiple Silicon PIN Photodiode options, optimized for application needs



MIDLED

- SMT package in surface mount technology
- Reflector based narrow viewing angle with low height



Broad portfolio, broad market = Many opportunities!

MIDLED

Emitter and Detector Pairs

	Device	Picture	Part Number	Centroid Wavelength (nm)	Radiant Flux (mW)	Radiant Intensity (mW/sr)	Half angle (°)	Dimensions (mm)
Emitter	Toplooker		SFH 4640	940	55	80	+/-12	3.1 x 2.25 x 1.6
	Sidelooker		SFH 4645	940	55	80	+/-12	3.1 x 1.6 x 2.25
	Toplooker		SFH 4641	940	35	55	+/-10	3.1 x 2.25 x 1.6
	Sidelooker		SFH 4646	940	35	55	+/-10	3.1 x 1.6 x 2.25
	Toplooker		SFH 4650	850	60	90	+/-12	3.1 x 2.25 x 1.6
	Sidelooker		SFH 4655	850	60	90	+/-12	3.1 x 1.6 x 2.25
	Toplooker		SFH 4651	850	40	60	+/-10	3.1 x 2.25 x 1.6
	Sidelooker		SFH 4656	850	40	60	+/-10	3.1 x 1.6 x 2.25

	Device	Picture	Part Number	Wavelength of max. Sensitivity [nm]	Spectral Range of Sensitivity	Photocurrent [μA]	Radiant Sensitive Area [mm²]	Half Angle [°]	Dimensions
PTR	Toplooker		SFH 3600	990	500...1100	112...450	0.04	+/- 9	3.1 x 2.25 x 1.6
	Sidelooker		SFH 3605	990	500...1100	112...450	0.04	+/- 9	3.1 x 1.6 x 2.25

TOPLED

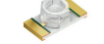
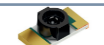
Emitter and Detector Pairs

	Device	Picture	Part Number	Centroid Wavelength (nm)	Radiant Flux (mW)	Radiant Intensity (mW/sr)	Half angle (°)	Dimensions (mm)
Emitter	TOPLED		SFH 4253	850	40	13	± 60	2.8 x 3.2 x 1.9
	TOPLED RG		SFH 4253R	850	40	13	± 60	2.8 x 3.2 x 1.9
	TOPLED		SFH 4243	940	35	11	± 60	2.8 x 3.2 x 1.9
	TOPLED RG Lens		SFH 4246R	940	65	100	± 12	2.8 x 3.2 x 3.5
	TOPLED Black		SFH 4257	850	25	9	± 60	2.8 x 3.2 x 1.9
	TOPLED Black RG		SFH 4257R	850	25	9	± 60	2.8 x 3.2 x 1.9

	Device	Picture	Part Number	Wavelength of max. Sensitivity [nm]	Spectral Range of Sensitivity	Photocurrent [μA]	Radiant Sensitive Area [mm²]	Half Angle [°]	Dimensions
Phototransistor	TOPLED		SFH 320	980	450...1150	16...80	0.038	± 60	2.8 x 3.2 x 1.9
	TOPLED		SFH 320 FA	980	750...1120	16...80	0.038	± 60	2.8 x 3.2 x 1.9
	TOPLED RG		SFH 3211 FA	980	750...1120	16...80	0.038	± 60	2.8 x 3.2 x 1.9
	TOPLED Lens		SFH 3219	980	450...1150	>= 0.63	0.038	± 25	2.8 x 3.2 x 3.5

