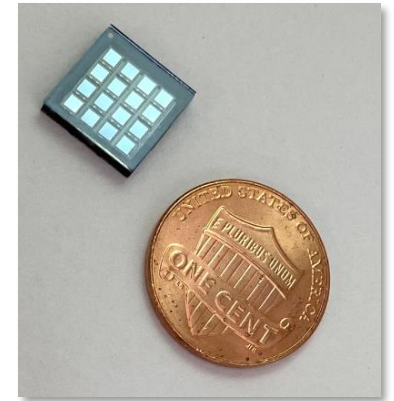


## X1

### 4 × 4 Silicon PIN Photodiode Array



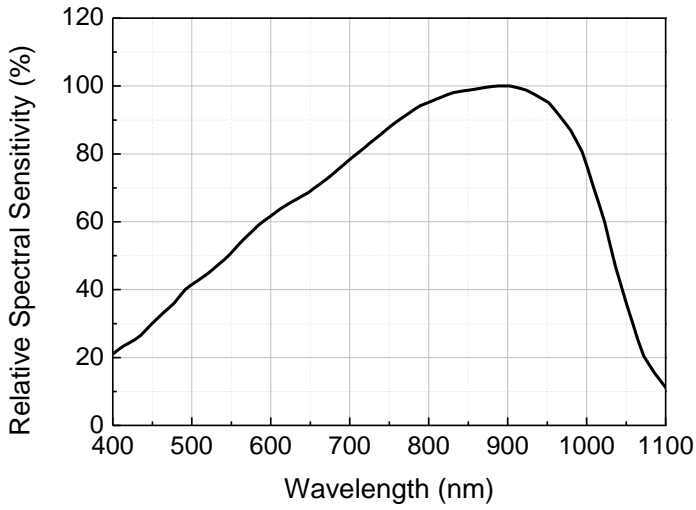
Features	Applications
<ul style="list-style-type: none"> <li>◆ 16 chips in 2D array</li> <li>◆ SMD package</li> <li>◆ AR Coating on cover glass</li> <li>◆ High sensitivity</li> <li>◆ High-speed response</li> </ul>	<ul style="list-style-type: none"> <li>◆ Position sensor</li> <li>◆ Biomedical sensor</li> <li>◆ Uniformity detector</li> <li>◆ Motor encoder</li> <li>◆ Custom design of cover glass coating</li> </ul>

RedEye X1 is a 4 by 4 array of Si PIN photodiode with large chip size. The spectral range of sensitivity is 400 to 1100 nm. The product has a cover glass with AR coating on the package, and its coating can be customized according to customer applications such as bandpass, longpass, or shortpass coating. The SMD package is suitable for PCB assembly. RedEye X1 provides a compact, cost-effective, quick, and convenient solution for our customers.

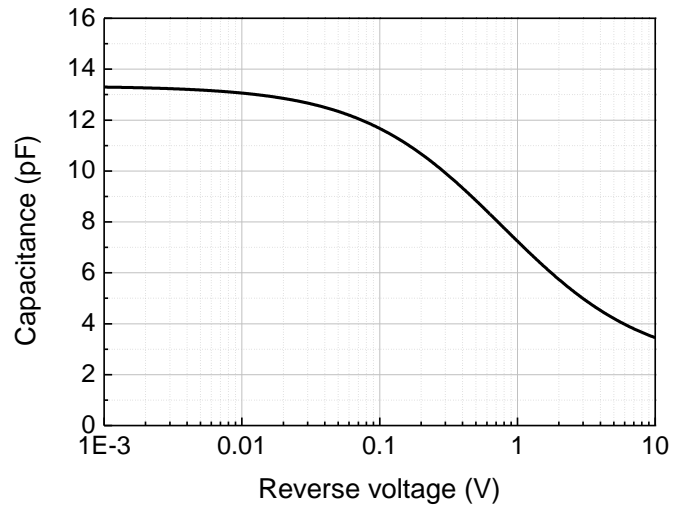
#### Specifications ( $T_A = 25\text{ }^\circ\text{C}$ )

