

# SD019-141-411-X

## Surface Mount Silicon Photodiode with Integrated Bandpass Filter

The SD019-141-411-X is a high quality 0.18mm<sup>2</sup> active area silicon PIN photodiode assembled in a 0805 surface mount package with an integrated bandpass filter. It is available in standard wavelength ranges with responsivity peaks at 450nm, 550nm and 600nm.

### Applications

Industrial Sensing  
Light Management  
Handheld Devices  
Color detector  
Optical Heart Rate Monitor

### Features

Small Footprint  
Low Capacitance  
High Speed

Part Number	Bandpass	Range [nm]
SD019-141-411 - R	Red	550-680
SD019-141-411 - G	Green	450-600
SD019-141-411 - B	Blue	400-550

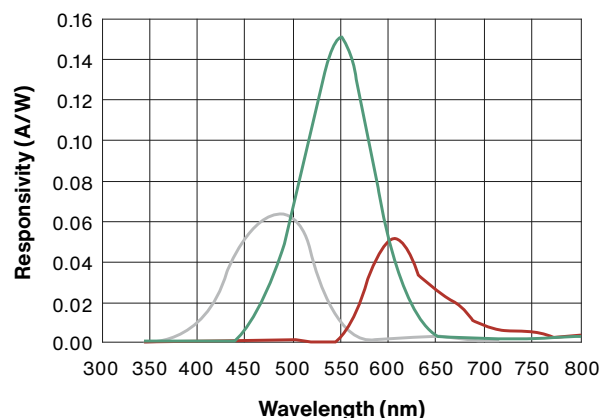
## Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Reverse Voltage	$V_R$	-	50	V
Operating Temperature	$T_{OP}$	-40	+105	°C
Storage Temperature	$T_{STG}$	-50	+125	°C
Package	0805			

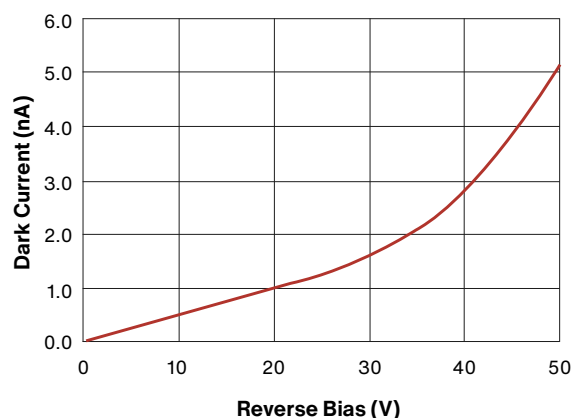
## Typical Electro-Optical Specifications at $T_A = 23\text{ °C}$

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Active Area	-	AA	0.18	-	-	mm <sup>2</sup>
Forward Voltage	$I_f = 10\text{ mA}$	$V_F$	0.5	0.8	1.3	V
Responsivity (-B)	$V_R = 0\text{ V}; \lambda = 450\text{ nm}$	$R_B$	-	0.06	-	A/W
Responsivity (-G)	$V_R = 0\text{ V}; \lambda = 550\text{ nm}$	$R_G$	-	0.12	-	A/W
Responsivity (-R)	$V_R = 0\text{ V}; \lambda = 625\text{ nm}$	$R_R$	-	0.05	-	A/W
Breakdown Voltage	$I_R = 100\text{ }\mu\text{A}$	$V_{BD}$	5	-	-	V
Shunt Resistance	$V_R = 10\text{ mV}$	$R_{SH}$	-	6.0	-	GΩ
Dark Current	$V_R = 10\text{ V}$	$I_D$	-	1.0	-	nA
Junction Capacitance	$V_R = 0\text{ V}; f = 1000\text{ kHz}$	$C_J$	-	28	-	pF
	$V_R = 5\text{ V}; f = 1000\text{ kHz}$	$C_J$	-	10	-	pF

## Spectral Response

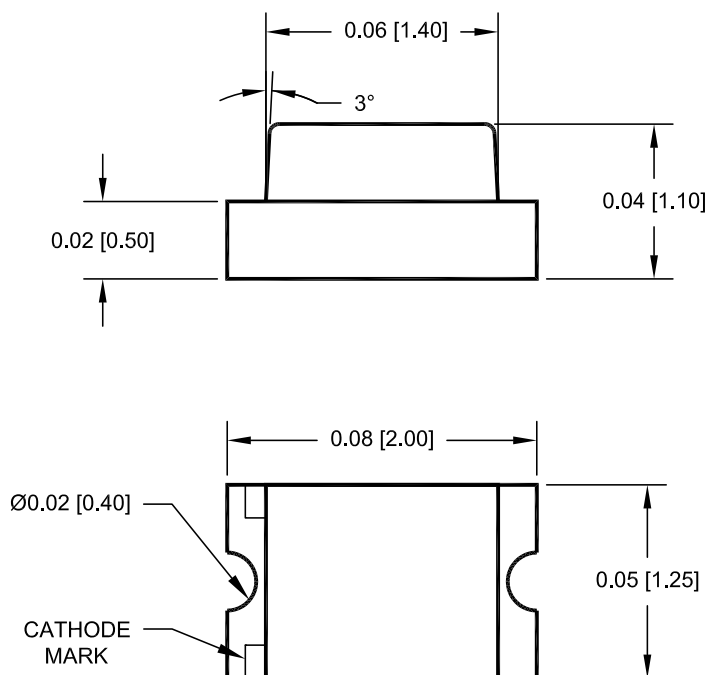


## Dark Current vs Reverse Bias

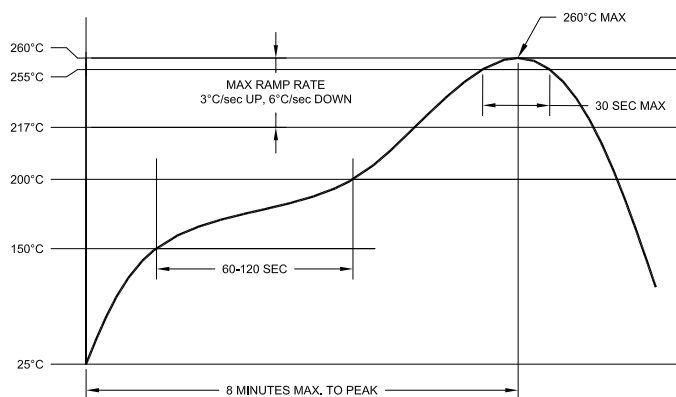


## Mechanical Specifications

Units are in mm



## Reflow Profile



## Soldering

	Recommendation	
Wave	Not Advised	-
IR Oven Reflow	Allowed	See Reflow Profile
Forced Convection Reflow	Recommended	See Reflow Profile
Convection Reflow	Recommended	See Reflow Profile
Vapor Phase Reflow	Recommended	See Reflow Profile
Manual	Allowed	260°C for 3 seconds max
Moisture Sensitivity Level	3	J-STD-033