

# iC-WG BLCC WGC

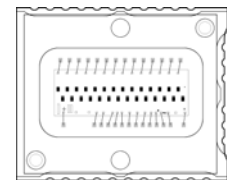
## OPTO ENCODER PACKAGE SPECIFICATION



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### ORDERING INFORMATION

Type	Package	Options	Order Designation
iC-WG	BLCC WGC	Glass Lid	iC-WG BLCC WGC-WG1L
iC-WG	BLCC WGC	reticle WG1R	iC-WG BLCC WGC-WG1R
Code Disc 13bit-Gray +2048 PPR A/B, d 44mm	-	-	WG1S 44-2048

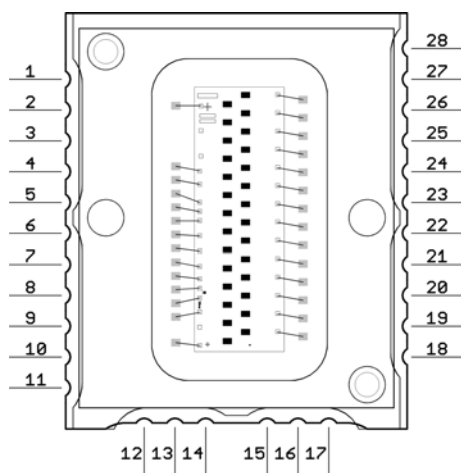


13.7mm x 11.3mm  
RoHS compliant

### PIN CONFIGURATION

### PIN FUNCTIONS

(top view)



No.	Name	Function
1	GND	Ground
2	IN0	Track N0 Analog Output (current sink)
3	IP0	Track P0 Analog Output (current sink)
4	IN1	Track N1 Analog Output (current sink)
5	IP1	Track P1 Analog Output (current sink)
6	RGND	Reference Ground for RSR circuitry
7	RSR	LED Current Control Setup
8	LED	LED Driver Output
9	LGND	LED Driver Power Ground
10	NERR	Error Message Output, low active
11	CSR	External capacitor for LED control
12	TIP	Positive Test Aid Input
13	TIN	Negative Test Aid Input
14	VCC	+5 to +20V Supply Voltage
15	A13	Track 13 Push-Pull Output
16	A12	"
..		"
28	A0	Track 0 Push-Pull Output

