Not Recommended For New Designs

BURR - BROWN®

VSP3100

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14-Bit, 10MHz CCD/CIS SIGNAL PROCESSOR

FEATURES

- INTEGRATED TRIPLE-CORRELATED DOUBLE SAMPLER
- OPERATION MODE SELECTABLE: 1-Channel, 3-Channel, 10MSPS (typ), CCD/CIS Mode
- PROGRAMMABLE GAIN AMPLIFIER: 0dB to +13dB
- SELECTABLE OUTPUT MODES: Normal/Demultiplexed
- OFFSET CONTROL RANGE: ±400mV
- +3V, +5V Digital Output
- LOW POWER: 450mW (typ)
- LQFP-48 SURFACE-MOUNT PACKAGE

DESCRIPTION

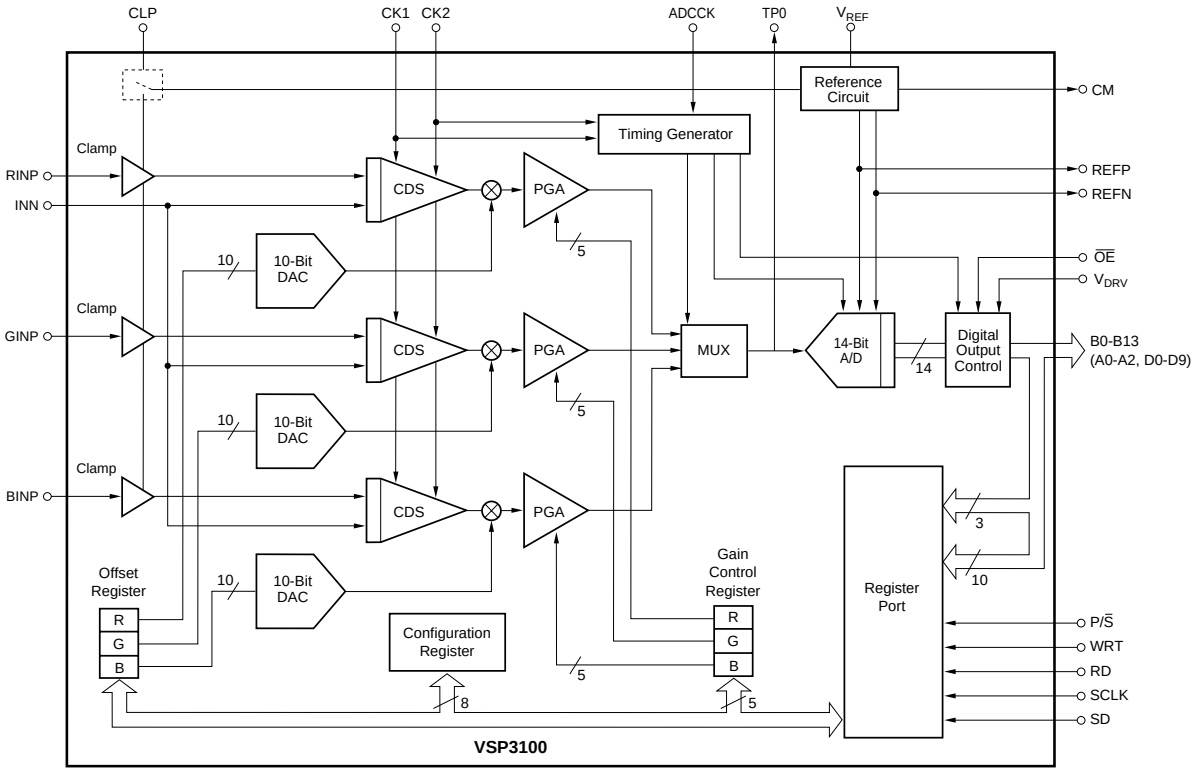
The VSP3100 is a complete CCD/CIS image processor which operates from a single +5V supply.

This complete image processor includes three Correlated Double Samplers (CDS) and Programmable Gain Amplifiers (PGA) to process CCD signals.

These three channel inputs also allow Contact Image Sensor (CIS) inputs.

The VSP3100 is an interface compatible with the VSP3000 which is 12-bit one-chip product.

The VSP3100 can be operated from 0°C to +85°C and is available in an LQFP-48 package.