Parameter	Condition	Symbol	Values	Unit
Spectral range of sensitivity		$\lambda_{10\%}$	400 - 1100	nm
Wavelength of max sensitivity		$\lambda_{S\text{ max}}$	900	nm
Forward voltage	$I_F = 10, E = 0$	$V_F$	0.95	V
Reverse voltage		$V_R$	5	V
Photocurrent	$E = 0.1\text{ mW/cm}^2, \lambda = 535\text{ nm}, V_R = 5\text{ V}$	$I_P$	0.51	$\mu\text{A}$
Dark current	$V_R = 5\text{ V}$	$I_R$	25	nA
Capacitance	$V_R = 0\text{ V}, E = 0, f = 1\text{ MHz}$	$C$	13.4	pF
Spectral sensitivity of the chip	$\lambda = 535\text{ nm}$	$S_\lambda$	0.34	A/W
Rise time	$V_R = 5\text{ V}, I_P = 600\text{ }\mu\text{A}, R_L = 50\text{ }\Omega$	$T_r$	47	ns
Fall time	$V_R = 5\text{ V}, I_P = 600\text{ }\mu\text{A}, R_L = 50\text{ }\Omega$	$T_f$	67	ns
Half angle		$\Phi$	60	deg
Active area of each element		$A$	1.51	$\text{mm}^2$
Dimensions of each element of active area		$L \times W$	$1.23 \times 1.23$	mm
Number of elements			16	
Element pitch			2.2	mm
Dimensions of 4 × 4 active area		$L \times W$	$8 \times 8$	mm
Package			SMD	

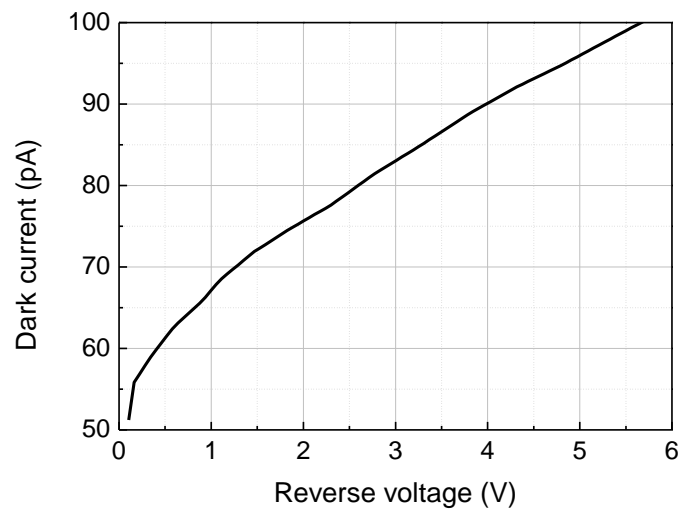
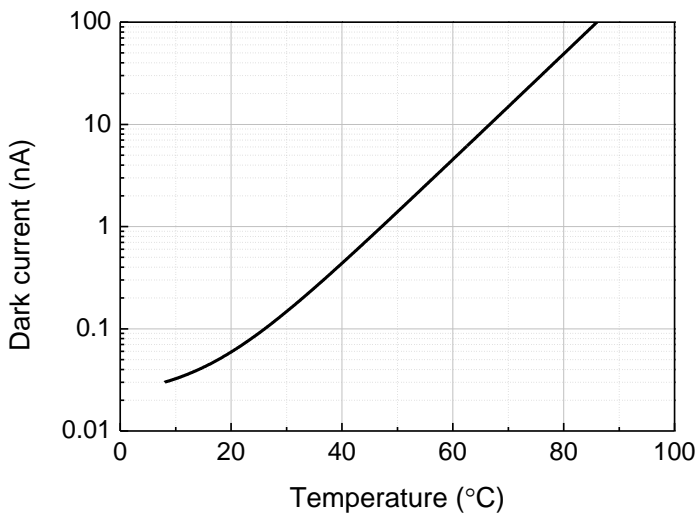
**Relative Spectral Sensitivity**



**Capacitance**



**Dark Current**



Dimensional drawing (unit: mm)

