

Product Selection Guide 2021

Chipone Technology

OE Type (Dual Latch) LED driver IC

Part Number			ICND2037	ICND2037S	ICND2038S	ICND2046	ICND2047	ICND2049	ICND8390	
Output Channel			16							
Supply Voltage VDD			3.3V-5V				2.6V-5.5V		3.3V-5V	
Current Range/Per Channel @ VDD=5V			3mA-45mA	2mA-25mA	0.5mA-45mA	0.5mA-45mA	0.5mA-45mA	0.5mA-45mA	8-100mA	
Current Range/Per Channel @ VDD=3.3V			3mA-30mA	2mA-18mA	0.5mA-25mA	0.5mA-25mA	0.5mA-25mA	0.5mA-25mA	3-80mA	
Current Range/Per Channel @ VDD=2.8V			-				0.5mA-15mA		-	
OE (min) @VDD=5V			40ns						35ns	
Current Accuracy	Between Channels	Typ.	±1.8%	±1.8%	±0.7%			±3.0%		
	Between ICs	Typ.	±1.5%	±2.0%	±1.1%			±3.0%		
Output Maximum Ratings			10V						17V	
Low Knee (VDS=0.2V)			-	-	-	●	-	●	●	
Power Saving			-	●	-	-	-	-	●	
Current Gain (25%~100%)			-	-	●	●	●	●	●	
DCLK Dual Edge Trigger			-	-	-	-	●	-	-	
Image Improvement	Lower Ghosting Elimination		●	●	●	●	●	●	●	
	Dim Line at 1st scan Elimination		-	-	●	●	●	●	-	
	LED Short Caterpillar Issue Elimination		●	-	●	●	●	●	-	
	Low-Grayscale Enhancement		-	-	●	●	●	●	-	
	LED open Isolation		-	-	-	●	●	●	-	
	Color Shift Elimination		-	-	●	●	●	●	-	
LED Error Detection Report	LED Open		-	-	-	-	-	-	●	
	LED Short		-	-	-	-	-	-	●	
	LED Leakage		-	-	-	-	-	-	●	
	Rext Open		-	-	-	-	-	-	●	
	Rext Short		-	-	-	-	-	-	●	
	Over Temperature Flag		-	-	-	-	-	-	●	
ESD Capability (HBM)			±8KV	±8KV	±5KV	±6KV	±6KV	±8KV	±8KV	
ESD Capability (MM)			±600V	±600V	±400V	±500V	±500V	±400V	±600V	
Package	SSOP24-150-0.635		●	●	●	●	●	●	●	
	QFN24-4*4-0.5		-	-	●	-	-	-	●	

PWM Type LED driver IC

Part Number			ICND2150S	ICND2153	ICND2163	ICND2055	ICND2065	ICND2076	ICND2069	
Common Cathode / Anode LED Driver			Common Anode						Common Anode	Common Cathode
Output Channel			16						48	16
Supply Voltage			3.3V-5V						3.3V-5V	2.6V-5V
Time-Multiplexing			1-16	1-32	33-64	1-32	1-64	1-64	1-64	
PWM Color Depth			13/14 bit @16S	13 bit @32S 14 bit @16S	12 bit @64S	14 bit @32S 16 bit @16S	13 bit @64S 14 bit @45S	13 bit @64S 14 bit @45S	13 bit @64S 14 bit @45S	
Current Range @ VDD=5V			0.5mA-25mA	0.5mA-25mA	0.5mA-25mA	0.5mA-35mA	0.5mA-25mA	0.5mA-30mA	0.5mA-18mA	
Current Range @ VDD=3.3V			0.5mA-10mA	0.5mA-10mA	0.5mA-10mA	0.5mA-20mA	0.5mA-10mA	0.5mA-20mA	0.5mA-18mA	
Current Range @ VDD=2.8V			-			-	-	-	0.5mA-15mA	
IDD @ VDD=5V, Rext Floating			5mA			6mA	6mA	10mA	5mA	
Current Accuracy	Between Channels	Typ.	±1.0%						±1.0%	
	Between Ics	Typ.	±1.0%						±1.0%	
Recommended minimum LED pixel pitch application			2.6	1.2	1.2	0.9	0.75	0.4	0.75	
Output Maximum Rating			10V						10V	
Features	Low Knee		●	-	-	-	-	-	-	
	Current Gain		●	●	●	●	●	●	●	
	Lower Ghosting Elimination		●	●	●	●	●	●	●	
	dim line at 1st scan Elimination		●	●	●	●	●	●	●	
	Failure Open LED Cross Issue		●	●	●	●	●	●	●	
	External GCLK		●	●	●	-	-	-	-	
	High Refresh (PLL Inside)		-	-	-	●	●	●	●	
	Power Saving		-	●	●	●	●	●	●	
	Dyamic Power Saving		-	-	-	●	●	●	●	
	Coupling Issue improvement		-	-	-	●	●	●	●	
Between Two Modules Coupling Issue		-	-	-	●	●	●	●		
DCLK Dual Edge Trigger		-	-	-	-	-	●	-		
ESD Capability (HBM)			±4KV	±4KV	±5KV	±5KV	±5KV	±5KV	±4KV	
ESD Capability (MM)			±400V						±600V	±500V
Package	SSOP24-150-0.635		●	●	●	●	●	-	●	
	QFN24-4*4-0.5		-	●	-	●	●	-	●	
	QFN56-		-	-	-	-	-	●	-	

