PARA LIGHT ELECTRONICS CO., LTD.
4F, No.1, Lane 93, Chien Yi Road, Chung Ho City, Taipei, Taiwan,
Tel: 886-2-2225-3733 Fax: 886-2-2225-4800
E-mail: para@para.com.tw http://www.para.com.tw

DATA SHEET

PART NO. : EP2036-350IR-T

V : A / 4

CUSTOMER'S APPROVAL: _____ DCC: _____

EP2036-350IR4-T

Enhanced Power LED Revolutionary Light Source Module

e-mail:para@para.com.tw http://www.para.com.tw

FEATURES

Conventional LED design: Simple to use.

High Flux and Low Cost: More competitive advantages in the LED industry.

Special body frame: Excellent transiting heat from LED chip operating under 350mA.

TYPICAL APPLICATIONS

Free air transmission system/optoelectronic switch

Charge Coupled Device/Infrared applied system/smoke detector

Light source for remote control devices

ABSOLUTE MAXIMUM RATINGS, T_a=25°C

Parameter	Symbol	Rating	Units
DC Forward Current	IF	350	mA
Pulsed Forward Current	Ifp	700	mA
Power Dissipation	Pd	630	mW
Reverse Current (VR=5V)	IR	10	uA
Operating Temperature Range	Topr	-35 to 85	°C
Storage Temperature Range	Tstg	-35 to 85	°C
Thermal Resistance RθJ-BOARD (°C /W)	Rj-a	55	°C /W
LED Junction Temperature	Tj	110	°C
Optical Rise Time (350mA)	T_R	11	ns
Optical Fall Time (350mA)	T_F	7	ns

OPERATING CONDITIONS:

1. 700mA operating condition under f=1K Hz and 1/8 duty cycle.
2. 630mW: 6pins of E-Power LED must be mounted on Aluminum PCB.
   (Aluminum PCB: 25.4mm × 25.4mm 1.6t / two layers / 2.0 oz)
3. LED Operating required Anti-electrostatic devices in all equipment, machinery and manual assembly.
4. Suggested operation current 350mA.
5. Heat-sink paste required

EP2036-350IR4-T

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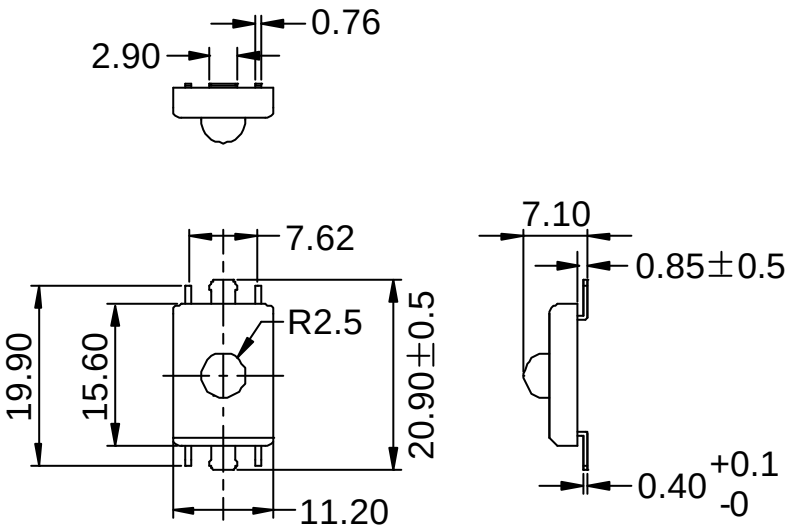
ELECTRICAL CHARACTERISTICS

Ta=25°C IF=350mA

Unit	Forward Voltage VF (Volts)		Reverse Current VR=5V IR=(uA)	Intensity (w/sr)		Wavelength λP (nm)	Viewing Angle 2q 1/2 (Degrees)
Device Type	Typ	Max	Max	Min	Typ	Typ	Typ
EP2036-350IR4-T	1.8	2.2	10	0.10	0.15	850	30°

The specification is subject to change without notice.

PACKAGE DIMENSIONS



NOTE: 1. All dimensions are in millimeters.
2. Tolerance is ± 0.25 unless otherwise specified.
3. The specification is subject to change without notice.

