TOSHIBA
Leading Innovation

August 2012

SEMICONDUCTOR GENERAL CATALOG

Sensors/Image Pickup Devices

Image Sensors
Magnetic Sensors

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Image Sensors

CCD Linear Image Sensors

Part Number	Style	Photosenstitive Pixels (Picture Element)			Sensitivity (Typ.) (V/lx·s)	Data Rate (Max) (MHz)	Other Features
		Type/Lamp	Effective Pixels	Size (μm)			
TCD1103GFG ☆	Lens reduction type	B/W	1500	5.5 x 64	79	2	Digital shutter Sample-and-hold
TCD1254GFG ☆			2500	5.25 x 64	103	2	
TCD1706DG			7400	4.7 x 4.7	15	25 x 4	
TCD1710DG			7500 x 2 Line		15	15 x 2	
TCD1711DG			7450		15	30 x 2	
TCD2563BFG		Color	5340 x 4 Line	5.25 x 8.4	R:22.6, G:28.0, B:17.0	Color:25, B/W:25 x 2	TDI
TCD2564DG			5400 x 3 Line	7 x 7	R:9.6, G:8.9, B:3.8	30 x 2	
TCD2565BFG			5400 x 4 Line	5.25 x 5.25	R:10.2, G:9.2, B:4.0, B/W:14.7	Color:35, B/W:35 x 2	2-line distance (color)
TCD2566BFG			5340 x 4 Line	Color:5.25 x 6.825 B/W:5.25 x 8.4	R:31.7, G:32.8, B:19.9, B/W:59.4	Color:35, B/W:35 x 2	TDI
TCD2711DG			7500 x 3 Line	9.325 x 9.325	R:18.9, G:20.4, B:13.4	35 x 2	
TCD2712DG			7500 x 3 Line	9.325 x 9.325	R:14.1, G:22.2, B:9.1	30 x 4	
TCD2713DG			7500 x 4 Line	9.325 x 9.325	R:13.1, G:18.4, B:7.6, B/W:23.8	Color:35 x 2, B/W:35 x 4	2-line distance (color)
TCD2715DG			7450 x 3 Line	4.7 x 4.7	R:5.7, G:5.2, B:2.2	30	
TCD2716DG			7450 x 3 Line	4.7 x 4.7	R:9.1, G:8.5, B:3.8	30 x 2	
TCD2717BFG			7500 x 4 Line	4.7 x 4.7	R:8.0, G:7.2, B:3.1	Color:35, B/W:35 x 2	2-line distance (color)
TCD2720BFG			7500 x 4 Line	4.7 x 4.7	R:8.0, G:7.2, B:5.4, B/W:11.5	Color:35 x 2, B/W:35 x 4	2-line distance (color)
TCD2722BFG			7450 x 3 Line	4.7 x 4.7	R:7.2, G:6.9, B:2.9	35 x 2	
TCD2915BFG			10680 x 3 Line	2.625 x 8.4	R:5.6, G:7.0, B:4.3	20	
TCD2916BFG			10680 x 4 Line		R:6.7, G:7.0, B:4.3, B/W-H:20.6, B/W-H:12.4	Color:25, B/W:25 x 2	
TCD2964BFG			21360 x 6 Line	2 x 4	R:1.3, G:1.5, B:0.7	10	Overflow drain

☆: Dry-packed

・ The products shown in bold are also manufactured in offshore fabs.

・ Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

CMOS Area Image Sensors

Part Number	Package	Features			
		Optical Format (Inches)	Total Pixel Count (PIX)	Color/Mono	Digital Signal Processor
TCM9001MD	Camera module	1/10	648 (H) x 492 (V) (VGA)	Color (RGB)	Yes
TCM9200MD	Camera module	1/4	1648 (H) x 1216 (V) (2.0M)	Color (RGB)	Yes

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Package	Resolution (DPI)	Applications	Remarks
16PIN GLCC	—	Barcode readers	
22PIN Cerdip	A3 600	Photocopiers, scanners	
22PIN CLCC	A4 600	Photocopiers, color scanners	
22PIN Cerdip			
22PIN CLCC			
22PIN CLCC			
68PIN Cerdip	A3 600		
22PIN Cerdip			
32PIN CLCC			
32PIN CLCC	A3 600		
32PIN CLCC	A3 600		
22PIN CLCC	A4 1200		
32PIN CLCC	A4 4800	Color scanners	

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Magnetic Sensors

Magnetic Sensors
(Digital Output)

Part Number	Pole	Output	Supply Voltage V_{CC} (V)			Supply Current @ V_{CC} = 2.3 to 2.7 V						Magnetic Flux Density						Operating Frequency (Hz)			Package
						Average Current I_{CC} (μA)			Operating Current $I_{CC}ON$ (mA)			Operating Point |Bon| (mT)			Releasing Point |Boff| (mT)						
			min	typ.	max	min	typ.	max	min	typ.	max	min	typ.	max	min	typ.	max	min	typ.	max	
TCS10SPU	S	Push-pull	2.3	—	3.6	—	5.5	9.5	—	0.7	1.3	—	1.8	2.5	0.3	0.8	—	—	25	—	UFV
TCS10SLU		Open-drain	2.3	—	3.6	—	5.5	9.5	—	0.7	1.3	—	1.8	2.5	0.3	0.8	—	—	25	—	
TCS11SLU		Open-drain with inverting output	2.3	—	3.6	—	5.5	9.5	—	0.7	1.3	—	1.8	2.5	0.3	0.8	—	—	25	—	
TCS10NPU	N	Push-pull	2.3	—	3.6	—	5.5	9.5	—	0.7	1.3	—	1.8	2.5	0.3	0.8	—	—	25	—	
TCS10NLU		Open-drain	2.3	—	3.6	—	5.5	9.5	—	0.7	1.3	—	1.8	2.5	0.3	0.8	—	—	25	—	
TCS11NLU		Open-drain with inverting output	2.3	—	3.6	—	5.5	9.5	—	0.7	1.3	—	1.8	2.5	0.3	0.8	—	—	25	—	
TCS10DPU	S/N	Push-pull	2.3	—	3.6	—	8.5	13.2	—	0.7	1.3	—	1.8	2.5	0.3	0.8	—	—	25	—	
TCS10DLU		Open-drain	2.3	—	3.6	—	8.5	13.2	—	0.7	1.3	—	1.8	2.5	0.3	0.8	—	—	25	—	
TCS11DLU		Open-drain with inverting output	2.3	—	3.6	—	8.5	13.2	—	0.7	1.3	—	1.8	2.5	0.3	0.8	—	—	25	—	
TCS20DPR		Push-pull	2.3	—	3.6	—	▲8.5	—	—	▲0.8	—	—	3.4	4.4	0.9	2.0	—	—	25	—	SOT-23F
TCS20DLR		Open-drain	2.3	—	3.6	—	▲8.5	—	—	▲0.8	—	—	3.4	4.4	0.9	2.0	—	—	25	—	
TCS20DPC		Push-pull	2.3	—	3.6	—	▲8.5	—	—	▲0.8	—	—	2.6	3.8	0.3	1.2	—	—	25	—	CST6C
TCS20DLC		Open-drain	2.3	—	3.6	—	▲8.5	—	—	▲0.8	—	—	2.6	3.8	0.3	1.2	—	—	25	—	
TCS30DPC*		Push-pull	1.6	—	3.6	—	●0.4	●9.5	—	●0.4	●0.9	—	—	4.4	0.5	—	—	—	25	—	
TCS30DLC*		Open-drain	1.6	—	3.6	—	●4.6	●4.5	—	●0.4	●0.9	—	—	4.4	0.5	—	—	—	25	—	

Note: The UFV package measures 2.0 x 2.1 x 0.7 mm and is a variant of SC-88A.

*: New product

●: When V_{CC} = 1.6 V

▲: When V_{CC} = 2.5 V

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