CHIPLED

Emitter and Detector Pairs

	Device	Picture	Part Number	Centroid Wavelength (nm)	Radiant Flux (mW)	Radiant Intensity (mW/sr)	Half angle (°)	Dimensions (mm)
Emitter	CHIPLED sidelooker lens		SFH 4045N	940	40	90	± 9	1.6 x 3.2 x 1.9
	CHIPLED with lens		SFH 4052	850	40	20	± 40	1.6 x 3.2 x 1.9
	CHIPLED flat		SFH 4053	850	35	7	± 70	1.0 x 0.5 x 0.45
	CHIPLED flat		SFH 4043	940	35	6	± 70	1.0 x 0.5 x 0.45
	CHIPLED with lens		SFH 4056	850	40	35	± 22	1.6 x 3.2 x 1.9
	CHIPLED with lens		SFH 4059	850	40	100	± 10	1.6 x 3.2 x 1.9
	CHIPLED with lens		SFH 4059SR	850	50	95	± 15	1.6 x 3.2 x 1.9
	CHIPLED with lens		SFH 4059S	850	50	95	± 15	1.6 x 3.2 x 1.9
	CHIPLED with lens		SFH 4059R	850	40	100	± 10	1.6 x 3.2 x 1.9

	Device	Picture	Part Number	Wavelength of max. Sensitivity [nm]	Spectral Range of Sensitivity	Photocurrent [μA]	Radiant Sensitive Area [mm²]	Half Angle [°]	Dimensions
PTR	CHIPLED ALS		SFH 3710	570	350..970	2.5...12.5	0.29	±60	1.25 x 2.0 x 0.8

Metal Can

Emitter and Detector Pairs

	Device	Picture	Part Number	Centroid Wavelength (nm)	Radiant Flux (mW)	Radiant Intensity (mW/sr)	Half angle (°)	Dimensions (mm)
Emitter	Metal Can		SFH 464	660	11	1.5	+/-23	Ø 5.35 x 3.3
	Metal Can		SFH 4851	860	25	500	+/-3	Ø 5.45 x 5.8
	Metal Can		SFH 4860	860	35	110	+/-8	Ø 5.4 x 7.3

	Device	Picture	Part Number	Wavelength of max. Sensitivity [nm]	Spectral Range of Sensitivity	Photocurrent [µA]	Radiant Sensitive Area [mm²]	Half Angle [°]	Dimensions
Photodiode	Metal Can ALS		BPW 21	350 - 820	550	18	7.45	+/-55	Ø 9.25 x 3.2
	Metal Can		BPX 61	420...1120	920	70	7.02	+/-55	Ø 9.5 x 3.2
	Metal Can		BPX 65	350-1100	850	10	1.0	+/-40	Ø 9.5 x 5.25
Photo-transistor	Metal Can		BPY 62	400-1100	830	1570	0.11	+/-8	Ø 5.45 x 5.8
	Metal Can		BP 103	450-1100	850	200	0.11	+/-55	Ø 5.45 x 3.3

Radial 3mm

Emitter and Detector Pairs

	Device	Picture	Part Number	Centroid Wavelength (nm)	Radiant Flux (mW)	Radiant Intensity (mW/sr)	Half angle (°)	Dimensions (mm)
Emitter	3mm Radial		SFH 4350	850	70	200	+/-13	4.8 x 3.8
	3mm Radial		SFH 4356	850	80	90	+/-20	4.8 x 3.8
	5mm Radial		SFH 4544	940	75	550	+/-10	8.2 x 5.5

	Device	Picture	Part Number	Wavelength of max. Sensitivity [nm]	Spectral Range of Sensitivity	Photocurrent [μA]	Radiant Sensitive Area [mm²]	Half Angle [°]	Dimensions
PTR	3mm Radial ALS		SFH 3310	350 -970	570	2.5...8	0.290	+/-75	2.8 x 3.8
	3mm Radial		SFH 229 IFA	380/730 - 1100	860/900	28/20	0.310	+/-17	4.8 x 3.8
	3mm Radial		SFH 309 IFA	380/730 - 1100	850/900	400...5000	0.038	+/-12/25	4.8 x 3.8

