

# TOSHIBA

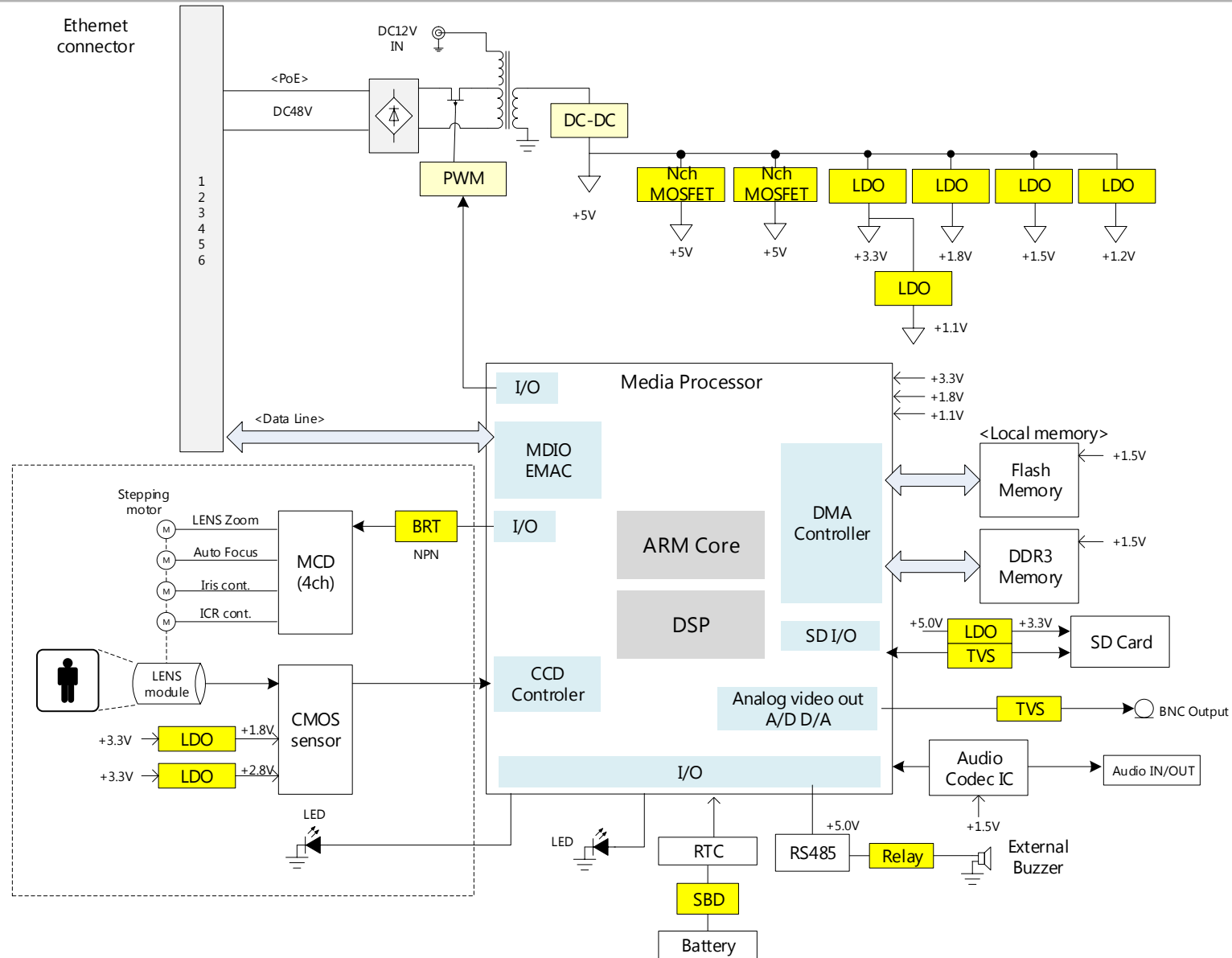
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## Surveillance Camera

