

## Dual-wavelength Reflective sensor

### KPR1416DS6

This is a SWIR type reflective sensor that incorporates an InGaAsP LED and an InGaAs photodiode in a small package.

#### Characteristics

- Reflective sensor using two wavelengths of SWIR
- Small SMD package

#### Applications

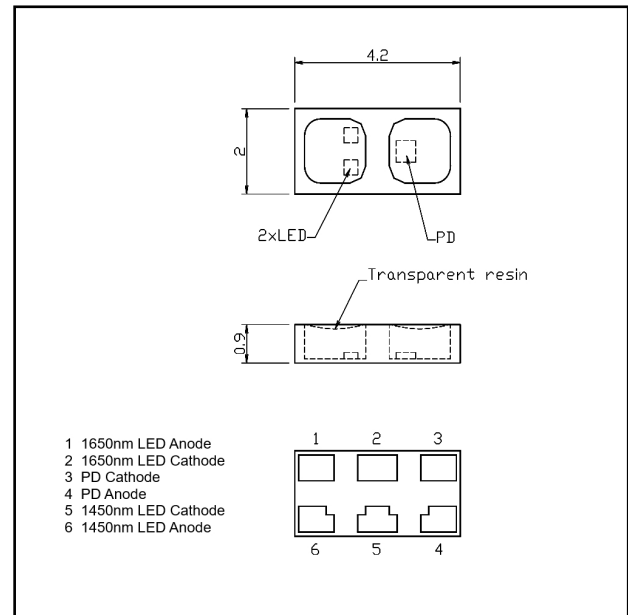
- Moisture detection
- Component analysis
- Gas detection
- Optical sensor
- Proximity sensor

#### Chip Material

- InGaAsP/InGaAs

#### Package

- SMD



Preliminary

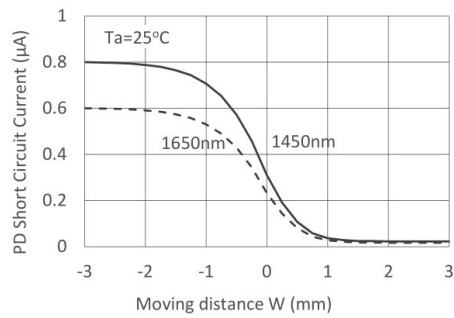
### Absolute Maximum Ratings

Parameter	Symbol	Wavelength	Value	Unit	Conditions
LED Reverse voltage	$V_R$	1450nm	5	V	-
		1650nm	5		
PD Reverse voltage	$V_R$	-	20	V	-
Forward current	$I_F$	1450nm	50	mA	-
		1650nm	50		
Operating temperature	$T_{opr}$	-	-20 to +80		Avoid dew condensation
Storage temperature	$T_{stg}$	-	-25 to +100		Avoid dew condensation
Soldering temperature	$T_{sol}$	-	235		peak temperature

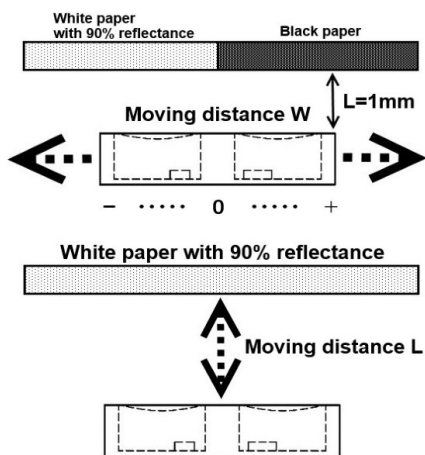
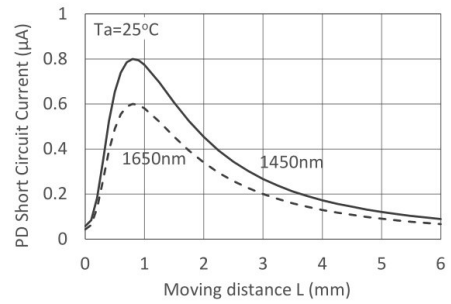
### Electrical and Optical characteristics $T_a=25$ unless otherwise noted

Parameter	Symbol	Wavelength	Min.	Typ.	Max.	Unit	Conditions
Reverse Current	$I_R$	1450nm	-	-	10	$\mu A$	$V_R=1V$
		1650nm	-	-	10		
Forward voltage	$V_F$	1450nm	-	0.75	1.25	V	$I_F=20mA$
		1650nm	-	0.65	1.25		
Peak wavelength	$\lambda_p$	1450nm	-	1450	-	nm	$I_F=20mA$
		1650nm	-	1650	-		
Spectral width		1450nm	-	100	-	nm	$I_F=20mA$
		1650nm	-	100	-		
Sensitive size	D	-	-	300	-	$\mu m$	-
Short circuit current	$I_{SH}$	1450nm	-	0.8	-	$\mu A$	$I_F=20mA, L=1mm$
		1650nm	-	0.6	-		
Dark current	$I_D$	-	-	-	10	nA	$V_R=5V$

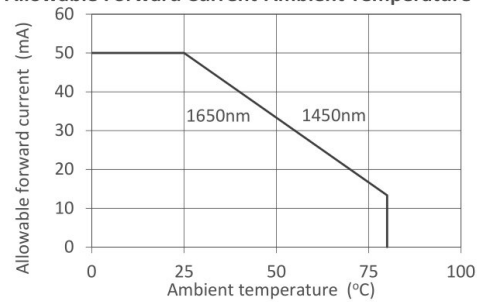
Position detection characteristics



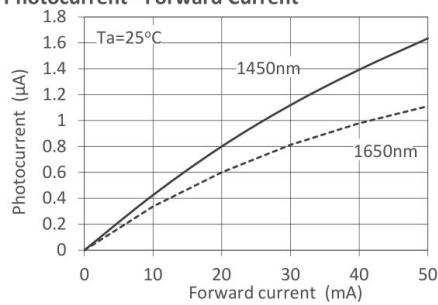
Position detection characteristics



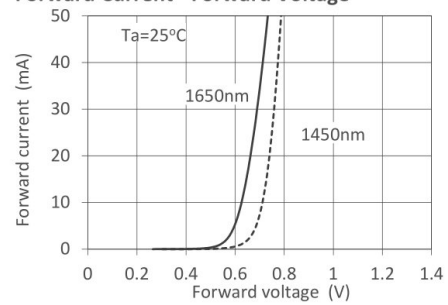
Allowable Forward Current-Ambient Temperature



Photocurrent - Forward Current



Forward Current - Forward Voltage



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