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PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
VSP3100Y	NRND	LQFP	PT	48	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 85	VSP3100Y	
VSP3100Y/2K	NRND	LQFP	PT	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 85	VSP3100Y	
VSP3100Y/2KG4	NRND	LQFP	PT	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 85	VSP3100Y	
VSP3100YG4	NRND	LQFP	PT	48	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 85	VSP3100Y	

(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

(6) Lead/Ball Finish - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead/Ball Finish values may wrap to two lines if the finish value exceeds the maximum column width.

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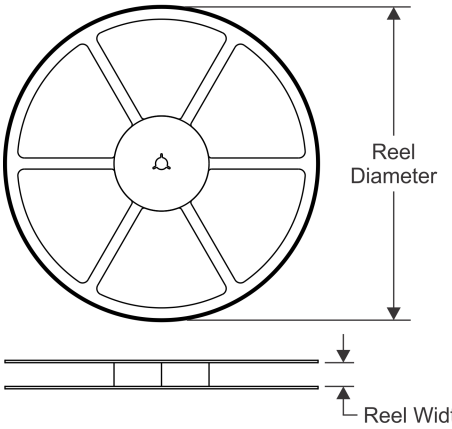
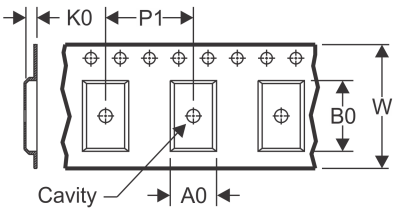
TAPE AND REEL INFORMATION

REEL DIMENSIONS

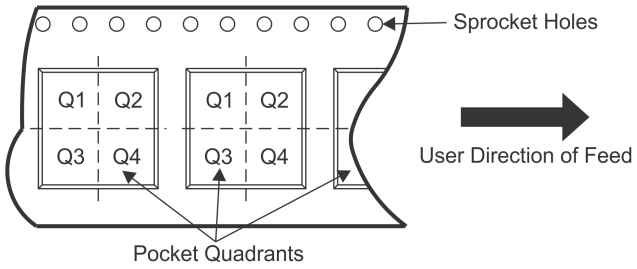


TAPE DIMENSIONS



A0	Dimension designed to accommodate the component width
B0	Dimension designed to accommodate the component length
K0	Dimension designed to accommodate the component thickness
W	Overall width of the carrier tape
P1	Pitch between successive cavity centers

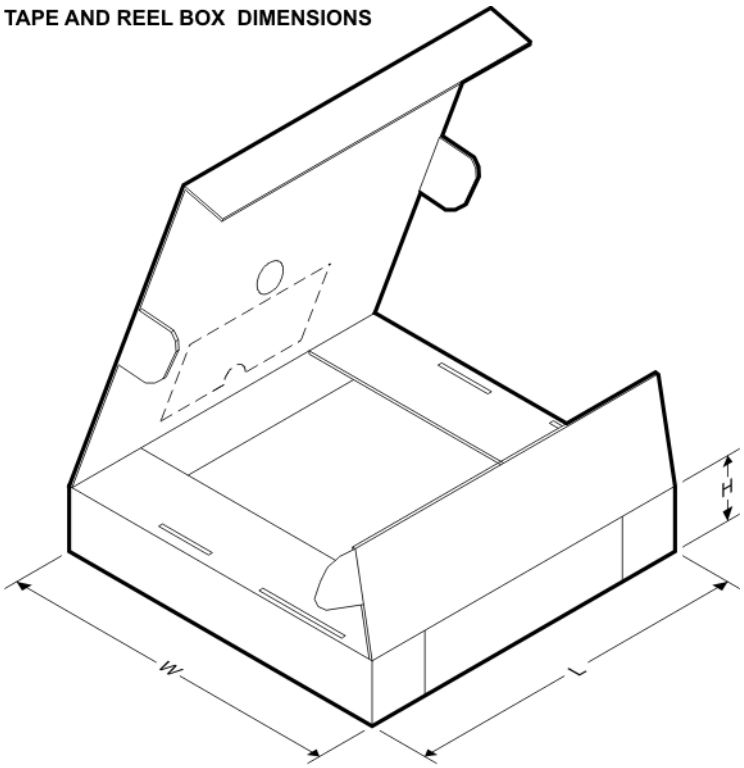
QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
VSP3100Y/2K	LQFP	PT	48	2000	330.0	17.4	9.5	9.5	2.0	12.0	16.0	Q1

TAPE AND REEL BOX DIMENSIONS



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
VSP3100Y/2K	LQFP	PT	48	2000	367.0	367.0	38.0

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