880nm single color LED Diode

Product Description

The 880nm IR emitter series is designed for applications requiring high output and precise optical / mechanical axis alignment. Custom package solutions and sorting are available.

Product features

Hermetically Sealed TO-46；High Output Power；Narrow Beam Angle ；High Reliability

Part Number

MP-LED-880-4-TO46

Application area

Optical Switches / Security Systems | Linear & Rotary Encoder | Remote Controls / Robotics | Card Readers / Medical Electronics

Core parameters

Center wavelength
880nm

General Parameters

Absolute Maximum Ratings (Ta=25°C)

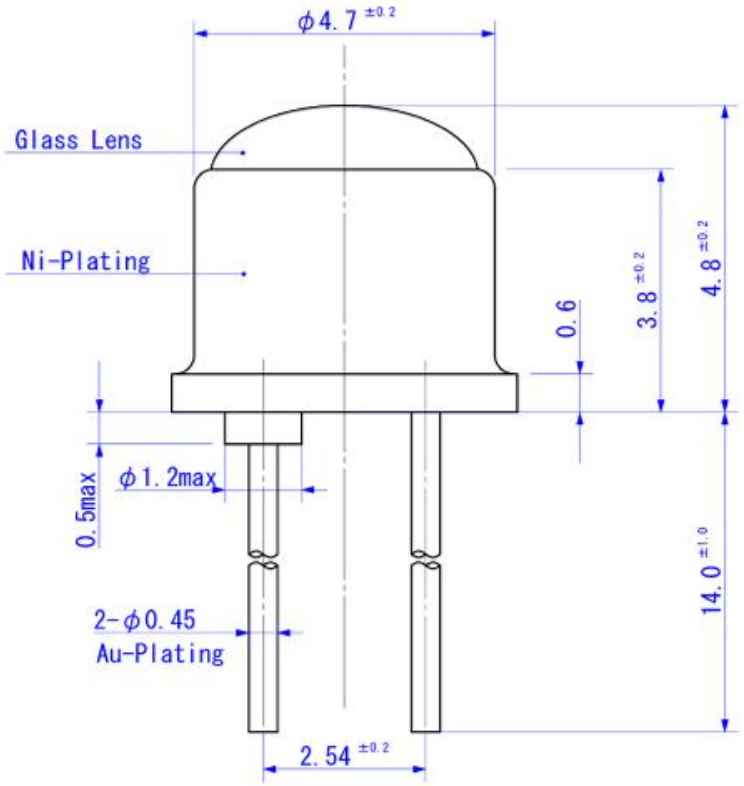
Items	Symbol	Ratings	Unit
Forward Current(DC)	IF	100	mA
Forwared Current(Pulse)*1	IFP	1	A
Reverse Voltage	VR	5	V
Power Dissipation	PD	180	mW
Operating Temperature Range	Topr	-20 ~ +85	°C
Storage Temperature Range	Tstg	-30 ~ +100	°C
Junction Temperature	Tj	125	°C
Lead Soldering Temperature*2	Tls	260	°C

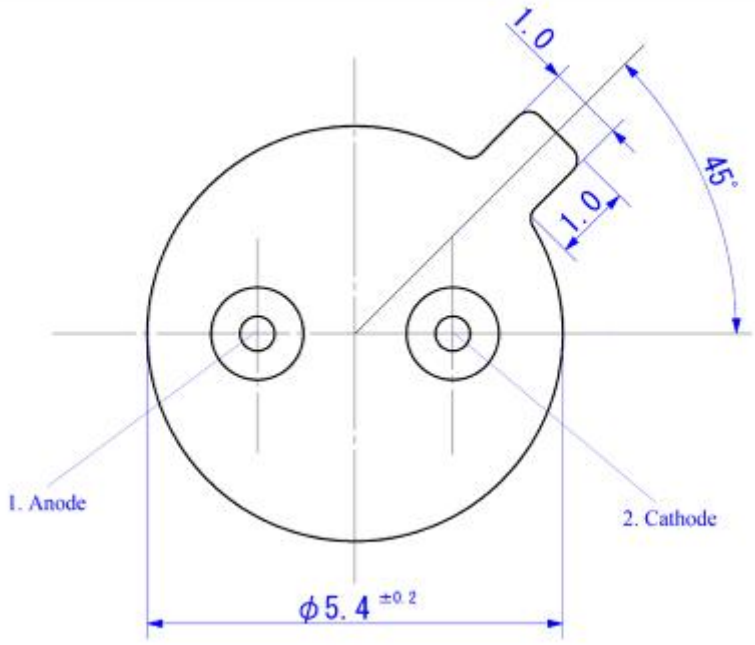
*1: Tw=10μsec, T=10msec. *2: Time 5 Sec max, Position: Up to 3mm from the body.

