ENCODER

LA2650

Features

Gap size：2.0 mm

Height：7.55 mm

Incremental output method

Digital output (2 ch)

Built in pull-up resistor

Resolution ： 150 LPI

Pb free

Compliance with EU REACH

Compliance Halogen Free(Br < 900ppm, Cl < 900ppm, Br+Cl < 1500ppm)

The product itself will remain within RoHS compliant version.

Application

Printer

Copier

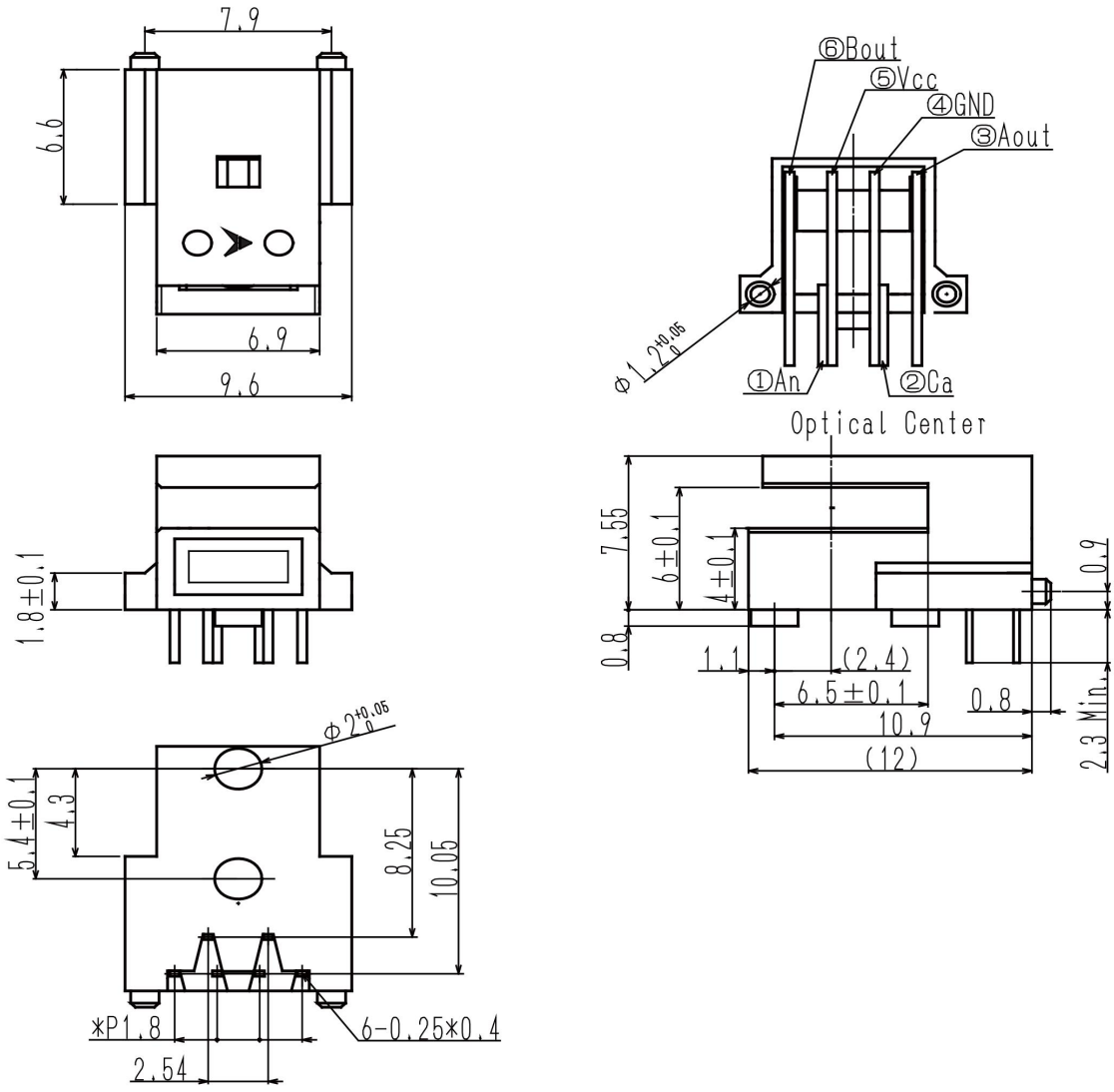
Facsimile

Disc drive

Description

LA2650 is an optical encoder which use an infrared LED to the light source, through assembly process combine emitting components and detecting photo IC, with a digital output and Variations of resolutions, can be used in a wide range of applications.

PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.2mm(.010") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.

