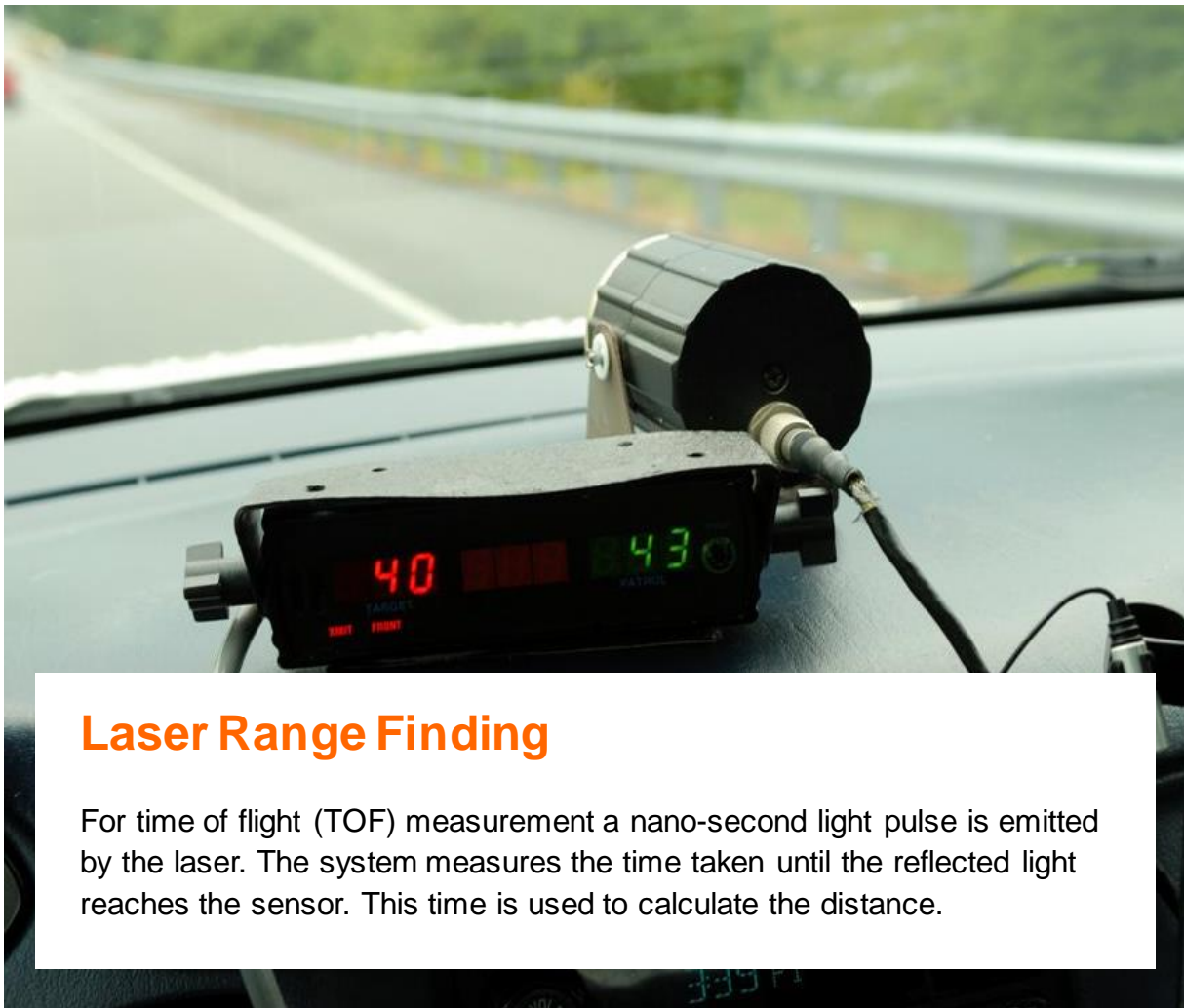


Laser Range Finder

OS IR MK2 | April 2016 | Regensburg
Light is **OSRAM**

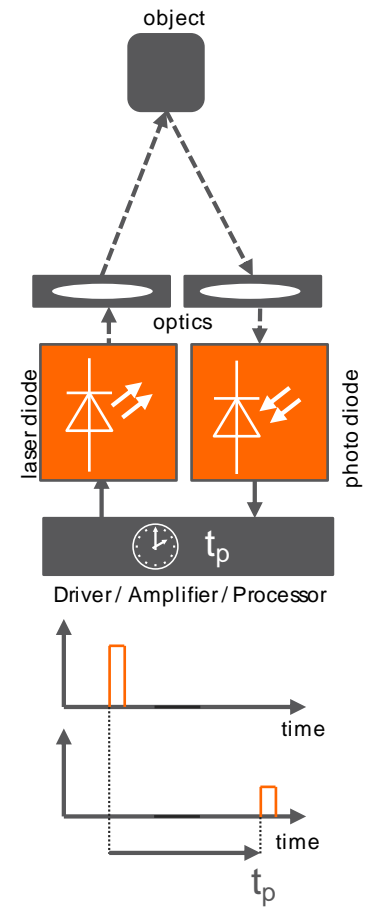
OSRAM
Opto Semiconductors

IR Pulsed Laser based range finder



Laser Range Finding

For time of flight (TOF) measurement a nano-second light pulse is emitted by the laser. The system measures the time taken until the reflected light reaches the sensor. This time is used to calculate the distance.



Recommended products – Pulsed Laser Diodes & PIN Photo Diodes

Laser Diode



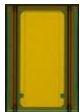
Products

High-power multi mode laser diode as bare die, in 5 mm radial package. Also available with integrated driver circuit.



Type

SPL PL 90



PIN Photo Diode



Product:

Fast PIN photo diodes in 5 mm Radial, SMR, Smart DIL and CHIPLED package



Type:

SFH 2701



Building Blocks



Recommended products – Benefits and more

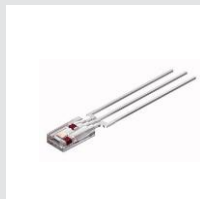
Customer Benefit

Emitter (Edge emitting laser diodes)

- High performance, in house laser chip technology
- Higher volume chip and package production guarantee a constant performance and cost efficient solutions
- Different level of integration
 - bare chip
 - chip in package