EP2036-350IR4-T

Enhanced Power LED Revolutionary Light Source Module

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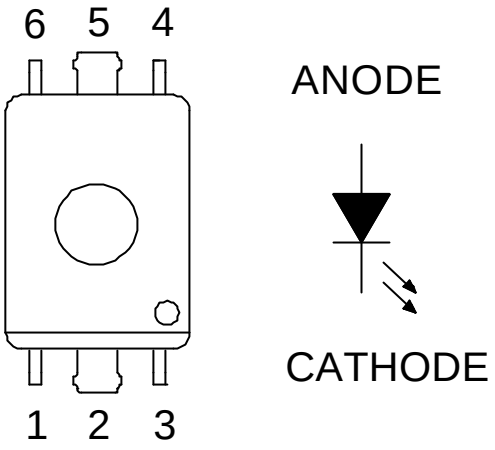
PIN CONNECTION

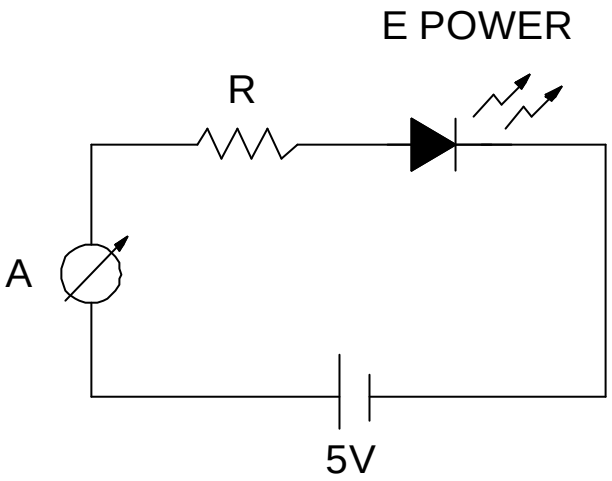
COLOR	IR
ANODE	6
CATHODE	2 5



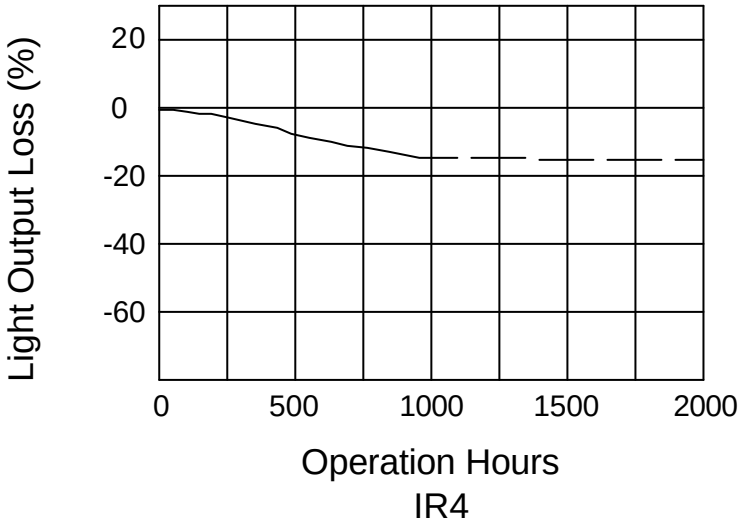
TEST CIRCUIT

EP2036-350IR4-T

COLOR	VF	R(350mA)
VIOLE	1.8V	9.1 Ohm



OPERATION LIFE



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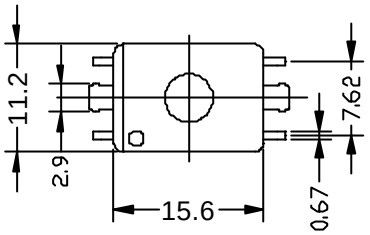
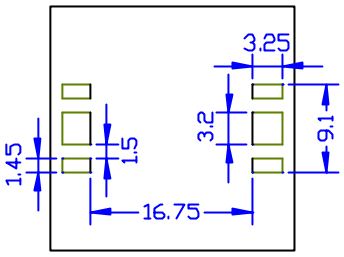
HOW TO USE E-POWER LED

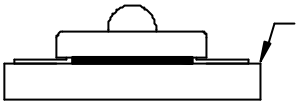
(1)E-Power LED dimensions



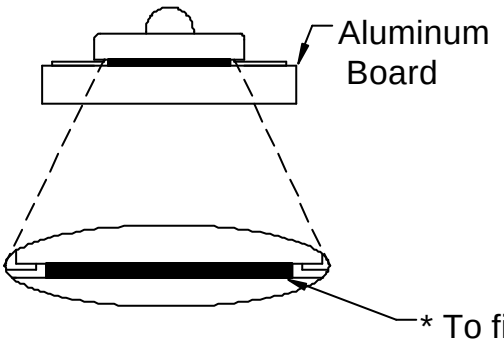
All dimensions are in millimeters.