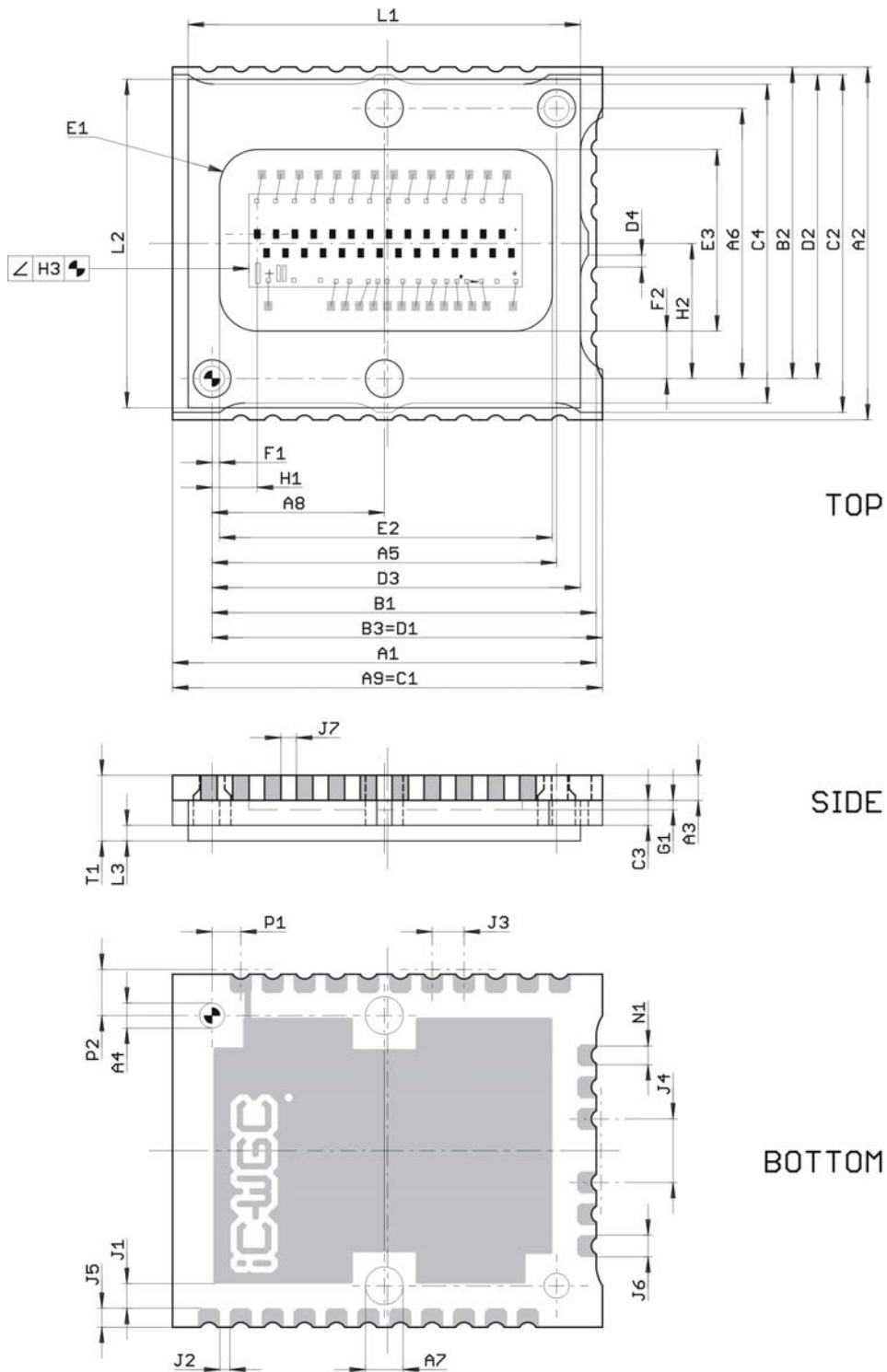
### ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Parameter	Conditions	Fig.	Min.   Typ.   Max.			Unit
					Min.	Typ.	Max.	
TG1	Ta	Operating Ambient Temperature Range (extended temperature range on request)			-20		90	°C
TG2	Ts	Storage Temperature Range			-30		110	°C
TG3	Tpk	Reflow Soldering Peak Temperature	tpk < 20 s, convection reflow (not suitable for vapour phase soldering)  TOL (time on label) 8 h; please refer to customer information file No. 7 for details				260	°C

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### PHYSICAL DIMENSIONS



# iC-WG BLCC WGC

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### DIMENSION TABLE

Item	Parameter	Comments					Unit
			Min.	Typ.	Max.	Tolerance	
	<b>Substrate, Holes and Alignment Holes</b>						
A9	Overall Outline X			13.7		±0.1	mm
A1	Outline X			13.5		±0.2	mm
A2	Outline Y			11.3		±0.2	mm
A3	Substrate Thickness	bottom package to bottom die	0.737	0.8	1.05		mm
A4	Alignment Hole Diameter			0.8		+0.05	mm
A5	Alignment Hole Distance X			10.973		±0.05	mm
A6	Alignment Hole Distance Y			8.636		±0.05	mm
A7	Thruhole Diameter			1.2		+0.05	mm
A8	Alignment Hole vs. Thruhole	tolerance valid for X-/Y-direction		5.487		±0.15	mm
	<b>Reference</b>						
B1	Outline vs. Reference X	left alignment hole center is reference		12.237		±0.2	mm
B2	Outline vs. Reference Y			9.958		±0.2	mm
B3	Overall Outline vs. Reference X	left alignment hole center is reference		12.437		±0.175	mm
	<b>Frame Size and Shape</b>						
C1	Frame Outline X	equivalent to <b>A9</b>					
C2	Frame Outline Y			10.8		±0.25	mm
C3	Frame Thickness		0.681	0.8	0.953		mm
C4	Frame Outline vs. Frame Outline			10.2		±0.25	mm
D1	Frame Outline vs. Reference X	equivalent to <b>B3</b>					
D2	Frame Outline vs. Reference Y			9.718		±0.25	mm
D3	Frame Outline vs. Reference	testing clearance		11.737		±0.25	mm
D4	Frame Outline vs. Edge PTH	testing clearance		0.39		±0.25	mm
	<b>Window Size and Shape</b>						
E1	Window Edge Radius			1.2			mm
E2	Window Cavity X			10.6		±0.25	mm
E3	Window Cavity Y			5.8		±0.25	mm
F1	Window Edge Left Position vs. Reference X			0.237		±0.25	mm
F2	Window Edge Down Position vs. Reference Y			1.518		±0.25	mm
	<b>Chip Placement</b>						
G1	Chip Thickness			0.3			mm
H1	Chip Position vs. Reference X	center of sensor		1.437		±0.15	mm
H2	Chip Position vs. Reference Y	mid of sensors		4.318		±0.15	mm
H3	Chip Tilt Angle vs. Paddle					±1.6	DEG
	<b>Bottom Metal Pattern</b>						
J1	Shield vs. Leads			0.8		±0.03	mm
J2	Lead-Lead Spacing	surface bottom		0.32		±0.03	mm
J3	Lead Pitch			1.016		±0.05	mm
J4	Lead Pitch			2.032		±0.05	mm
J5	Lead Size			0.6		±0.03	mm