### Application Block Diagram - ABD -

Toshiba Electronic Devices & Storage Corporation  
Discrete Application Engineering Center

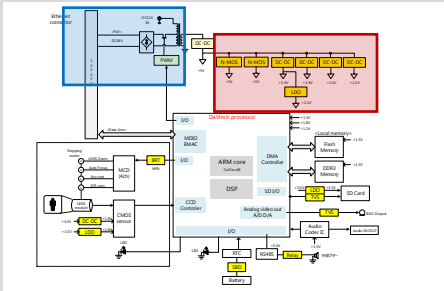
# ABD – Surveillance Camera



# Power supply line Recommended Devices

Navigation Window

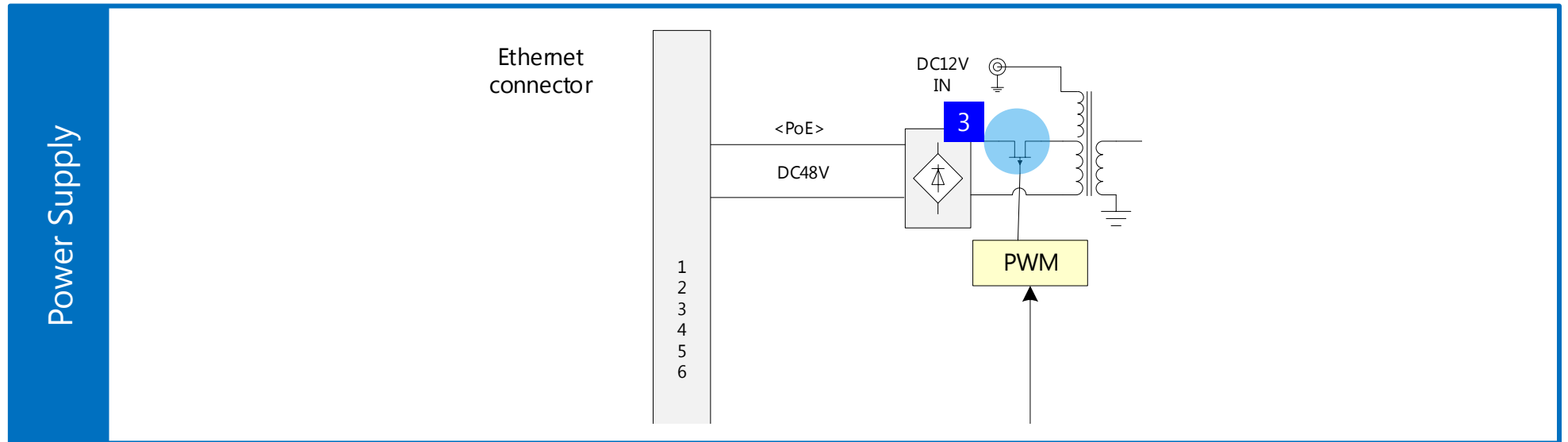
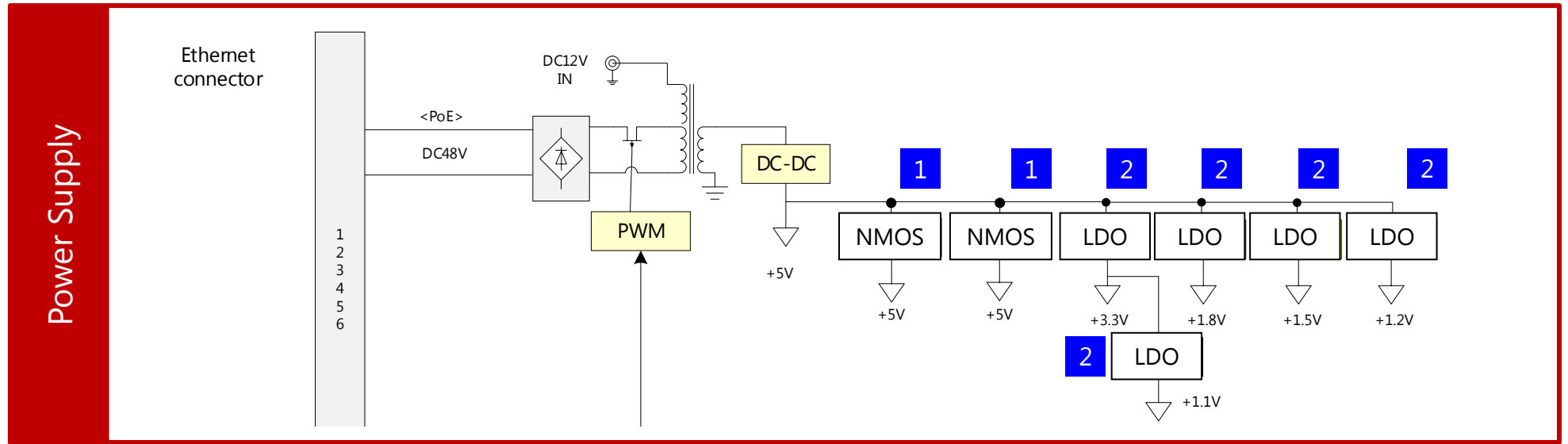
Map