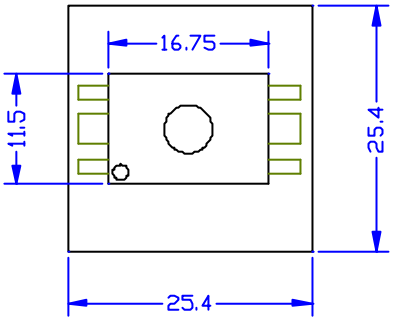
(3)Recommended layout pattern





(2)Accelerate heat dissipation



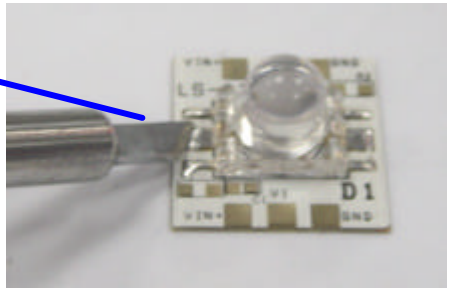


(4) Iron soldering only used constant temperature a soldering-iron 300°C/5sec by the iron with knife type head, the procedure as following (attached picture):

4-1 Put the iron head in Aluminum PCB PAD area, then add the tin (0.8mm) thawed between the pin head and iron head.

4-2 It can be soldered when the iron head is pressed to lead.

Soldering head



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E-POWER VF BIN DISTRIBUTION

BIN	MIN(V)	MAX(V)
V0	1.2	1.4
V1	1.4	1.6
V2	1.6	1.8
V3	1.8	2.0
V4	2.0	2.2

E-POWER Ie BIN DISTRIBUTION

BIN	MIN(w/sr)	MAX(w/sr)
A	0.10	0.13
B	0.13	0.17
C	0.17	0.22
D	0.22	0.29

The Ie guarantee should be added±15%

E-POWER ?P (nm) BIN DISTRIBUTION

BIN	TYP(nm)
IR4	850

*** Note: The specification is subject to change without notice.**

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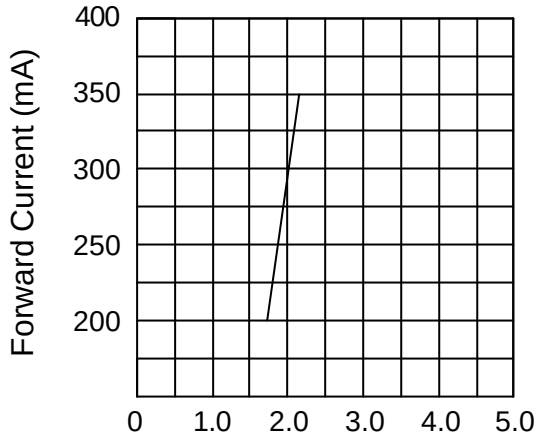
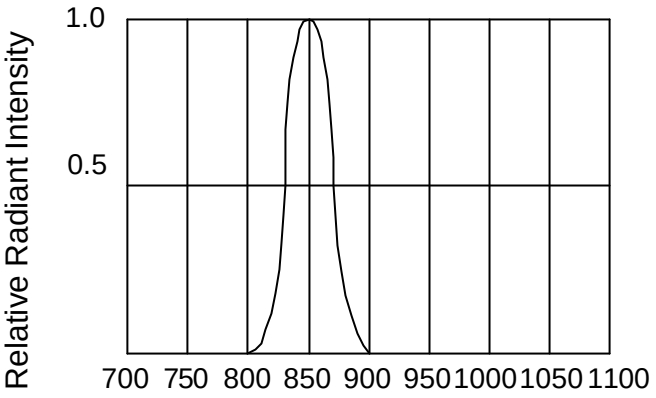
CHARACTERISTICS CURVE

