

阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .

LVHSTL TO CMOS CLOCK DIVIDER

ICS558A-02

Description

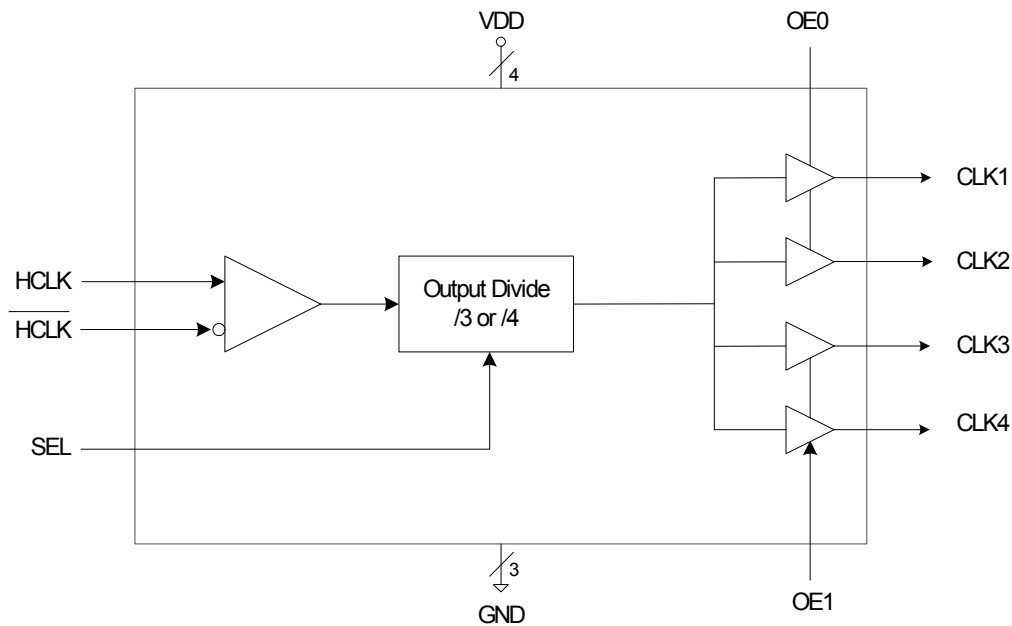
The ICS558A-02 accepts a high-speed LVHSTL input and provides four CMOS low skew outputs from a selectable internal divider (divide by 3, divide by 4). The four outputs are split into two banks of two outputs. Each bank has a separate output enable to tri-state the output buffers.

The ICS558A-02 is a member of the IDT Clock Blocks™ family of clock generation, synchronization, and distribution devices.

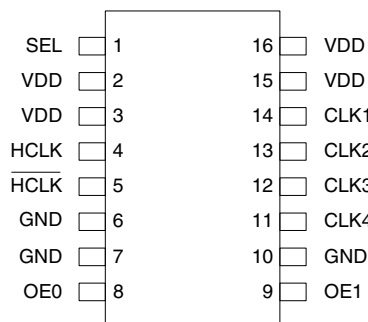
Features

- 16-pin TSSOP package
- LVHSTL inputs
- Accepts up to 250 MHz input frequency
- Four low skew (<250 ps) outputs
- Selectable internal divider of 3 or 4
- Operating voltage of 3.3 V
- Lead-free, RoHS compliant package

Block Diagram



Pin Assignment



16 Pin 173 Mil (0.65mm) TSSOP

Tri-State Table

OE1	OE0	CLK 1, CLK 2	CLK 3, CLK 4
0	0	Tri-state	Tri-state
0	1	Clock ON	Tri-state
1	0	Tri-state	Clock ON
1	1	Clock ON	Clock ON

Output Divide Selection

SEL	Output Divide
0	/3
1	/4

Pin Descriptions

Pin Number	Pin Name	Pin Type	Pin Description
1	SEL	Input	Select pin for output divider. See table above. Internal pull-up to VDD.
2	VDD	Power	Connect to +3.3 V.
3	VDD	Power	Connect to +3.3 V.
4	HCLK	Input	Differential LVHSTL input (true input).
5	HCLK	Input	Differential LVHSTL input (complimentary input).
6	GND	Power	Connect to ground.
7	GND	Power	Connect to ground.
8	OE0	Input	Output enable for CLK1 and CLK2. See table above. Internal pull-up to VDD.
9	OE1	Input	Output enable for CLK3 and CLK4. See table above. Internal pull-up to VDD.
10	GND	Power	Connect to ground.
11	CLK4	Output	Low skew clock output.
12	CLK3	Output	Low skew clock output.
13	CLK2	Output	Low skew clock output.
14	CLK1	Output	Low skew clock output.
15	VDD	Power	Connect to +3.3 V.
16	VDD	Power	Connect to +3.3 V.

Absolute Maximum Ratings

Stresses above the ratings listed below can cause permanent damage to the ICS558A-02. These ratings, which are standard values for IDT commercially rated parts, are stress ratings only. Functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods can affect product reliability. Electrical parameters are guaranteed only over the recommended operating temperature range.

