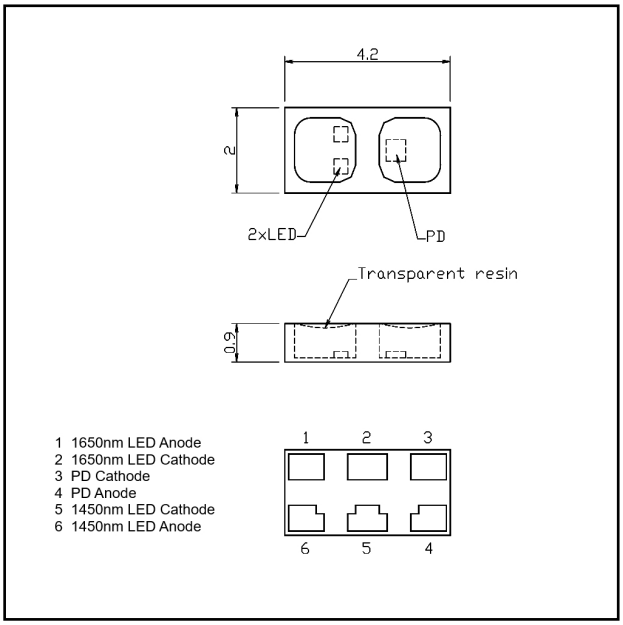
Preliminary

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

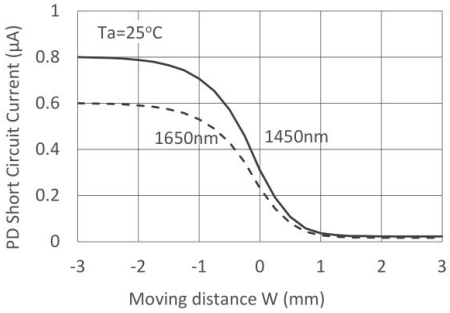
Absolute Maximum Ratings

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

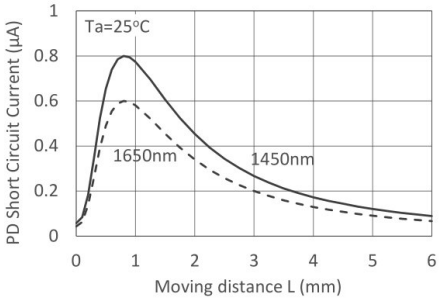
Electrical and Optical characteristics Ta=25℃ unless otherwise noted

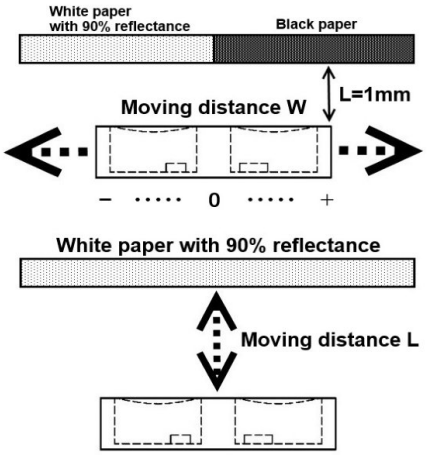
Parameter	Symbol	Wavelength	Min.	Typ.	Max.	Unit	Conditions
Reverse Current	I_R	1450nm	-	-	10	μA	V_R=1V
		1650nm	-	-	10		
Forward voltage	V_F	1450nm	-	0.75	1.25	V	IF=20mA
		1650nm	-	0.65	1.25		
Peak wavelength	λ_p	1450nm	-	1450	-	nm	IF=20mA
		1650nm	-	1650	-		
Spectral width	$\Delta\lambda$	1450nm	-	100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

Position detection characteristics

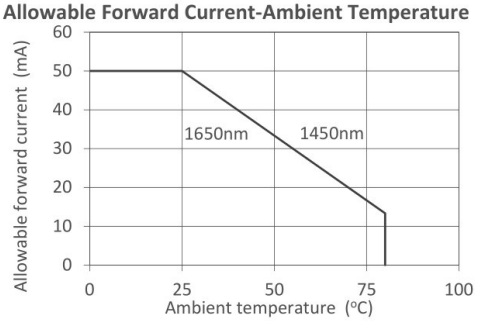


Position detection characteristics

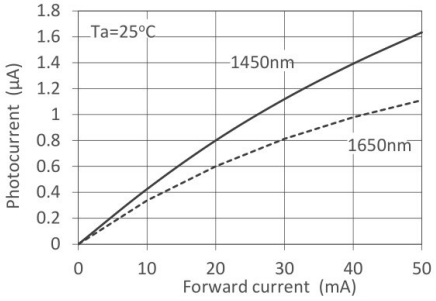




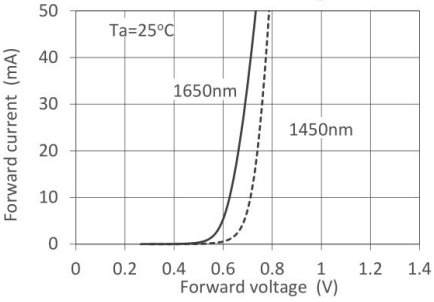
Allowable Forward Current-Ambient Temperature



Photocurrent - Forward Current



Forward Current - Forward Voltage



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