ABSOLUTE MAXIMUM RATINGS AT TA =25℃

	Parameter	Symbol	Rating	Unit
Input	Forward Current	I_F	40	mA
	Reverse Voltage	V_R	3	V
Output	Supply Voltage	V_{CC}	7	V
Storage Temperature *1		$T_{stg.}$	-40 ~ +85	°C
Operating Temperature *1		$T_{opr.}$	0~ +85	°C
Soldering Temperature *2		$T_{sol.}$	260	°C

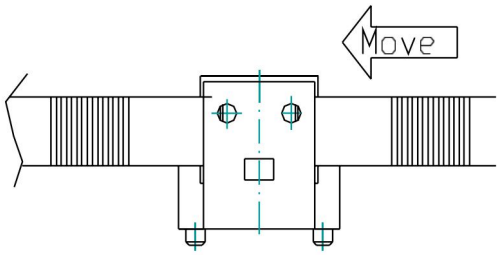
Notes:
*1. No icebound or dew
*2. For max 5 sec. At the position of 1 mm from the resin edge

ELECTRICAL OPTICAL CHARACTERISTICS AT TA=25℃

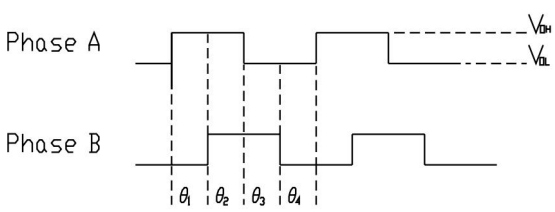
	Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
LED Input	Forward Voltage		V_F	--	1.6	--	V	I_F=20 mA
	Peak Wavelength		λ_P	--	850	--	nm	I_F=20 mA
Operating supply voltage range			V_{CC}	2.7	5.0	5.5	V	--
	Phase difference	*3*4*6	θ	45	90	135	deg	V_{CC}=2.7 to 5.5 V I_F=20 mA
IC output **A-B Phase output**	Duty ratio	*3*5	Dt	30	50	70	%	
	High level output voltage	*3*4	V_{OH}	Vcc×0.8	--	--	V	
	Low level output voltage	*3*4	V_{OL}	--	--	0.4	V	
Maximum Response frequency			f_{max}	--	--	60	kHz	

Notes:

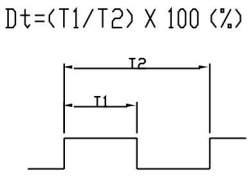
*3. Direction of scale movement



*4. Output waveform of *3



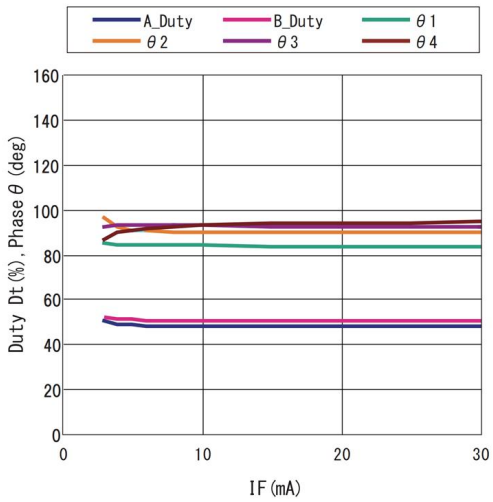
*5. Duty ratio (Dt)