 - chip and MOSFET driver integrated in one package
- Automotive qualified version

Detector (PIN photo diodes)

- Very short rise/fall time down to 2ns
- No high voltage supply needed
- Half angle options from ± 15 to $\pm 60^\circ$
- Trough hole and SMT packages
- IR filters to suppress visible light



Laser with
integrated driver



Laser



Fast photo diode

Decision criteria





- Chip in package or bare chip for highest design flexibility.
- Laser with integrated MOSFET driver as a ready to use solution with less EMC problems.

Tools

Application note:

[Range Finding Using Pulse Lasers](#),
[Standard Pulsed Laser Diode](#),
[Operating the pulsed laser diode SPL LL90_3](#)

Laser Range Finder Products at a glance

Device	Part number	Package	Wavelength / Spectral Range (nm)	Angel (°)	Optical Output Power (W)	Aperture size / Radiant sensitive Area (mm ²)	Rise / Fall Time (ns)	
5 mm Photo Diode	<u>SFH 203FA</u>	5 mm radial	750 to 1100	±20	-	1 x 1	5	
SMR Photo Diode	<u>SFH 2500 FA</u>	SMR	750 to 1100	±15	-	1 x 1	5	
Smart DIL Photo Diode	<u>SFH 2400</u>	Smart DIL	750 to 1100	±60	-	1 x 1	5	
CHIPLED Photo Diode	<u>SFH 2701</u>	CHIPLED	400 to 1050	±60	-	0,6 x 0,6	2	

Recommended products, for further options please check [web site](#)