Project: ***DM0250TG***
Current Revision: ***R1M1E1***

DM0250TG Revision History:

Date	Revision	Reason for Change	Changes Implemented
12/30/2020	BG0250TG-> R0M0E0	1) ESD protection 2) FFC connector stronger mechanics 3) Outdated stackup	1) Added protection diodes to MIPI lines 2) Changed FFC with Molex 505278 series 3) Standarized 4L stackup
02/12/2020	R0M0E0 -> R1M1E1	1) Make FFC connectors type and pinout ArduCam standard so that camera modules will be compatible with DM1090FFC 2) Library and components not common w/ LuxonisMaster and some has bigger size footprint than needed	1)Changed FFC connectors to ArduCam standard pinout, updated all connections to the conenctors. CBA can be connected with same side 26pin FFC to DM1090FFC 2) Updated all componets using LuxonisMaster libraries 3) Removed unecessary components from design (10k pull-ups on LDO enable connected directly) made downsizing of footprints for easier layout

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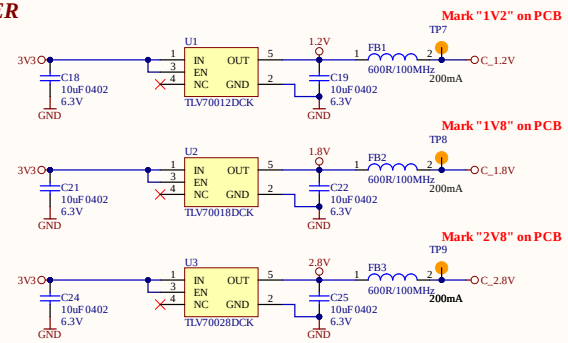
Drawn by: ***David Malovrh***				

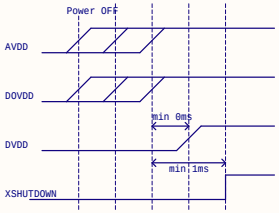
POWER



Add capacitor to ground to make RC timing circuit for EN pins in order to obtain the appropriate power supply sequencing if ncessary

Mark "GND" on PCB

Power Supply Sequence & Requirements



1. AVDD rising can occur before or after DOVDD rising as long as they are rising before XSHUTDOWN rising
2. XSHUTDOWN is pulled up after AVDD and DOVDD are stable
3. DVDD rises after DOVDD, but before XSHUTDOWN is pulled high

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DM0250TG

Revision: R1M1E1

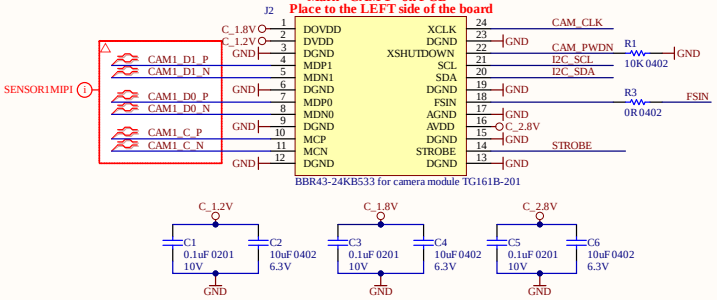
MODULE CONNECTOR

MODULE & SENSOR INFORMATION			
MODULE	TG161B-201 OR AN01V32-0JG	I2C Clock Rate	400 kHz Max
SENSOR	OV09282-GA4A B&W 1 Mega pixel CMOS 1/4 inch	I2C Address (8 bits)	0x60(W) 0xC1(R)
MAX RESOLUTION	1280X800	Sensor Clock Input	6 - 64 MHz (24 MHz typ.)

Supply Information

Supply Name		Voltage	Max Current
Module	Sensor		
DOVDD	VDD-IO	C_1.8V	2.5mA
DVDD	VDD-D	C_1.2V	52mA
AVDD	VDD-A	C_2.8V	24mA

Mark "CAM 1" on PCB
Place to the LEFT side of the board

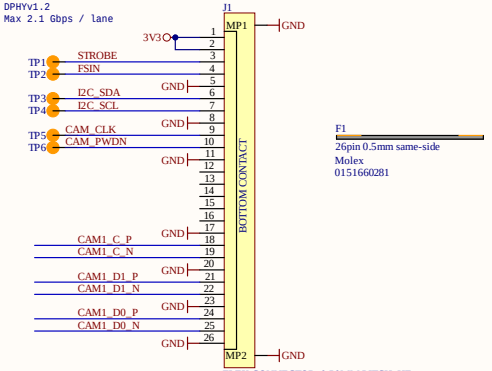


BBR43-24KB533 for camera module TG161B-201

The Camera connector wraps around the board.
- The board thickness is 1.60mm.
- The thickness of the module's flex circuit is 0.16mm according to my calipers, so a 5x bend radius on that is 0.8mm radius so 1.6mm diameter. So bending to be flush w/ the board is technically OK according to general rules of thumb (5x FPCB thickness bend radius).
- If bending to flush with board, this takes pi/2 * 1.6 (since it's a half-circle) off the length of the connector, so 2.623mm off the connector.
- Probably want to plan on much more than that, to leave a bit of slack. The Google Coral camera left approximately 2.8mm of slack, for example.
- So going by that, 2.623mm absolute minimum + 2.8mm = 5.423mm of FFC length do do the 180-degree bend, which let's round to 5.5mm to keep things clean on the PCB.

FFC CONNECTION

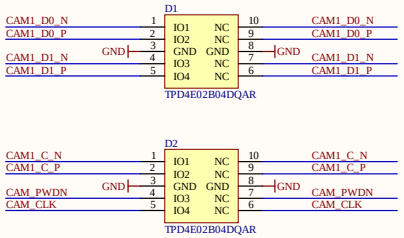
MIPI Lanes:
DPHYv1.2
Max 2.1 Gbps / lane

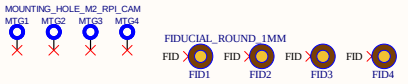


F1
26pin 0.5mm same-side
Molex
0151660281

FLEX CONNECTOR, 0.50MM PITCH, HE

ESD PROTECTION





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