

Dual-wavelength Reflective sensor

KPR814DS6

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

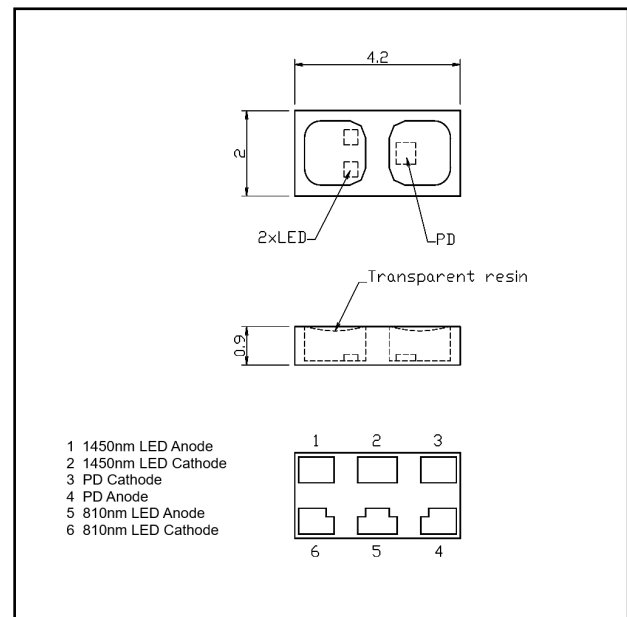
- Moisture detection
- Component analysis
- Gas detection
- Optical sensor
- Proximity sensor

Chip Material

- InGaAsP/InGaAs

Package

- SMD



Preliminary

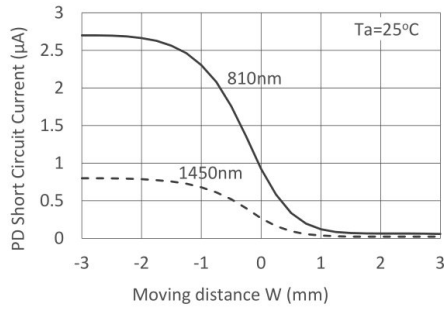
Absolute Maximum Ratings

Parameter	Symbol	Wavelength	Value	Unit	Conditions
LED Reverse voltage	V_R	810nm	5	V	-
		1450nm	5		
PD Reverse voltage	V_R	-	5	V	-
Forward current	I_F	810nm	50	mA	-
		1450nm	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

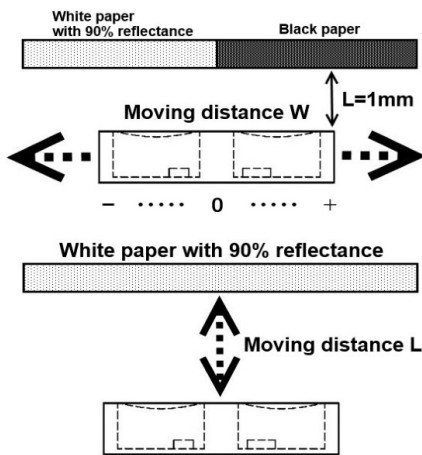
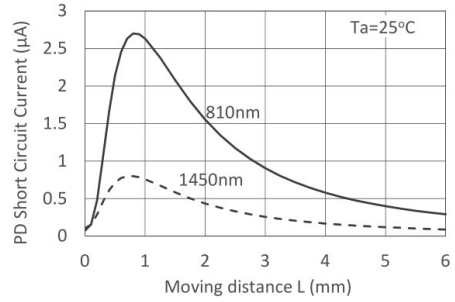
Electrical and Optical characteristics $T_a=25$ unless otherwise noted

Parameter	Symbol	Wavelength	Min.	Typ.	Max.	Unit	Conditions
Reverse Current	I_R	810nm	-	-	10	μA	$V_R=1V$
		1450nm	-	-	10		
Forward voltage	V_F	810nm	-	1.55	1.90	V	$I_F=20mA$
		1450nm	-	0.75	1.25		
Peak wavelength	λ_p	810nm	-	810	-	nm	$I_F=20mA$
		1450nm	-	1450	-		
Spectral width		810nm	-	25	-	nm	$I_F=20mA$
		1450nm	-	100	-		
Sensitive size	D	-	-	300	-	μm	-
Short circuit current	I_{SH}	810nm	-	2.7	-	μA	$I_F=20mA, L=1mm$
		1450nm	-	0.8	-		
Dark current	I_D	-	-	-	10	nA	$V_R=5V$

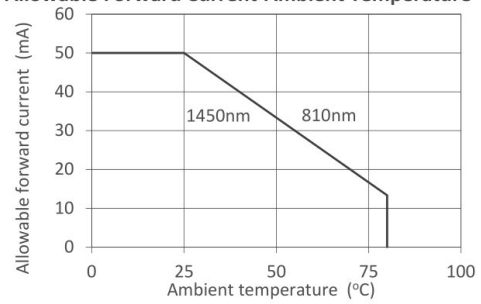
Position detection characteristics



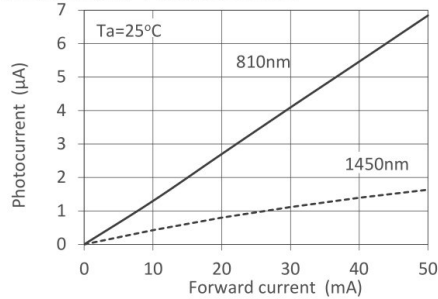
Position detection characteristics



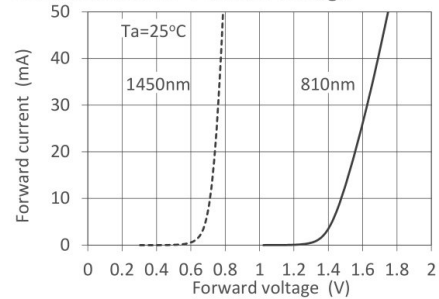
Allowable Forward Current-Ambient Temperature



Photocurrent - Forward Current



Forward Current - Forward Voltage



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