ASDL-5270

High-Performance Photodiode in T-1¾ Package

Data Sheet

Description

ASDL-5270 is a Silicon PIN Photodiode encapsulated in dark T-1¾ package. The added feature of a dark tint acts as an optical filter to reduce effects of ambient light from interfering with the Infrared signal. It is ideal for applications from 700nm to 1100nm that require high sensitivity with low dark current and fast response time.

Features

- T-1¾ package
- Fast Response Time
- Low Dark Current
- High Sensitivity
- Low junction capacitance
- Wide Viewing Angle
- Lead Free & ROHS Compliant
- Available in Tape & Reel

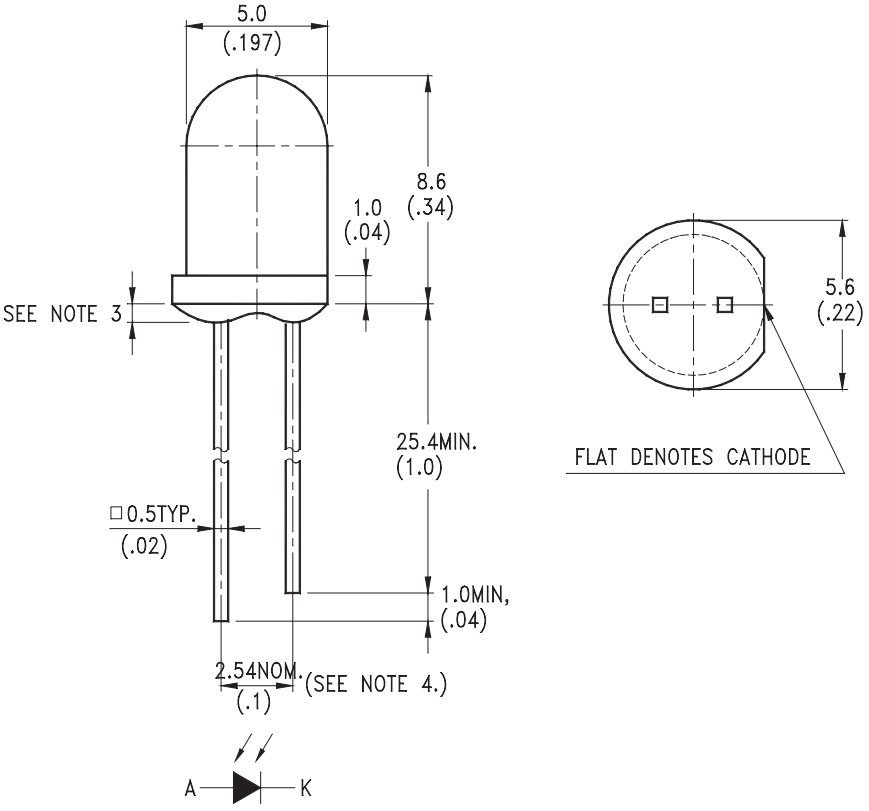
Applications

- Photo-Interrupters
- High Speed IR data communication
- Industrial Electronics & Equipment
- Consumer Electronics (Optical Mouse, Remote Control, Printer etc)

Ordering Information

Part Number	Lead Form	Color	Packaging	Shipping Option
ASDL-5270-D22	Straight	Dark	Tape & Reel	4000
ASDL-5270-D31			Bulk	8000pcs / Carton

Package Dimensions



Notes:
1. All dimensions are in millimeters (inches)
2. Tolerance is + 0.25mm (.010") unless otherwise noted
3. Protruded resin under flange is 1.5mm (.059") max
4. Lead spacing is measured where leads emerge from package
5. Specifications are subject to change without notice.