Tips for Device Selection

The VDSS rating is important in selecting MOSFETs. Application of a voltage exceeding VDSS might result in the destruction of a MOSFET.

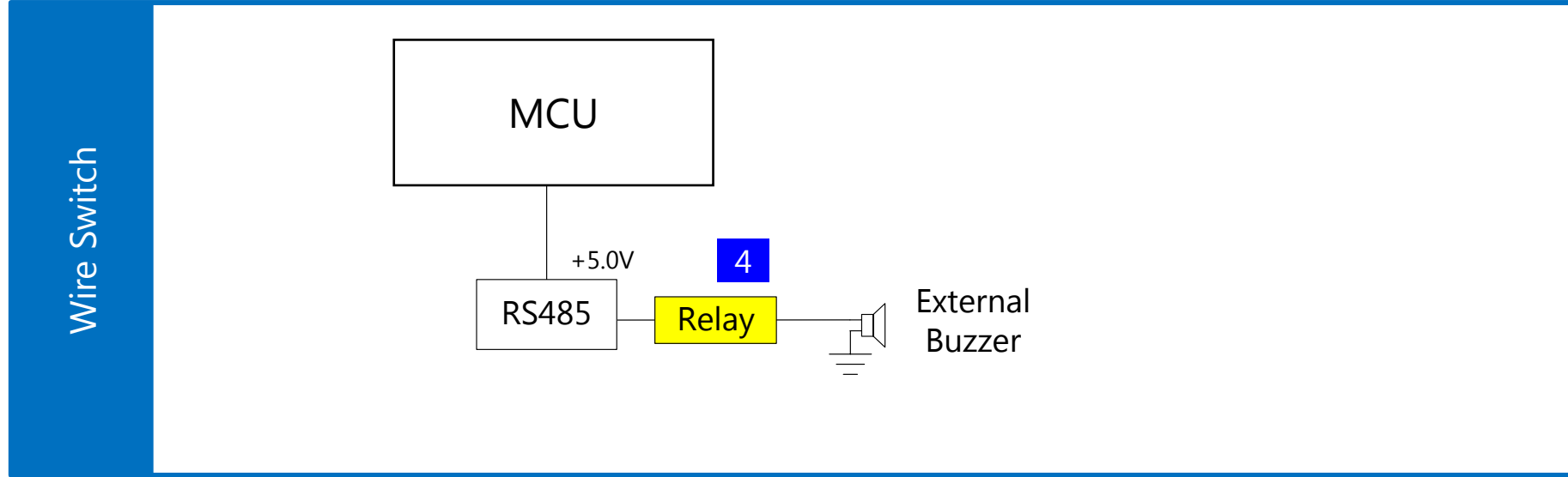
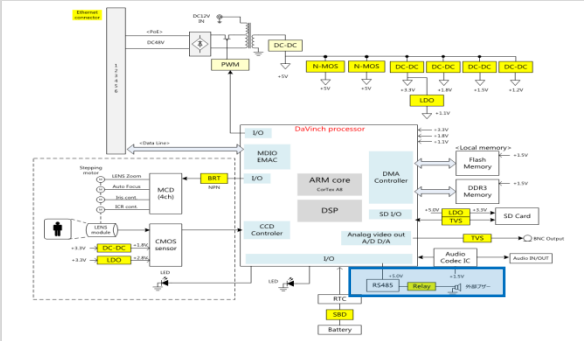
MOSFETs with high VDSS ratings tend to have large on-state resistance, RDS(ON).