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Item	Parameter	Comments					Unit
			Min.	Typ.	Max.	Tolerance	
J6	Lead Size			0.7		±0.03	mm
J7	Lead-Lead Spacing	adjacent sidewall metal	0.2				mm
N1	Lead PTH	remaining inner diameter		0.6		-0.05/+0.1	mm
	<b>Plated-Thruhole Drills</b>						
P1	Drill Grid vs. Reference X			0.915		±0.05	mm
P2	Drill Grid vs. Reference Y			1.5		±0.05	mm
	<b>Glass/Reticle Cover</b>						
L1	Glass/Reticle Size X			10.48		±0.1	mm
L2	Glass/Reticle Size Y			12.48		±0.1	mm
L3	Glass/Reticle Thickness	glass lid WG1L reticle WG1R		0.20 0.55			mm
	Position Glass Lid vs. Chip					±0.025	mm
	<b>Thickness Specifications</b>						
T1	Overall Thickness	bottom substrate to top of glass lid bottom substrate to top of reticle	1.6 1.9	1.8 2.15	2.2 2.6		mm mm

### ASSEMBLY PART LIST

Pos	Name	Device	Type/Value	Tolerance	Comments	Package	Placement
01		PCB Base Material	FR4/0.8mm		HTg FR4	iC-WGC	
02		Reticle	Glass		various models, as defined by order		FRAME
03	U1	14-Bit Differential Scanning Opto Encoder Chip	iC-WG			8.71 x 2.97mm <sup>2</sup>	TOP

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### REVISION HISTORY

Rev	Notes	Pages affected
A1	Initial version (package release WGC*)	all
A2	Part list added; reticle specified	1, 2, 4
B1	Layout PCB-mark changed; dimension table item A8 changed	2, 3
C1	Internal release (A1, C2, D2, D4 corrected)	
D1	Revision of reflow soldering conditions (TG3 for RoHS); new dimensions A9, B3, J7; disclaimer updated	1, 2, 5
E1	Ordering Information (WGC-WG1L), Dimension Table (section Glass Lid/Reticle Placement) revised; disclaimer updated	all
E2	Physical Dimensions: item T1 corrected; Dimension Table: item T1 revised Disclaimer Update	2, 4, 5

### GENERAL HANDLING INSTRUCTIONS

After opening the dry pack, devices must be mounted within 8 hours (in factory conditions of maximum 30°C / 60% RH) or must be stored at <10% RH. Devices require baking before mounting if the Humidity Indicator Card shows >10% when read at 23°C ±5°C or if the conditions mentioned above are not met. Devices may be baked for 72 hours at 100°C using high-temperature device containers (trays).

#### Samples

Samples may not be subject for dry pack delivery, and, in that case, are not intended for reflow soldering.

#### Devices with glass lid

Devices are intended for manual soldering. When considering reflow soldering, please contact iC-Haus for special instructions in advance.

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