ICND2159

16CH, 0.5mA
25mA/ per CH @ VDD=2.8V
1-32s Time-Multiplexing
ICND2153
Common Cathode Version
Low knee Function

MP

ICND3069

16CH, 0.5mA
25mA/ per CH@ VDD=5V
Common Cathode LED Solution
Support 1-128s Time-Multiplexing
ILED Correction Processing
PLL inside

 2022 Q1/E
Release

ICND3065

16CH, 0.5mA
25mA/ per CH@ VDD=5V
Common Anode LED Solution
Support 1-128s Time-Multiplexing
ILED Correction Processing
PLL inside

 2021 12/E
Release

ICND2079

48CH, 0.15mA
6mA/ per CH@ VDD=2.5V
Support 1-96s Time-Multiplexing
ICND2076 Common Cathode version
PLL inside
PWM

 2022 Q2/E
Release

Power Switch (MOSFET)

Part Number	ICND2015	ICND2017	ICND2013	ICND2018	ICND3018	ICND2019
MOS Type	P-MOS					N-MOS
Output Channel	2	4	8	8	16	8
Maximum Current / Per Channel	3A	2.5A	2.5A	2.5A	2A	2.5A
Rds(On)	75mΩ	100mΩ	100mΩ	100mΩ	150mΩ	100mΩ
De-Ghosting Level	-	●	●	●	●	●
Data Transmissions Decoder	-	138	138	Serial	Serial	Serial
Product Application	Outdoor	Indoor	Indoor	Indoor	Fine Pitch	Common Cathode
Image Quality Improvement	Upper Ghosting Effect Elimination / Short LED Caterpillar Elimination / Reverse Voltage Reduction / LED Protection					
Package	SOP 8	●	-	-	-	-
	SOP 16	-	-	●	●	●
	SSOP 16	-	●	-	-	-
	SSOP 24	-	-	-	-	●
	QFN 16	-	●	-	●	-
	QFN 24	-	-	-	-	●
SOT23-6	●	-	-	-	-	-

ICND3019
16CH, 2A/CH
Serial (595) Decoder
Programmable De Ghosting Level
Common Cathode
LED Time Multiplexing
For Fine Pitch Application
2021 07/E
Release

ICND3015
2CH, 3.5A/CH
3:8 Decoder
Fixed De-Ghosting Level (0.35* VDD)
Common Anode
LED Time-Multiplexing For
Outdoor Application
2021 09/E
Release

MOS Sharing Type LED Driver IC

Part Number			ICND2200BN	ICND2210
Output Channel			24	24
Power Switching Inside			16	16
Supply Voltage VDD			3.3V-5V	2.8V-5V for V_R 3.8V-5V for V_G and V_B 3.8V-5V for VDD_ROW
PWM Color Depth			16 bit	
Common Anode/Cathode LED Driver			Common Anode	Comm Cathode
Current Rage @ VDD=5V			0.5mA-20mA	0.15mA-6mA
Current Rage @ VDD=3.3V			0.5mA-10mA	0.15mA-6mA
Current Rage @ VDDR=2.8V-5V			-	0.15mA-6mA
Current	Between	Typ.	±1%	
Accuracy	Between Ics	Typ.	±1%	
Output Maximum Ratings			10V	10V
Maximum Chips in Series			64	64
Data Transmission			SPI Like	SPI Like
Current Gain			RGB Current Gain	RGB Current Gain
ESD Capability (HBM)			±7KV	±7KV
ESD Capability (MM)			±400V	
LED Application			P0.5 above	P0.5 above
Package	QFN20		-	-
	QFN52		●	●
	BGA104		-	-

ICND2260
120CH+48NMOS
Min LVDS/ TTL
Common Cathode LED Solution
Package: BGA
Mini/Micro LED Solution
2022 Q1/E
Release

Cluster Type LED Driver IC

Part Number			ICND2110	ICND2112
Output Channel			12	6
Power Switching Inside			-	8
Supply Voltage VDD			3.3V-5V	3.3V-5V
PWM Color Depth			16 bit	
Common Anode/Cathode LED Driver			Common Anode	
Current Range @ VDD=5V			0.5mA-25mA	2mA-30mA
Current Range @ VDD=3.3V			0.5mA-15mA	2mA-15mA
Current Range @ VDD=3.8V-2.8V			-	-
Current Accuracy	Between Channels	Typ.	±1%	±1%
		Max.	±1.5%	
	Between ICs	Typ.	±1%	
		Max.	±3%	
Output Maximum Rating			10V	10V
Maximum Chips in Series			512 above	128
Data Transmission			SPI	SPI
Current Gain			-	GB Current Gain R by External Resistor (BN Version only)
ESD Capability (HBM)			±8KV	
ESD Capability (MM)			±400V	
LED Application			LED Cluster	LED Cluster
Package	QFN20		•	•
	QFN52		-	-
	BGA104		•	•



Thank You

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