



Applications

- Forward-Path and Return-Path Broadband Video Transport
- FTTx Receivers and EDFA and Network Monitors

Features

- Low Cost Package
- Low Capacitance, ≤ 0.4 pF
- Low Dark Current ≤ 50 nA at +85°C
- 4 GHz Flat Response + 1 dB
- Extended Bandwidth Option High Responsivity
 - ≥ 0.90 A/W at 1310 nm, typ.
 - ≥ 0.98 A/W at 1550 nm, typ.
- RoHS Compliant

The 2653 provides the proven high performance of Ortel's photodiode technology in a very practical, cost-effective package. The 2653A features high linearity and low capacitance over a 4 GHz bandwidth. The extended bandwidth 2653E offers high linearity and low capacitance up to 6 GHz. These broadband photodiodes are housed in a small, environmentally rugged coaxial package.

The 2653 broadband photodetector is designed to provide the performance and flexibility needed to meet the expanding applications of two-way communications networks. This photodiode is used today distributed antenna and high bandwidth wireless receivers.

The 2653A and 2653E photodiodes are compliant with all criteria of the Restriction of the Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS) guidelines 2002/95/EC

Performance Highlights

Parameter	Min	Typ	Max	Units
Operating Case Temperature	-40	25	+85	°C
Wavelength	1100	-	1600	nm
Responsivity, 1310 nm	-	0.90	-	A/W
1550 nm	-	0.98	-	
Dark Current, 25°C	-	-	5	nA
85°C	-	-	50	
Capacitance	-	0.35	0.4	pF
Bandwidth, 2653A	-	-	4000	MHz
2653E	-	-	6000	
Gain Flatness, < 1 GHz	-	-	1.0	dB _{p-p}
Gain Flatness, 1 GHz - 4 GHz	-	-	2	dB
Gain Flatness, 1 GHz - 6 GHz	-	-	2	dB
Bias Voltage	10	12	15	V

Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Min	Max	Unit
Operating Temperature Range	T _{op}	-40	85	°C
Storage Temperature Range	T _{stg}	-40	85	°C
Input Power Saturation	P _{IN}	-	10	mW
Reverse Voltage	V _R	-	30	V
Forward Current	I _F	-	10	mA