Electrical & Optical Characteristics (Ta = 25°C)

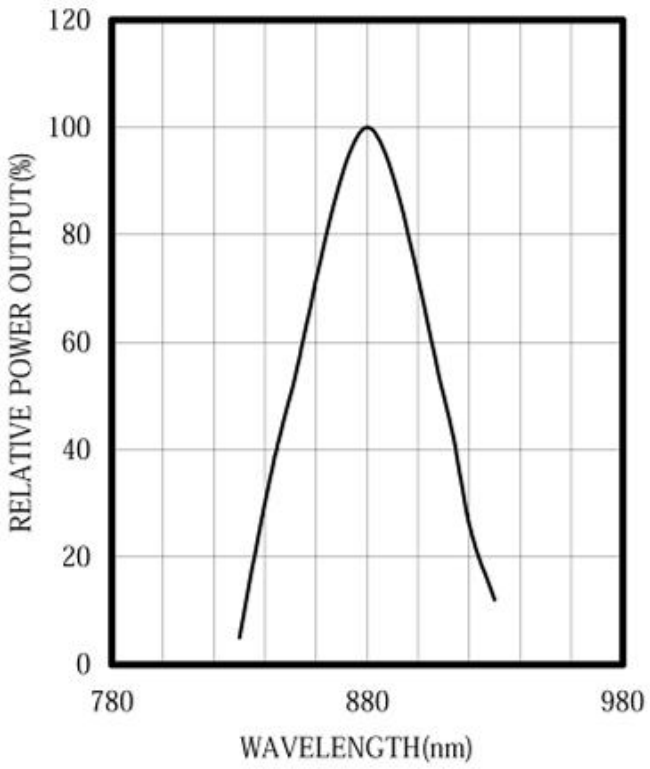
Items	Symbol	Test Condition	Min.	Typical	Max.	Unit
Power Output	PO	IF=50mA	2.4	4.0	--	mW
Forward Voltage	VF	IF=50mA	--	1.45	1.8	V
Reverse Current	IR	VR=5V	--	--	10	μA
Peak Emission Wavelength	λp	IF=50mA	860	880	--	nm
Spectra Line Half Width	Δλ	IF=50mA	--	60	--	nm
Half Intensity Beam Angle	Θ	IF=50mA	--	±4	--	°
Rise Time	Tr	IF=50mA	--	1.5	--	ns
Fall Time	Tf	If=50mA	--	0.8	--	ns
Junction Capacitance	Cj	1MHz, V=0V	--	15	--	pF
Temperature Coefficient of PO	P/T	IF=10mA	--	-0.5	--	%/°C
Temperature Coefficient of VF	V/T	IF=10mA	--	-1.5	--	mV/°C