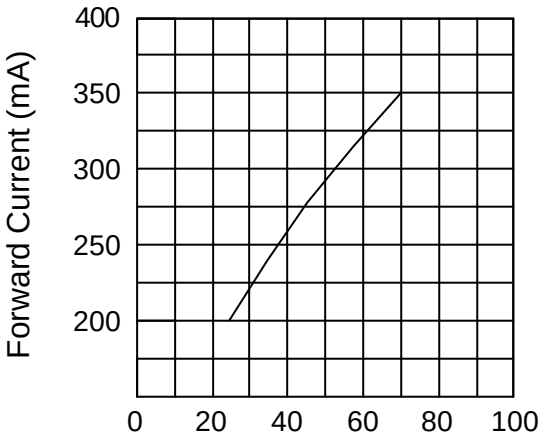


IR4

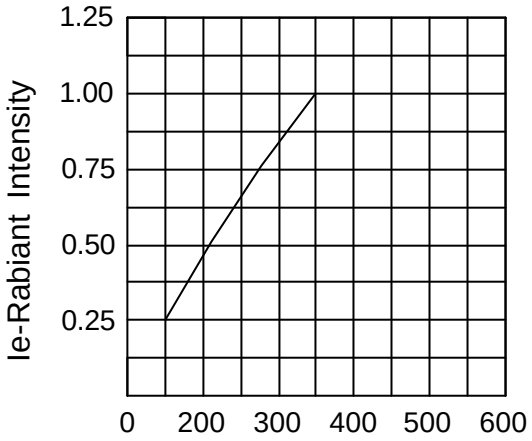


Spectral Distribution

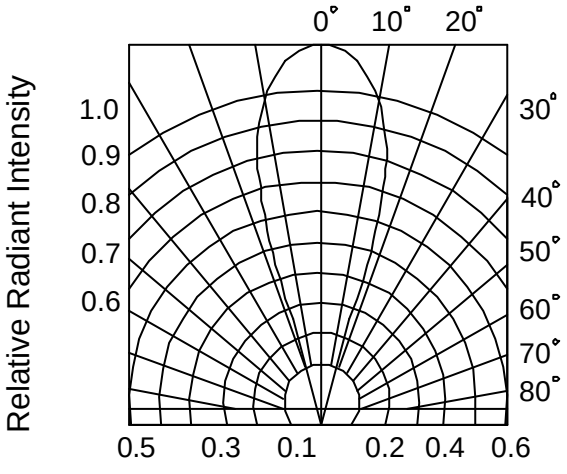
IR4



IR4



IR4



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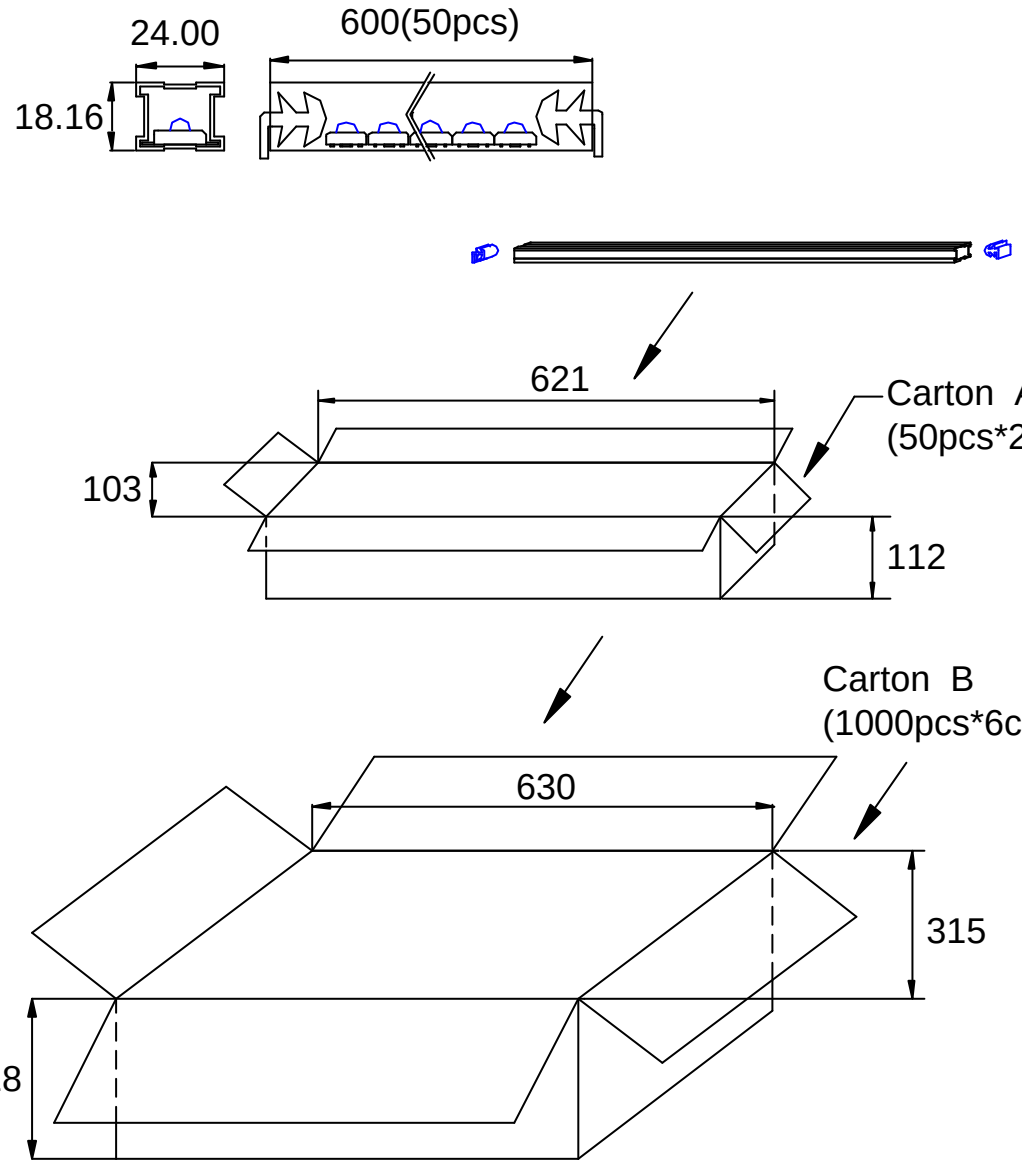
PACKING SPECIFICATIONS