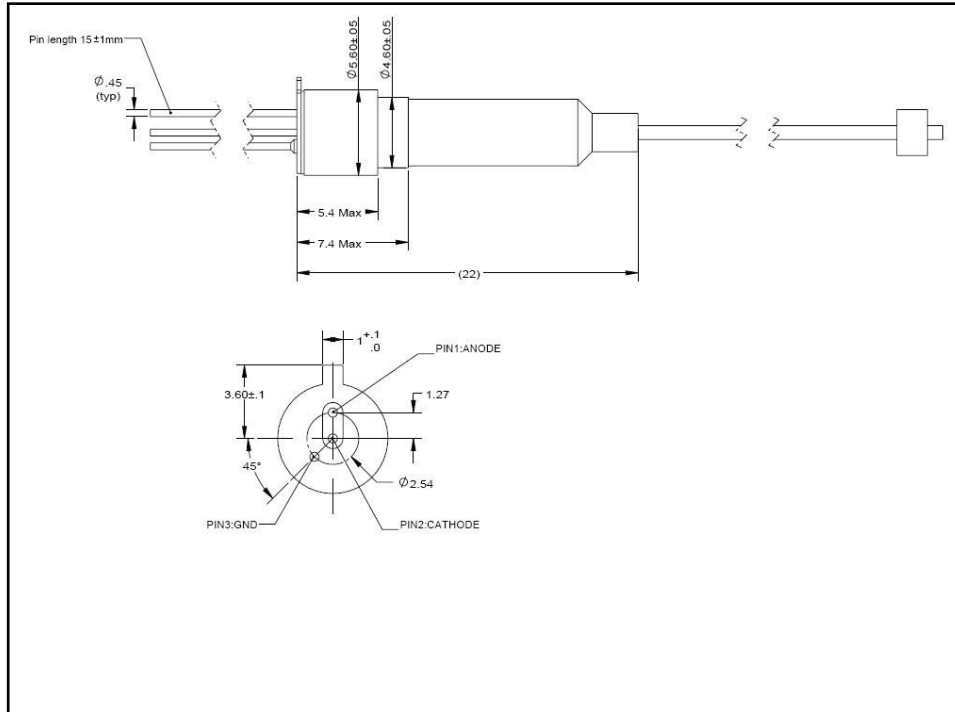
DC/Optical Characteristics

Parameter	Condition	Min	Typ	Max	Unit
Wavelength	-	1100	-	1600	nm
Responsivity	1310 nm	0.85	0.90	-	A/W
	1550 nm	0.95	0.98	-	
Dark Current	25°C	-	-	5	nA
	85°C	-	-	50	
Capacitance	-	-	0.35	0.4	pF
Optical Return Loss	-	-	-	-40	dB
Bias Voltage	-	10	12	15	V
Fiber Buffer	-	-	900	-	μm
Fiber Core / Cladding	-	-	9/125	-	μm

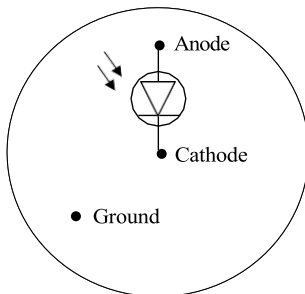
RF Characteristic

Parameter	Condition	Min	Typ	Max	Unit
Frequency Range ¹	2653A	-	-	4000	MHz
	2653E	-	-	6000	
Frequency Response ¹	2653A/E, peak-to-valley, < 4GHz	-	-	2	dB

Outline Dimensions (Dimensions are in mm)