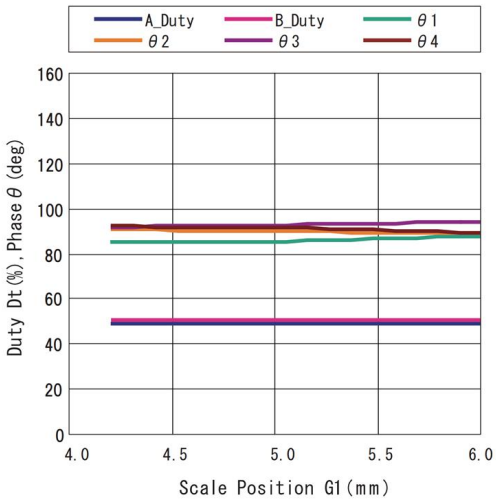
*6. No reverse in phase difference

REPRESENT ATIVE CHARACTERISTICS

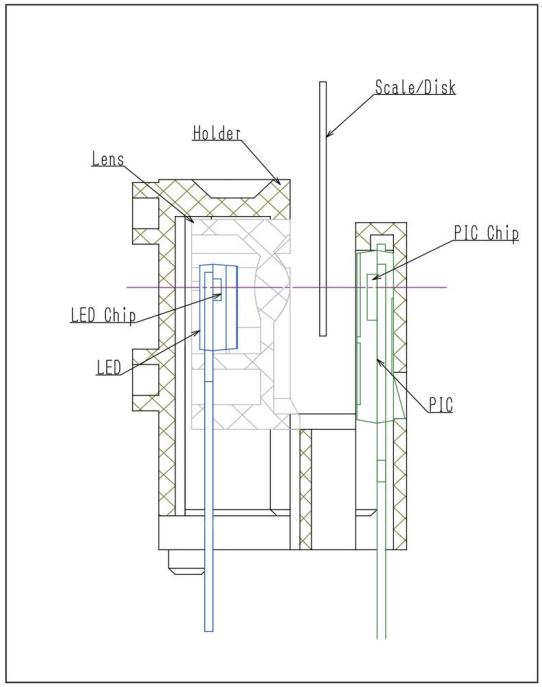
Duty-Phase/IF Dependency

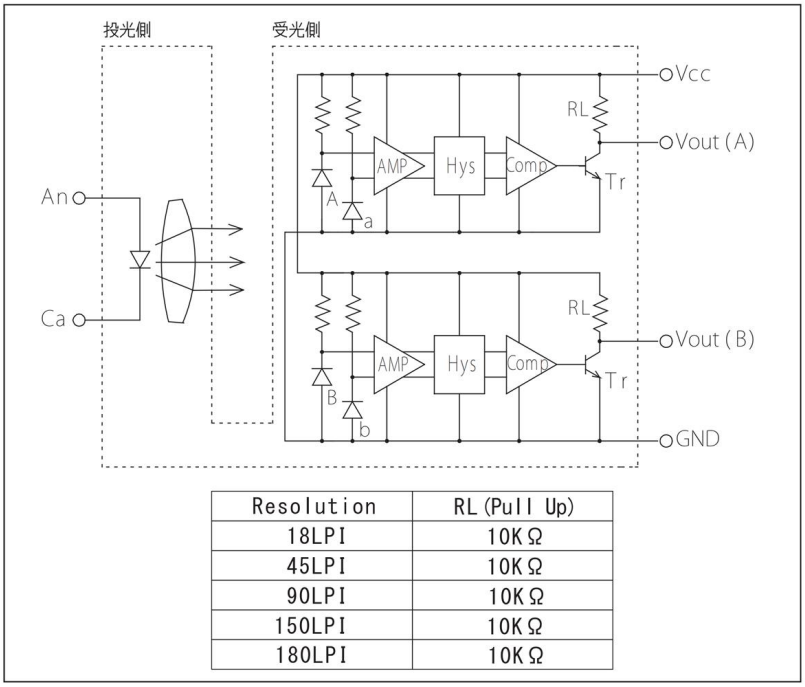


Duty-Phase/Scale Position(G1) Dependency



Structural & Chart Block Diagram





Resolution	RL (Pull Up)
18LPI	10KΩ
45LPI	10KΩ
90LPI	10KΩ
150LPI	10KΩ
180LPI	10KΩ

Packing Quantity Specification

1. 50Pcs/Tube, 20 Tube/1Box

2. 4Boxes/1Carton

Label Form Specification

- PRODUCT: Part Number
- CODE NO.: Product Serial Number
- QTY: Packing Quantity
- LOT No: Lot Number
- REMARKS:Remarks

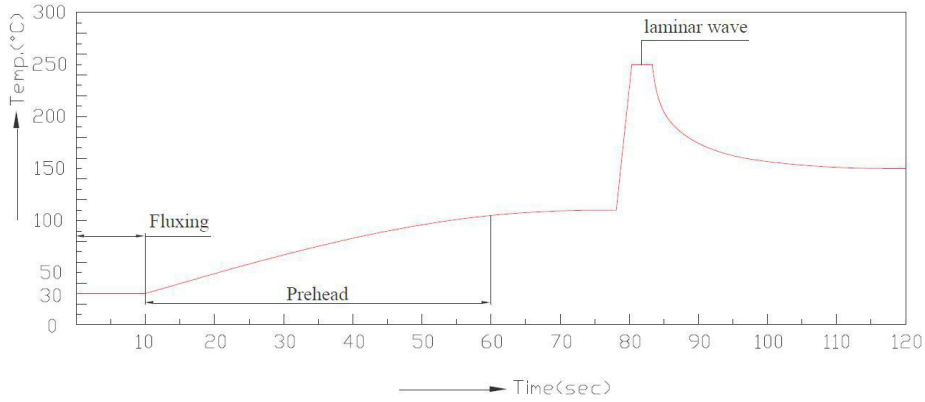
Soldering

1. Careful attention should be paid during soldering. When soldering, leave more than 3mm from solder joint to epoxy bulb, and soldering beyond the base of the tie bar is recommended.

2. Recommended soldering conditions:

Hand Soldering		DIP Soldering	
Temp. at tip of iron	300°C Max. (30W Max.)	Preheat temp.	100°C Max. (60 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	1mm Min.(From solder joint to epoxy bulb)	Distance	1mm Min. (From solder joint to epoxy bulb)

3. Recommended soldering profile



4. Avoiding applying any stress to the lead frame while the encoders are at high temperature particularly when soldering.

5. Dip and hand soldering should not be done more than one time

6. After soldering the encoders, the epoxy bulb should be protected from mechanical shock or vibration until the encoders return to room temperature.

7. A rapid-rate process is not recommended for cooling the encoders down from the peak temperature.

8. Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the encoders.

9. Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

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