Absolute Maximum Ratings at T_A=25°C

Parameter	Symbol	Min.	Max	Unit
Power Dissipation	P_{DISS}		150	mW
Reverse Voltage (Ir=100uA)	V_R		30	V
Operating Temperature	T_O	-40	85	℃
Storage Temperature	T_S	-55	100	℃
Junction temperature	T_J		110	℃
Lead Soldering Temperature [.6mm (0.063") From Body]		260°C for 5 seconds		

Electrical Characteristics at 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage	V_F		1	1.3	V	I_F = 50mA
Breakdown Voltage	V_{BR}	30			V	I_R= 100uA Ee = 0mW/cm^2
Reverse Dark Current	I_D			30	nA	V_R=10V Ee=0mW/cm^2
Diode Capacitance	C_O	-	25		pF	Vr = 3V F = 1MHZ Ee = 0mW/cm^2
Open Circuit Voltage	V_{OC}		350		mV	λ = 940nm Ee=0.5mW/cm^2
Thermal Resistance, Junction to Pin	$R\theta_{JP}$	-	375		°C/W	

Optical Characteristics at 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Photocurrent	I_{PH}	8	13		uA	Ee = 0.1mW/cm^2 λ = 940nm Vr = 5V
Radiant Sensitive Area	A		1.55		mm^2	
Absolute Spectral Sensitivity	S		0.6		A/W	λ = 940nm Vr = 5V
Viewing Angle	$2\theta_{1/2}$		60		Deg	
Wavelength of Peak sensitivity	λ_{PK}		900		nm	
Spectral BandWidth	$\Delta\lambda$	700	900	1100	nm	
Rise Time	t_r		50		ns	VR = 10V λ = 850nm RL = 1K Ω
Fall Time	t_f		50		ns	VR = 10V λ = 850nm RL = 1K Ω

Typical Electrical/Optical Characteristics Curves (T_A=25˚C unless otherwise indicated)