Item	Rating
Supply Voltage	4.6 V
All Inputs and Outputs	-0.5 V to VDD+0.5 V
Ambient Operating Temperature	0 to +70 °C
Storage Temperature	-65 to +150 °C
Junction Temperature	125 °C
Soldering Temperature	260 °C

Recommended Operation Conditions

Parameter	Min.	Typ.	Max.	Units
Ambient Operating Temperature	0		+70	°C
Power Supply Voltage (measured in respect to GND)	+3.15	+3.3	+3.5	V

DC Electrical Characteristics

VDD=3.3 V ±5%, Ambient temperature 0 to +70°C, unless stated otherwise stated.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Operating Voltage	VDD		3.135	3.3	3.465	V
Operating Supply Current	IDD	No load, 100 MHz		60		mA
Input High Voltage	V _{IH}	OE pins	VDD-0.5		VDD	V
Input Low Voltage	V _{IL}	OE pins			0.5	V
Input High Voltage	V _{IH}	HCLK	V _x + 0.1		1.2	V
Input Low Voltage	V _{IL}	HCLK	-0.3		V _x - 0.1	V
Peak to Peak Input Voltage		HCLK	0.3		1.0	V
HCLK Input Leakage Current	I _{IL}		-20		20	µA
Input Common Mode Voltage	V _x	Input Common Mode	0.68		0.90	V
Output High Voltage	V _{OH}	I _{OH} = -14.5 mA	2.4			V
Output Low Voltage	V _{OL}	I _{OL} = 9.4 mA			0.4	V
Nominal Output Impedance	Z _O			20		Ω
Internal Pull-up Resistor	R _{PU}			250		kΩ
Input Capacitance	C _{IN}			7		pF

AC Electrical Characteristics

VDD = 3.3 V \pm 5%, Ambient Temperature 0 to +70°C, unless stated otherwise stated.

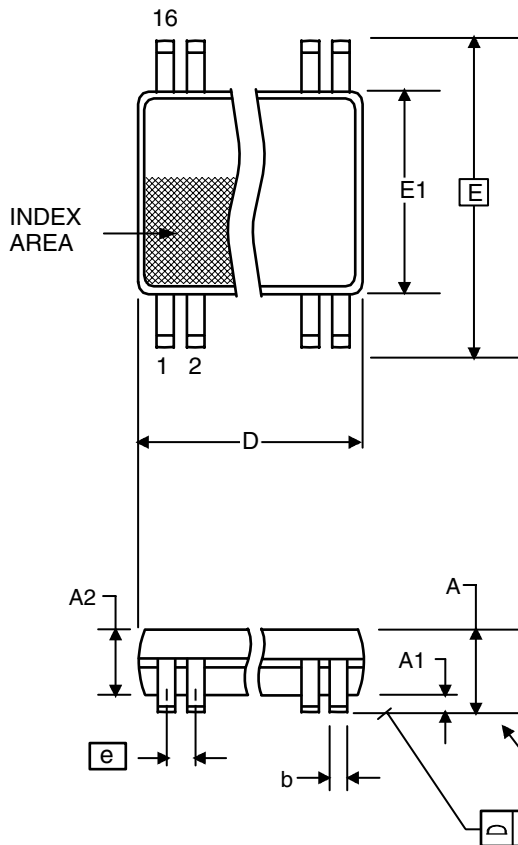
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Input Frequency			0		250	MHz
Output Rise Time	t_{OR}	0.4 to 2.4 V, $C_L=30$ pF	0.5	1.1	2.0	ns
Output Fall Time	t_{OF}	2.4 to 0.4 V, $C_L=30$ pF	0.5	1.0	2.0	ns
Skew (between any two output clocks)		30 pF load		0	250	ps
Propagation Delay				9	12	ns
Output Clock Duty Cycle		at VDD/2, $C_L=30$ pF	45	50	55	%

Thermal Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Thermal Resistance Junction to Ambient	θ_{JA}	Still air		78		°C/W
	θ_{JA}	1 m/s air flow		70		°C/W
	θ_{JA}	3 m/s air flow		68		°C/W
Thermal Resistance Junction to Case	θ_{JC}			37		°C/W

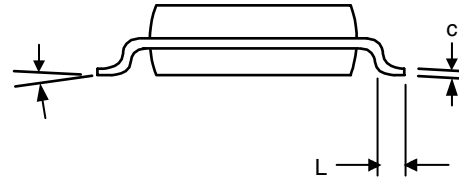
Package Outline and Package Dimensions (16-pin TSSOP, 4.40 mm Body, 0.65 mm Pitch)

Package dimensions are kept current with JEDEC Publication No. 95, MO-153



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	--	1.20	--	0.047
A1	0.05	0.15	0.002	0.006
A2	0.80	1.05	0.032	0.041
b	0.19	0.30	0.007	0.012
C	0.09	0.20	0.0035	0.008
D	4.90	5.1	0.193	0.201
E	6.40 BASIC		0.252 BASIC	
E1	4.30	4.50	0.169	0.177
e	0.65 Basic		0.0256 Basic	
L	0.45	0.75	0.018	0.030
α	0°	8°	0°	8°
aaa	--	0.10	--	0.004

*For reference only. Controlling dimension in mm.



Ordering Information

Part / Order Number	Marking	Shipping Packaging	Package	Temperature
558AG-02LN	558AG02LN	Tubes	16-pin TSSOP	0 to 70° C
558AG-02LNT	558AG02LT	Tape and Reel	16-pin TSSOP	0 to 70° C

*LN denotes a lead-free, RoHS compliant package.

While the information presented herein has been checked for both accuracy and reliability, Integrated Device Technology (IDT) assumes no responsibility for either its use or for the infringement of any patents or other rights of third parties, which would result from its use. No other circuits, patents, or licenses are implied. This product is intended for use in normal commercial applications. Any other applications such as those requiring extended temperature range, high reliability, or other extraordinary environmental requirements are not recommended without additional processing by IDT. IDT reserves the right to change any circuitry or specifications without notice. IDT does not authorize or warrant any IDT product for use in life support devices or critical medical instruments.

Innovate with IDT and accelerate your future networks. Contact:

www.IDT.com

For Sales

800-345-7015
408-284-8200
Fax: 408-284-2775

For Tech Support

www.idt.com/go/clockhelp

Corporate Headquarters

Integrated Device Technology, Inc.
www.idt.com



www.IDT.com