Package Dimensions and Electro-Optical Characteristics

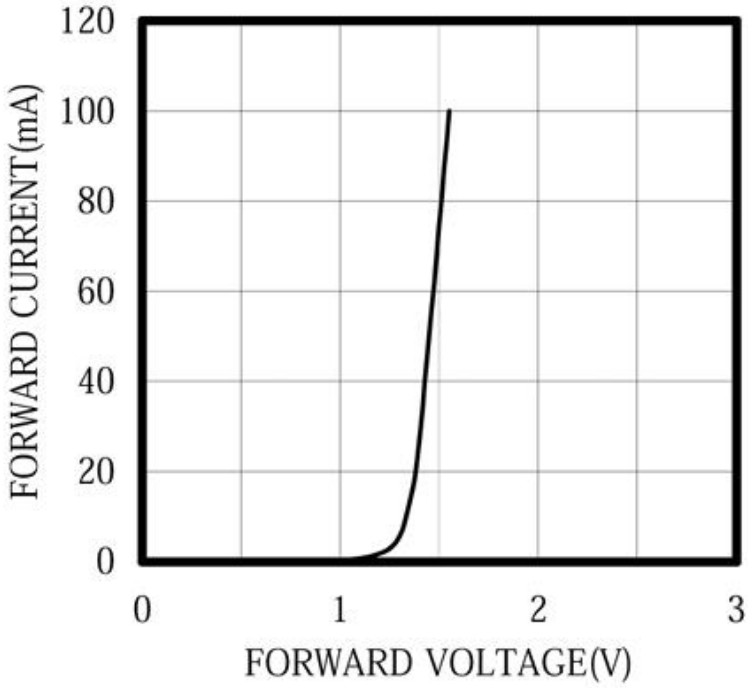


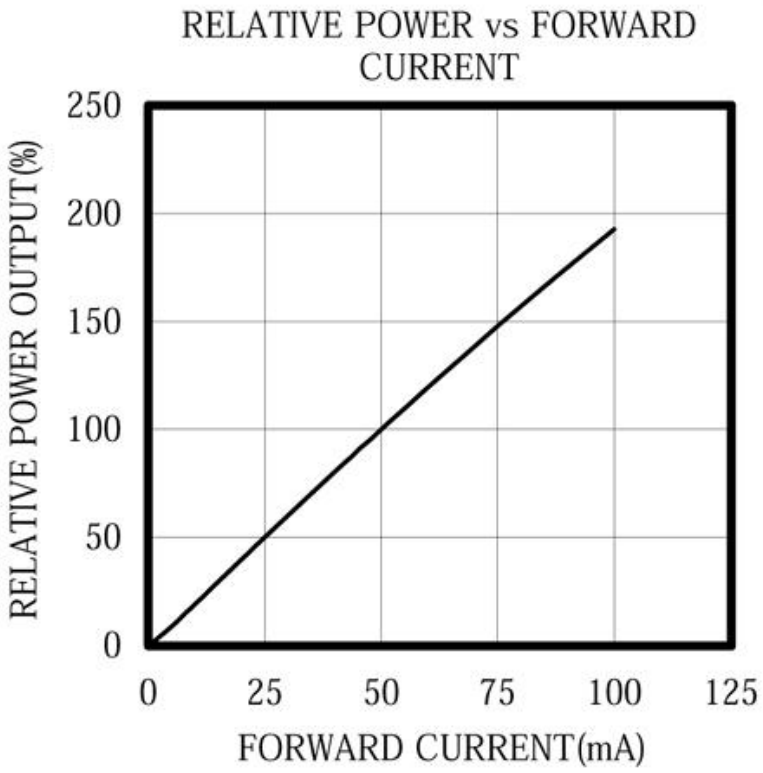


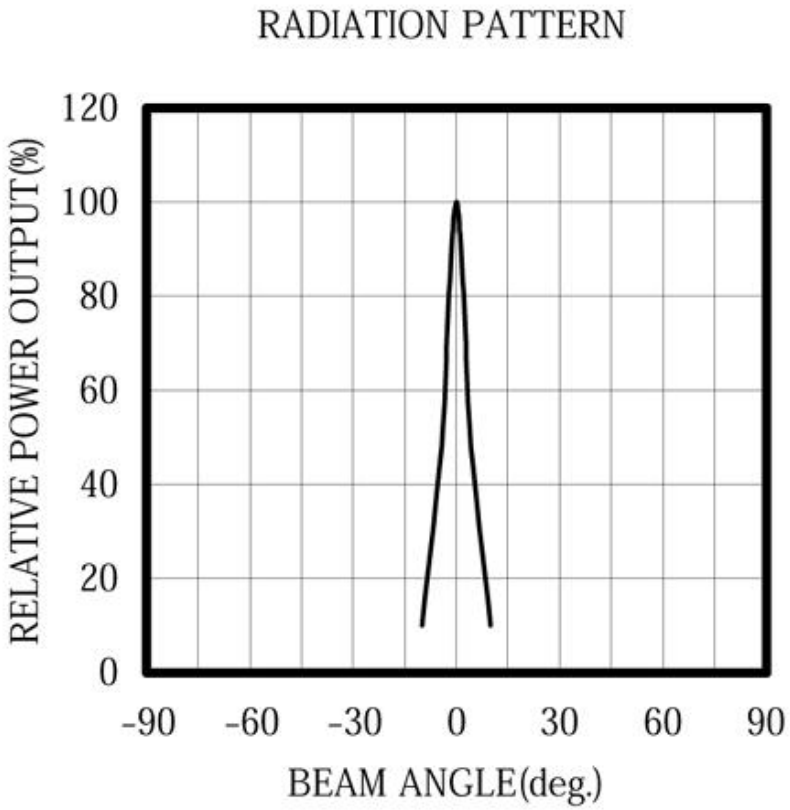
SPECTRAL OUTPUT



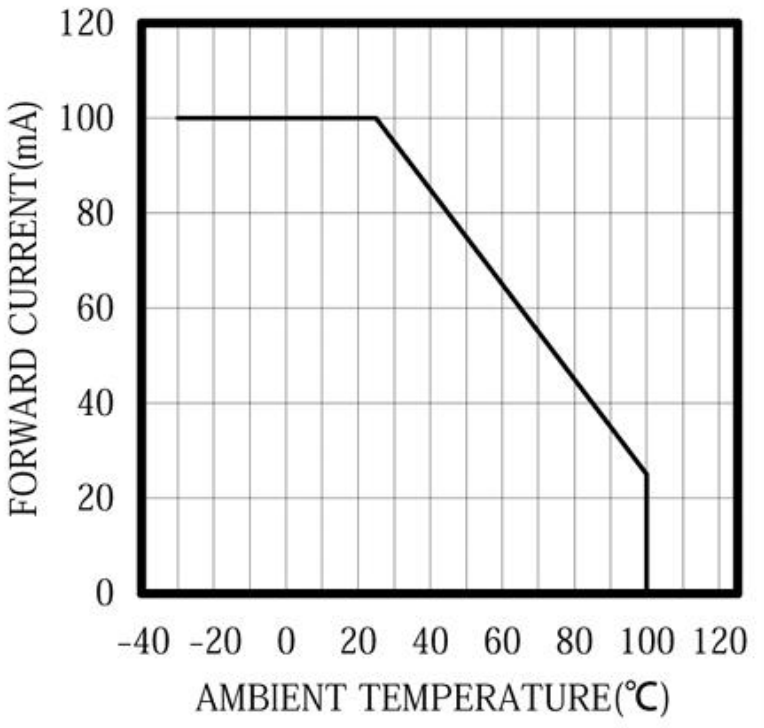
FORWARD I-V CHARACTERISTICS