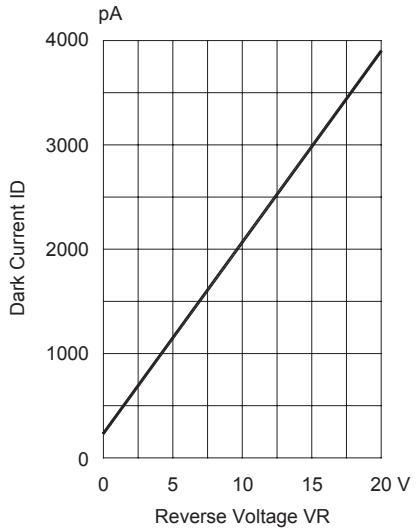


Figure 1. DARK CURRENT VS. REVERSE VOLTAGE
TA=25°C, Ee=0 mW/cm ^{2}

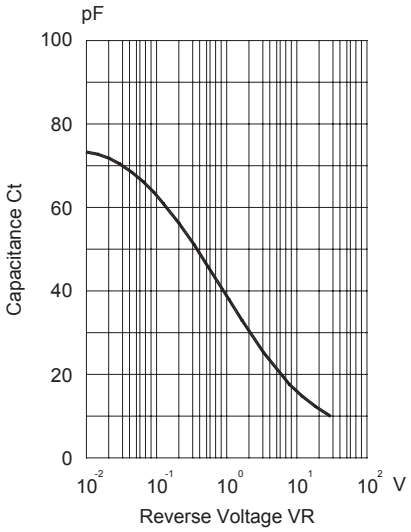


Figure 2. CAPACITANCE VS. REVERSE VOLTAGE
F=1MHZ; Ee=0mW/cm ^{2}

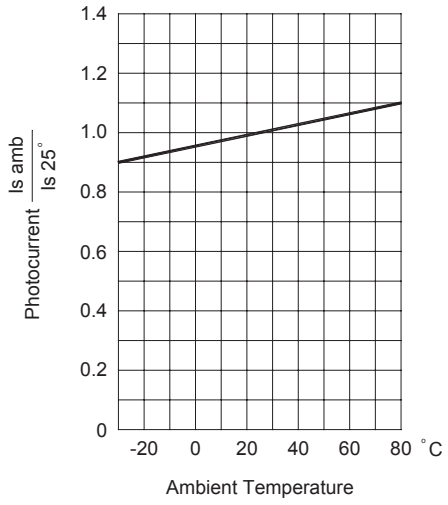


Figure 3. PHOTOCURRENT VS. AMBIENT TEMPERATURE

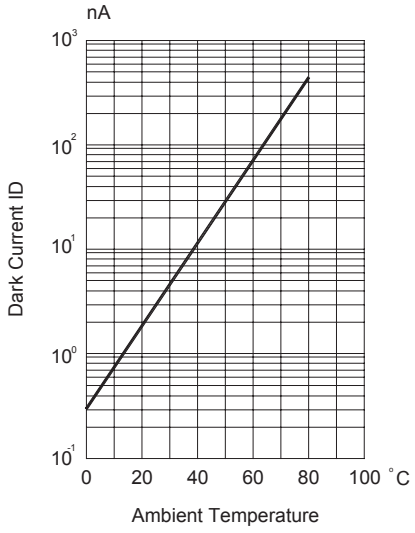


Figure 4. DARK CURRENT AMBIENT TEMPERATURE
VR=10, Ee=0mW/cm ^{2}

Typical Electrical/Optical Characteristics Curves (T_A=25°C unless otherwise indicated) Cont.

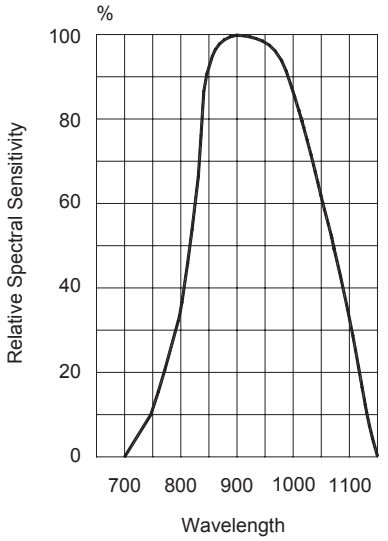


Figure 5. RELATIVE SPECTRAL SENSITIVITY VS WAVELENGTH

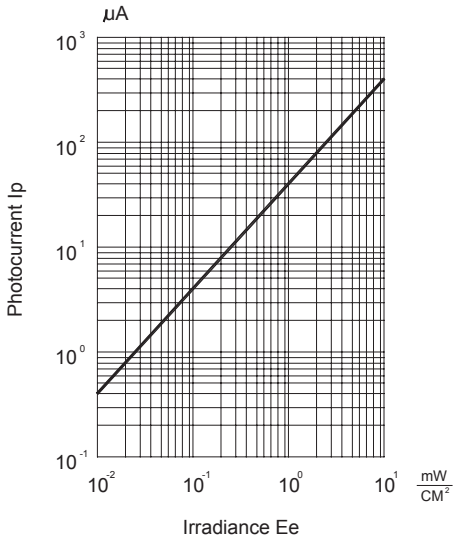


Figure 6. PHOTOCURRENT VS IRRADIANCE λ = 940 nm

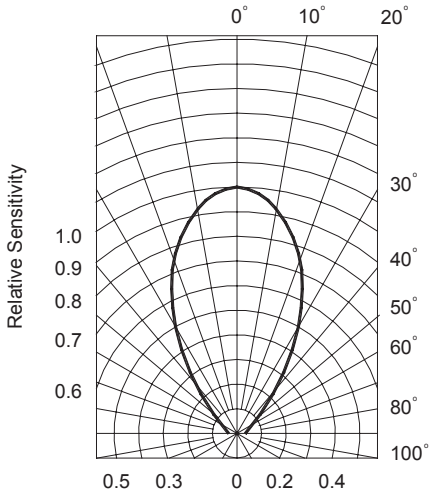


Figure 7. SENSITIVITY DIAGRAM

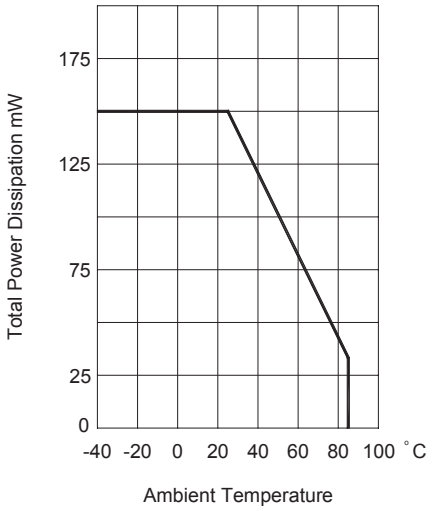


Figure 8. TOTAL POWER DISSIPATION VS AMBIENT TEMPERATURE

For product information and a complete list of distributors, please go to our web site: **www.avagotech.com**

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