Notes:

1.All dimensions are in millimeters.
2.Normal packing Quantity:1000pcs.
3.The carton B contains 6 carton A at maximum.

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RELIABILITY TEST FOR E-POWER LAMPS

Classification	Test Item	Description and Test Condition	Reference Standard
Endurance Test	Operation Life	Evaluates resistance of the device when operated at electrical stress Ta=under room temperature IF=350mA Test Time=1000hrs(-24hrs,+72hrs)	MIL-STD-750:1026 MIL-STD-883:1005 JIS C 7021:B-1
	High Temperature Storage	Evaluates device durability for long term storage in hight temperature Ta=85±5°C Test Time=1000hrs(-24hrs,+72hrs)	MIL-STD-883:1008 JIS C 7021:B-10
	Low Temperature Storage	Evaluates device durability for long term storage in low temperature Ta=-35±5°C Test Time=1000hrs(-24hrs,+72hrs)	JIS C 7021:B-12
Environmemtal Test	Temperature Cycling	Evaluates resistance of device at thermal stresses or expansion and contraction 85°C ~ 25°C ~ -35°C ~ 25°C 30min 5min 30min 5min 10Cycles	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS C 7021:A-4
	Thermal Shock	Evaluates device' s structure and mechanical resistance when suddenly exposed at severe changes 85±5°C~-35±5°C 30min 30min 10 Cycles	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011
	Solder Resistance	Evaluates resistance to thermal stress caused by soldering T.Sol=245±5°C Dwell Time=6±1sec	MIL-STD-202:210A MIL-STD-750:2031 JIS C 7021:A-1
	Solderability	Evaluates solderability on leads of device T.Sol=230±5°C Dwell Time=3±1sec.	MIL-STD-202:208D MIL-STD-750:2026 MIL-STD-833:2003

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E-POWER OPERATING PROCEDURE

1. E-power 350 series should be operated at 350mA for ideal performance, but not more than 350mA.
2. Blue, Cyan, Green and White colors must be used in conjunction with heat-sinking devices. Soldering on Aluminum PCB with mid-connection point while keeping the layout pattern (25.4 mm X 25.4 mm) is another way to help heat dissipation.
3. Please be aware that the mid-connection point for Red and Amber is negative-polarity while it is non-polarity in Blue, Cyan, Green and White.
4. E-power products are fully tested and shipped in anti-static packaging.
5. A non-conductive to fill up the heat sink paste should be applied between E-power and heat-sinking device.
6. It is recommended to design circuit in series with protected IC to limit current flow. In a parallel connection, each IC should be protected individually.

* **Note: Iron soldering only used constant temperature a soldering-iron 300±5°C/5sec**

PART NO. SYSTEM OF E–POWER LED

EP 2 03 6 - 350 IR4-T

1---2-3--4-----5----6---7

1. E -Power LED
2. YEAR 2002
3. PACKAGE TYPE: 01 = 10mm LENS , 03 = 5mm LENS , 04 = 11 mm LENS
4. VIEWING ANGLE: 6 = 30°
5. CURRENT: 350mA
6. λP: IR4 (Typ) = 850nm
7. L/F CUP Bottom of Diameter 1.0mm