Radial 5mm

Emitter and Detector Pairs

	Device	Picture	Part Number	Centroid Wavelength (nm)	Radiant Flux (mW)	Radiant Intensity (mW/sr)	Half angle (°)	Dimensions (mm)
Emitter	5mm Radial		SFH 4544	940	75	550	+/-10	8.2 x 5.5
	5mm Radial		SFH 4547	940	55	50	+/-30	6.6 x 5.5
	5mm Radial		SFH 4546	940	55	130	+/-20	7.7 x 5.5
	5mm Radial		SFH 4545	940	55	550	+/-5	7.9 x 5.5
	5mm Radial		SFH 4550	850	70	1100	+/-3	8.6 x 5.7
	5mm Radial		SFH 4554	850	75	550	+/-10	8.2 x 5.5
	5mm Radial		SFH 4555	850	60	550	+/-5	7.9 x 5.5
	5mm Radial		SFH 4556	850	60	145	+/-20	7.7 x 5.5
	5mm Radial		SFH 4557	850	60	55	+/-30	6.6 x 5.5

	Device	Picture	Part Number	Wavelength of max. Sensitivity [nm]	Spectral Range of Sensitivity	Photocurrent [µA]	Radiant Sensitive Area [mm²]	Half Angle [°]	Dimensions
Phototransistor	5mm Radial		SFH 203 IFA	400/750 - 1100	850/900	135/50	1	+/-20	8.5 x 5.85
	5mm Radial		SFH 213 IFA	400/750-1100	850/900	135/90	1	+/-10	8.6 x 5.7
	5mm Radial		SFH 203P IFA	400/750-1100	850/900	9.5/50	1	+/-75	2.8 x 3.8
	5mm Radial		SFH 313 FA	740-1080	870	2500...20000	0.550	+/-10	8.6 x 5.7
	5mm Radial		SFH 314 FA	740-1080	870	630...5000	0.550	+/-40	6.5 x 5.7
	5mm Radial		SFH 300 IFA	450/730-1100/1120	880	>=630	0.110	+/-25	8.6 x 5.7

Radial SMR

Emitter and Detector Pairs

	Device	Picture	Part Number	Centroid Wavelength (nm)	Radiant Flux (mW)	Radiant Intensity (mW/sr)	Half angle (°)	Dimensions (mm)
Emitter	SMR		SFH 4542	940	80	230	+/-10	7.4 x 5.7 x 4.6
	SMR		SFH 4543	940	80	230	+/-10	7.4 x 5.7 x 4.6
	SMR		SFH 4551	850	80	270	+/-10	7.4 x 5.7 x 4.6
	SMR		SFH 4558	850	80	350	+/-10	7.4 x 5.7 x 4.6

	Device	Picture	Part Number	Wavelength of max. Sensitivity [nm]	Spectral Range of Sensitivity	Photocurrent [μA]	Radiant Sensitive Area [mm²]	Half Angle [°]	Dimensions
	SMR		SFH 2500 FA	750 - 1100	900	70	1	+/-15	7.4 x 5.7 x 4.6
	SMR		SFH 2505 /FA	400/750 - 1100	900	70	1	+/-15	7.4 x 5.7 x 4.6

SIDELED

Emitter and Detector Pairs

	Device	Picture	Part Number	Centroid Wavelength (nm)	Radiant Flux (mW)	Radiant Intensity (mW/sr)	Half angle (°)	Dimensions (mm)
Emitter	SIDELED		SFH 4244	940	35	11	+ - 60	3.6 x 4.0 x 4.0
	SIDELED		SFH 4245	940	55	18	+ - 60	3.6 x 4.0 x 4.0
	SIDELED		SFH 4256	850	40	13	+ - 60	3.6 x 4.0 x 4.0
	SIDELED		SFH 4255	850	60	20	+ - 60	3.6 x 4.0 x 4.0

	Device	Picture	Part Number	Wavelength of max. Sensitivity [nm]	Spectral Range of Sensitivity	Photocurrent [μA]	Radiant Sensitive Area [mm²]	Half Angle [°]	Dimensions
Photo-transistor	SIDELED		SFH 325	980	450...1120	18...71	0.038	+ - 60	3.6 x 4.0 x 4.0
	SIDELED		SFH 325 FA	980	750...1120	16...80	0.038	+ - 60	3.6 x 4.0 x 4.0

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