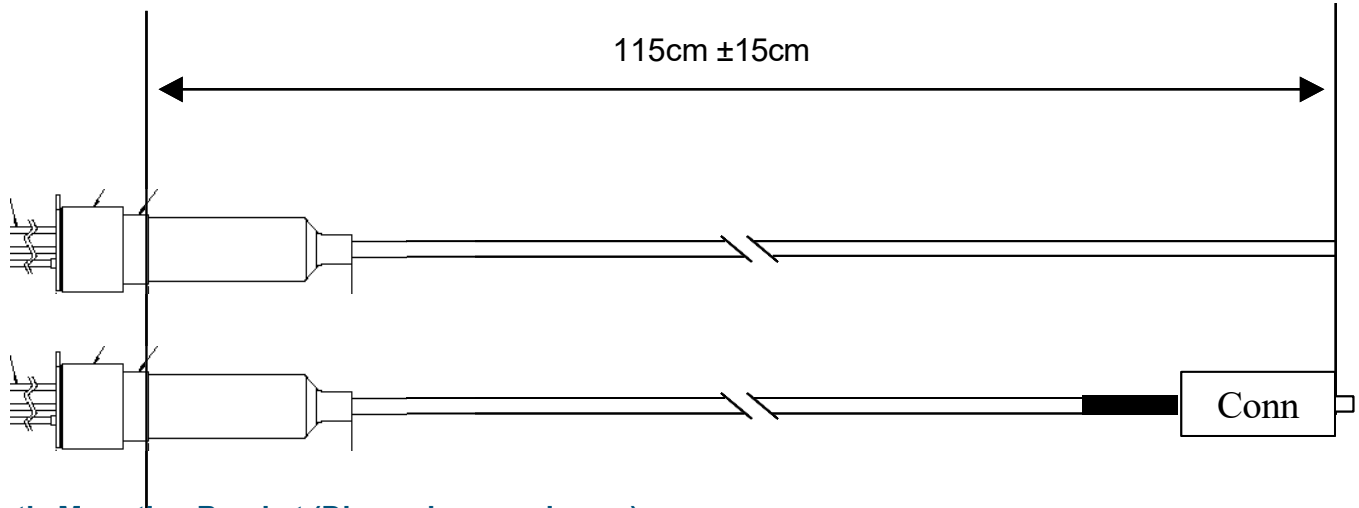
Block Diagram and Pinout



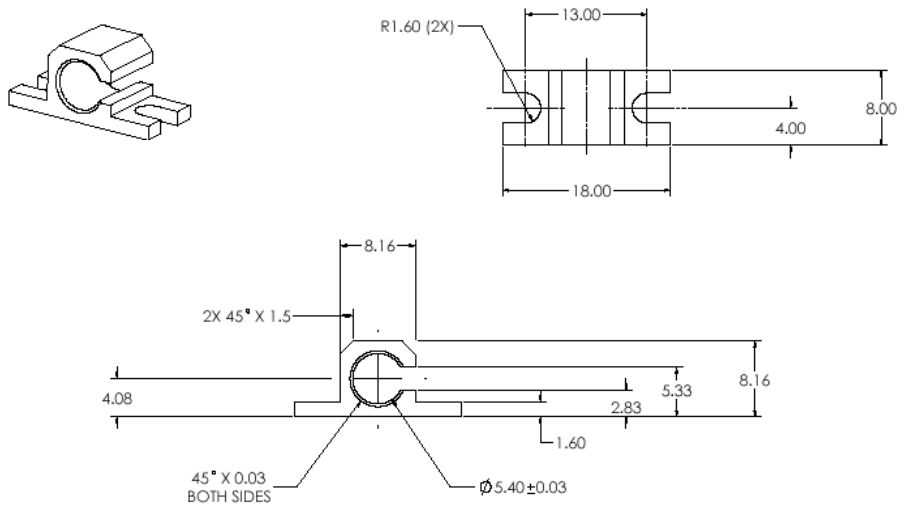
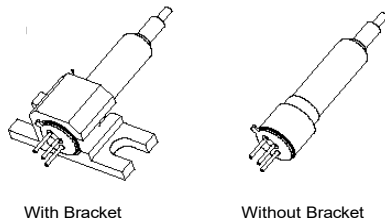
Pin Definitions

Pin	Description
1	Anode
2	Cathode
3	Ground

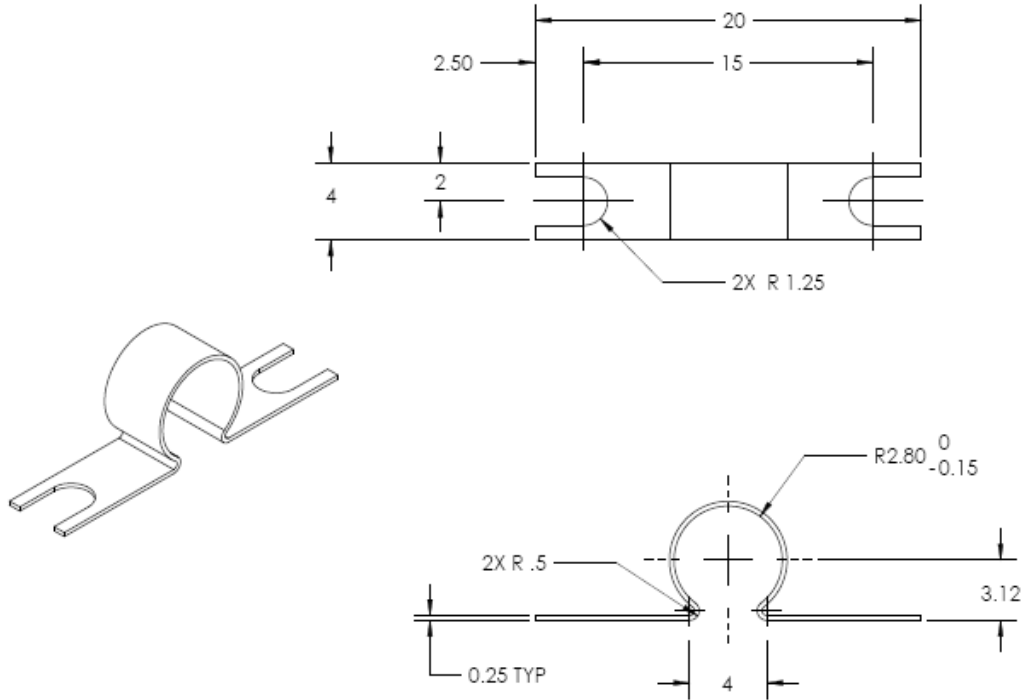
Fiber Length



Plastic Mounting Bracket (Dimensions are in mm)



Metal Mounting Bracket (Dimensions are in mm)



Ordering Information – Model Number Options

2653A-045-115-N

