PHOTONIC DETECTORS INC.

High-Power & Current GaAs Infrared Emitters
Peak Wavelength, 940 nm, Type PDI-E914

PACKAGE DIMENSIONS inch (mm)

.038 [0.97]
.041 [1.04]
45°
Ø.185 [Ø4.70]
Ø.210 [Ø5.33]
940 nm LED CHIP
.019 [0.48] SQUARE
CATHODE

.100 [2.54] MAX
HEADER
2X Ø.017 [0.43]
.168 [4.27]
.100 [2.54]
CATHODE
CLEAR OPTICAL EPOXY
ANODE & CASE
2X 1.06 [27.0]
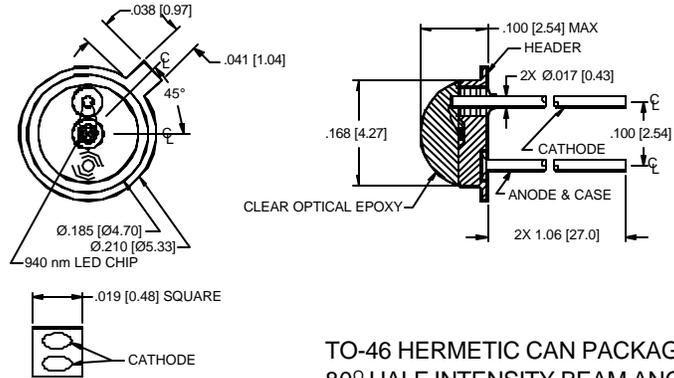
TO-46 HERMETIC CAN PACKAGE
80° HALF INTENSITY BEAM ANGLE

FEATURES
- Dual cathode
- High current
- Wide angle

DESCRIPTION: The **PDI-E914** infrared emitting diode uses dual cathode, high current reliability liquid phase epitaxially grown GaAs. Optimized for high power, high current at 940 nm. Packaged in a TO-46 header with a clear epoxy glob top.

APPLICATIONS
- Photoelectric switches
- Optical encoders
- Infrared sources

ABSOLUTE MAXIMUM RATING (TA=25°C unless otherwise noted)

SYMBOL	PARAMETER	MIN	MAX	UNITS
Pd	Power Dissipation		360	mW
I_{FP}	Continuous Forward Current		180	mA
I_{FP}	Peak Forward Current (100μs pulse,10pps)		3.0	A
V_R	Reverse voltage		3.0	V
To & Ts	Storage & Operating Temperature	-65	+125	°C
TS	Soldering Temperature*		+260	°C

*1/16 inch from case for 3 secs max

TYPICAL RADIATION PATTERN

RELATIVE POWER OUTPUT (%)
BEAM ANGLE, θ (deg)
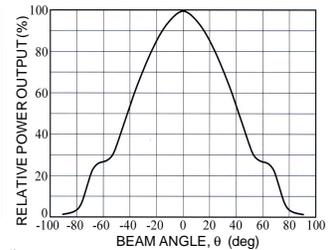
ELECTRO-OPTICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	MIN	TYP	MAX	UNITS
P_O	Output Power	I_F = 100 mA	1.0	5.0		mW
V_F	Forward Voltage	I_F = 100 mA		1.35	1.75	V
I_R	Reverse Current	V_R = -3.0 V			10	**m**A
λ_P	Peak Wavelength	I_F = 50 mA	925	940	955	nm
$D\lambda$	Spectral Halfwidth	I_F = 50 mA		50		nm
R_d	Dynamic Resistance	I_F = 100 mA		0.6		Ohms
t_r	Rise Time	I_F = 100 mA		1.1		**μ**S
t_f	Fall Time	I_F = 100 mA		1.5		**m**S

POWER OUTPUT vs FORWARD CURRENT

Pulse = 10μsec, 100Hz
T_A = 25°C
Pulsed
DC
RELATIVE POWER OUTPUT
I_F IN AMPS

TYPICAL POWER OUTPUT DEGRADATION CURVE

Pulse = 10μsec, 100Hz
T_A = 25°C
Pulsed
DC
V_F IN VOLTS
I_F IN AMPS

SPECTRAL OUTPUT

I_F = 20mA
V_F IN VOLTS
TEMPERATURE, °C
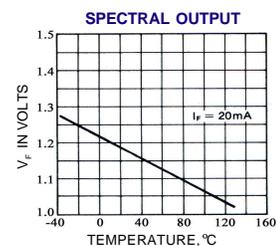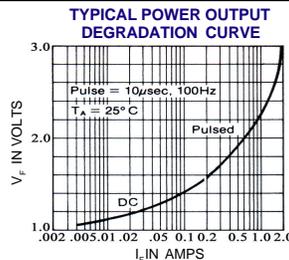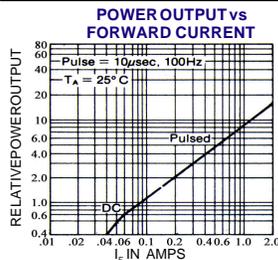
Information in this technical data sheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice. Optical power and radiant intensity measured using uncapped dimpled TO-46 into integrating sphere.