ABORN ELECTRONICS
AN OPTOELECTRONIC COMPANY

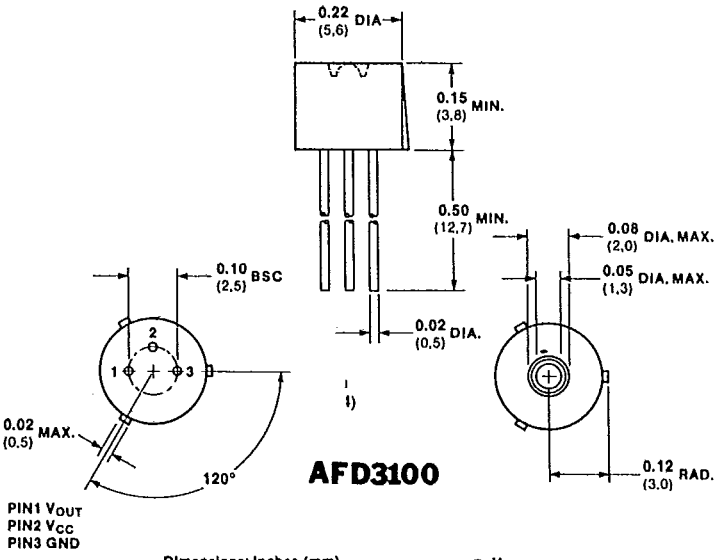
AFD3100, AFD5100
Fiber Optics Integrated Digital Receiver

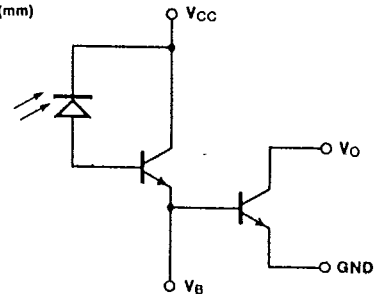
Optoelectronics Products

Description

This receiver is a monolithic integrated circuit containing a photodiode and a high speed darlington pair with an open collector output. From a digital light input signal emitted from a fiber optic cable a TTL output is available. Operates from a single supply voltage. Optimized for 660nm light and 1000μ plastic fiber. Available in a TO-18 plastic lensed cap and pig tailed packages.

Package Outline





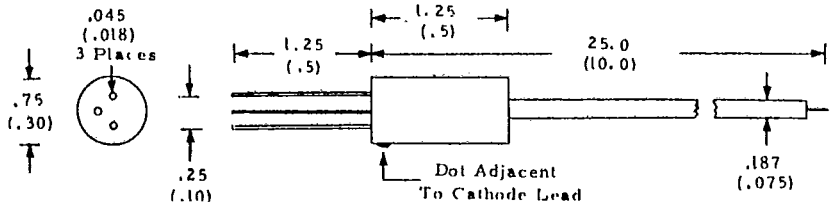
Absolute Maximum Ratings

(No Derating Required Up to 70°C)

Maximum Temperature	
Operating Temperature	−20°C to +85°C
Storage Temperature	−55°C to +125°C
Pin Temperature (Soldering, 10 s)	
(1.6 mm below seating plane)	260°C
Maximum Power Dissipation	
Output Collector Power Dissipation	200 mW
Maximum Voltage and Currents	
V_{CC} Supply Voltage	
(1 minute maximum)	15 V
I_{OUT} Output Current	50 mA
V_{OUT} Output Voltage	15 V

AFD5100

MECHANICAL CHARACTERISTICS Dimentions Are Typical And In cm (Inch)



Recommended Operation Conditions

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNIT
λ	Input Wavelength	600	660		nm
V_{CC}	Supply Voltage, Output	4.5		5.5	V
N	Fan Out (TTL Load)		8.0		
T_A	Operating Temperature			25	°C

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Electrical Characteristics Over Recommended Temperature T_A = 0°C to 70°C Unless Otherwise Noted

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNIT	TEST CONDITION
I_{OH}	High-Level Output Current		100	250	μA	V_{CC} = 5.0 V, V_O = 5.0 V
V_{OL}	Low-Level Output Voltage		0.2	0.4	V	V_{CC} = 5.0 V, P_T = 5.0μW
P_T	Minimum Input Power		1.0	3.0	μW	I_{OL} (Sinking) = 5.0mA Ic = 5.0 mA λ = 660 nm RL = 300Ω
NA	Numerical Aperature of Input Port			0.3		

Switching Characteristics T_A = 25°C, V_{CC} = 5.0 V (See Fig. 1)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNIT	TEST CONDITION
t_{PLH}	Propagation Delay Time to High Output Level		2.2	5.5	μs	R_L = 270Ω C_L = 15 pF
t_{PHL}	Propagation Delay Time to Low Output Level		2.1	6.5	μs	R_L = 270Ω C_L = 15 pF
t_r	Output Rise Time (10-90%)			4.6	μs	R_L = 270Ω C_L = 15pF
t_f	Output Fall Time (90%-10%)			20	μs	R_L = 270Ω C_L = 15pF

Fig. 1