TT Electronics

OPF1412T, OPF1414, OPF1414T

Features:

- Low cost
- High speed
- No mounting hardware required
- Wide temperature range
- 100% LED burn-in (96 hours)
- SMA or ST style ports
- Wave solderable

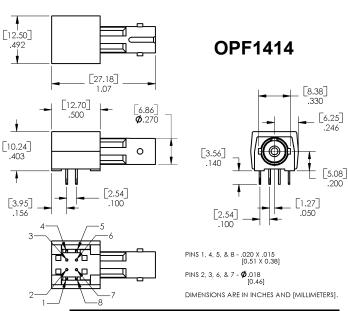




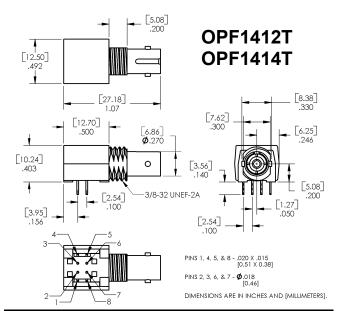
T-Package

Description:

The OPF1412F and OPF1414 series fiber optic transmitters contain a high speed 840 nm GaAlAs LED. This LED in conjunction with the package lensing is designed to efficiently couple light into multimode optical fibers ranging in size from $50/125~\mu m$ up to $200/230~\mu m$. The high coupling efficiency of the LED and lensing allows the devices to be used at low current drive levels thus decreasing the power consumption and increasing system reliability. The consistency of coupling varies by less than 5 dB from part to part which reduces the dynamic range requirements of the receiver. The high power (-16.0 dBm into $50/125~\mu m$) OPF1414 was designed for small fiber applications or where there are large fixed losses such as in systems that contain star couplers or in line connectors.



Pin#	Description	Pin#	Description
1	No Connection	8	No Connection
2	Anode	7	Anode
3	Cathode	6	Anode
4	No Connection	5	No Connection



Part Number	Typ. dBm into 50/125μm @ 60mA	Typ. dBm into 100/140µm @ 60mA		
OPF1412T	-16.0	-12.0		
OPF1414	-12.0	-6.5		
OPF1414T	-12.0	-6.5		



General Note



Electrical Specifications

Absolute Maximum Ratings (T _A = 25° C unless otherwise noted)				
Storage Temperature Range	-55°C to +85°C			
Operating Temperature Range	-40°C to +85°C			
Forward Input Current	Peak 200 mA DC 100 mA			
Reverse Input Voltage	1.8 V			
Lead Soldering Temperature (1/16" (1.6 mm) from case for 5 seconds with soldering iron) ⁽¹⁾	260° C			

Notes:

(1) All parameters tested using pulse technique.

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS	
V_{F}	Forward Voltage	1.48	1.70 1.84	2.09	V	I _F = 60 mA I _F = 100 mA	
V _F /T	Forward Voltage Temperature Coefficient		-0.20		mV/°C	I _F = 60 mA	
V_{BR}	Reverse Input Voltage	1.8	3.8		V	I _R = 100 μA	
λр	Peak Emission Wavelength	820	840	865	nm	I _F = 60 mA	
Ст	Diode Capacitance		55		pF	V = 0, f = 1 MHz	
P _T /T	Optical Power Temperature Coefficient		008 020		dB/°C	I _F = 60 mA I _F = 100 mA	
t _r , t _f	Rise Time, Fall Time (10% to 90%)		4.0	6.5	ns	I _F = 60 mA, no pre-bias	

Peak Output Optical Power										
SYMBOL	PARAMETER	1412			1414					
		MIN	ТҮР	мах	MIN	ТҮР	МАХ	UNITS	TEST CONDITIONS	
	100/440 511 0.11	-15.0	-12.0	-10.0	-9.5	-6.5	-4.5		I _F = 60 mA, T _A = 25°C	
P _{T100} 100/140 µm Fi N.A. = 0.30	100/140 µm Fiber Cable N.A. = 0.30	-13.5	-10.0	-7.6	-8.0	-4.5	-2.1	dBm	I _F = 100 mA, T _A = 25°C	
	CO E/40E Eibar Cabla	-19.0	-16.0	-14.0	-15.0	-12.0	-10.0		I _F = 60 mA, T _A = 25°C	
P _{T62}	62.5/125 µm Fiber Cable N.A. = 0.275	-17.5	-14.0	-11.6	-13.5	-10.0	-7.6	dBm	I _F = 100 mA, T _A = 25°C	
	50/125 μm Fiber Cable N.A. = 0.20	-21.8	-18.8	-16.8	-18.8	-15.8	-13.8	dBm	I _F = 60 mA, T _A = 25°C	
		-20.3	-16.8	-14.4	-17.3	-13.8	-11.4		I _F = 100 mA, T _A = 25°C	

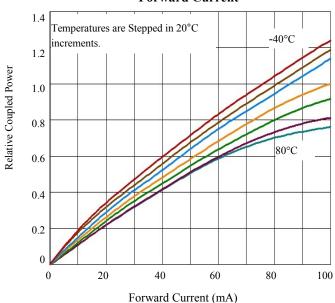
Issue B 08/2016 Page 2



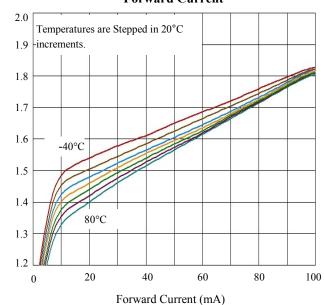
Performance

Forward Voltage

Relative Coupled Power vs Forward Current



Typical Forward Voltage vs Forward Current





Issue	Change Description	Approval	Date
А	Initial Release	Jim Plaster	02/13/07
В	Transferred to the new TT Electronics template		8/2016