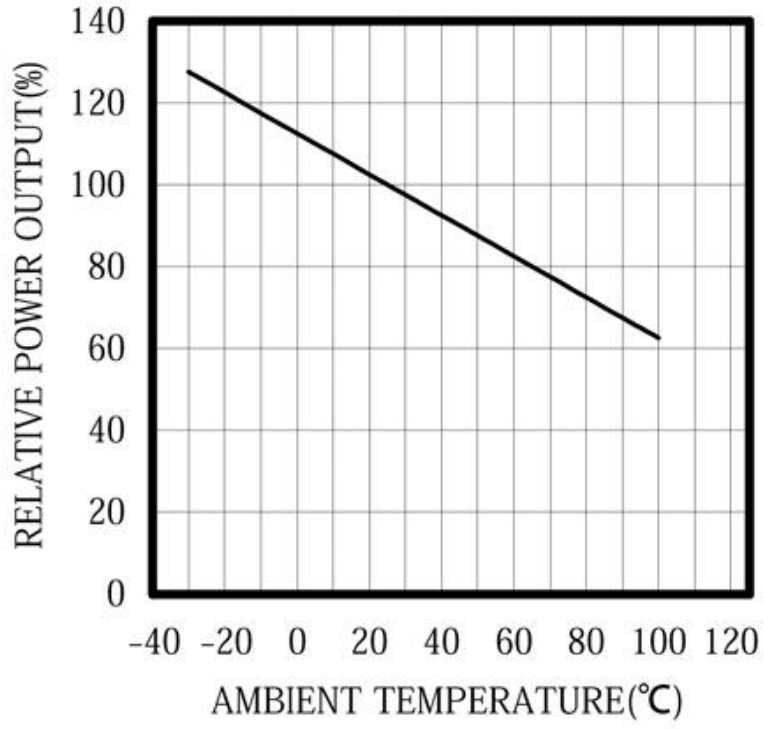

RELATIVE POWER vs FORWARD CURRENT
RELATIVE POWER OUTPUT(%)
250
200
150
100
50
0
0
25
50
75
100
125
FORWARD CURRENT(mA)

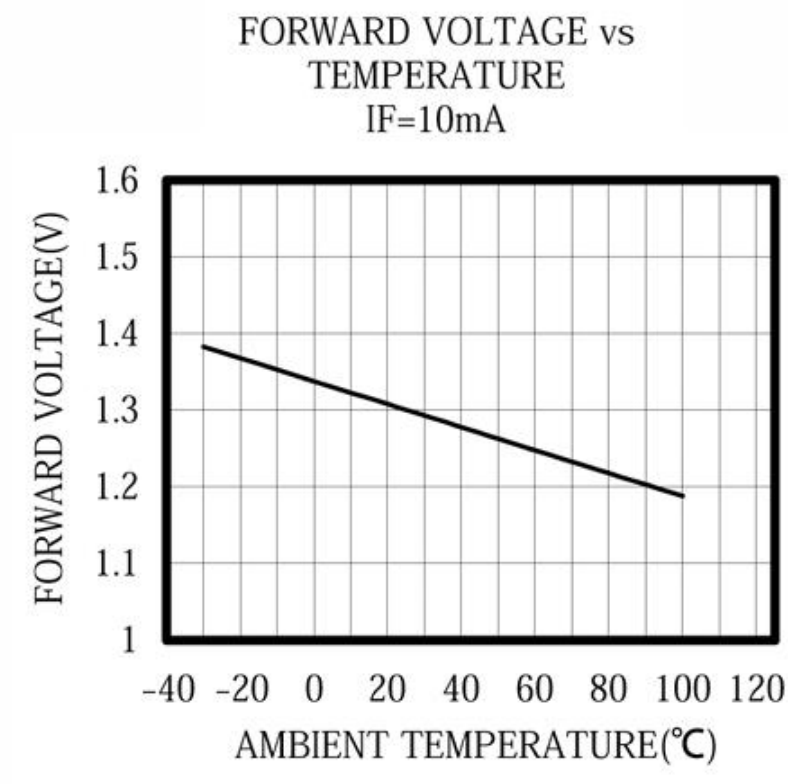

RADIATION PATTERN
RELATIVE POWER OUTPUT(%)
120
100
80
60
40
20
0
-90
-60
-30
0
30
60
90
BEAM ANGLE(deg.)

THERMAL DERATING CURVE



POWER OUTPUT vs TEMPERATURE
IF=10mA




FORWARD VOLTAGE vs
TEMPERATURE
IF=10mA
FORWARD VOLTAGE(V)
1.6
1.5
1.4
1.3
1.2
1.1
1
-40 -20 0 20 40 60 80 100 120
AMBIENT TEMPERATURE(℃)