# Analog Signal line Recommended Devices

Navigation Window

Map



Tips for Device Selection

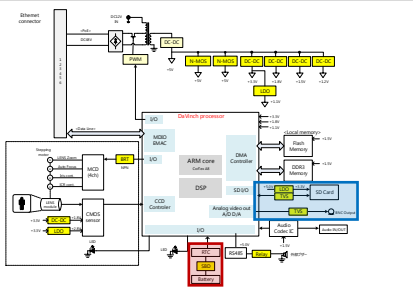
✓ LED current, output voltage of MCU and base-emitter voltage, DC current gain of the transistor are important in selecting transistor for LED drive.

✓ Small package saves board space

# Power supply line Recommended Devices

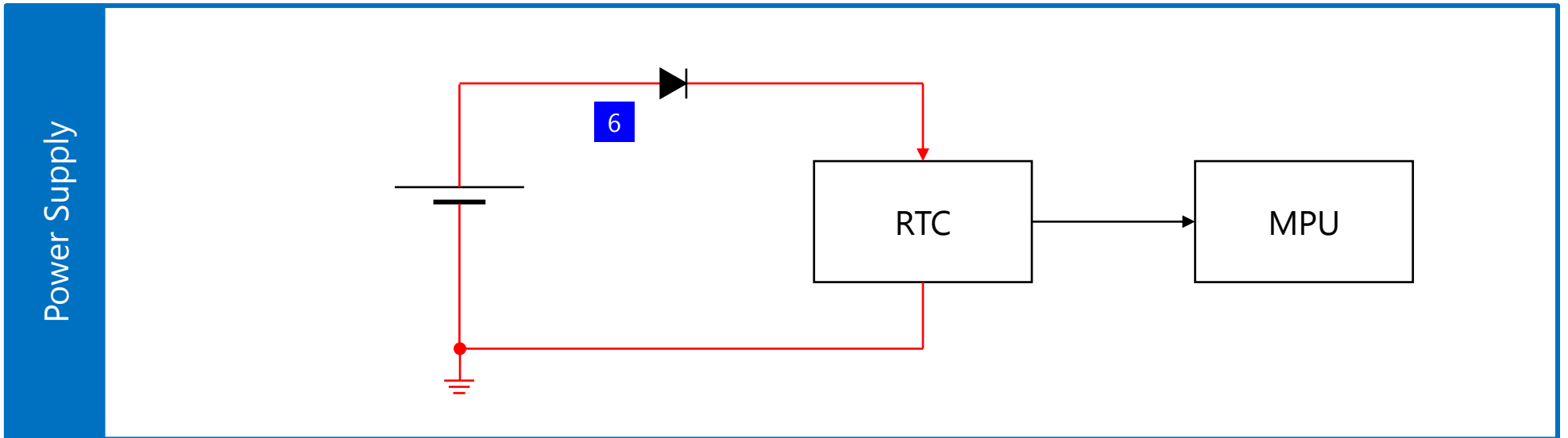
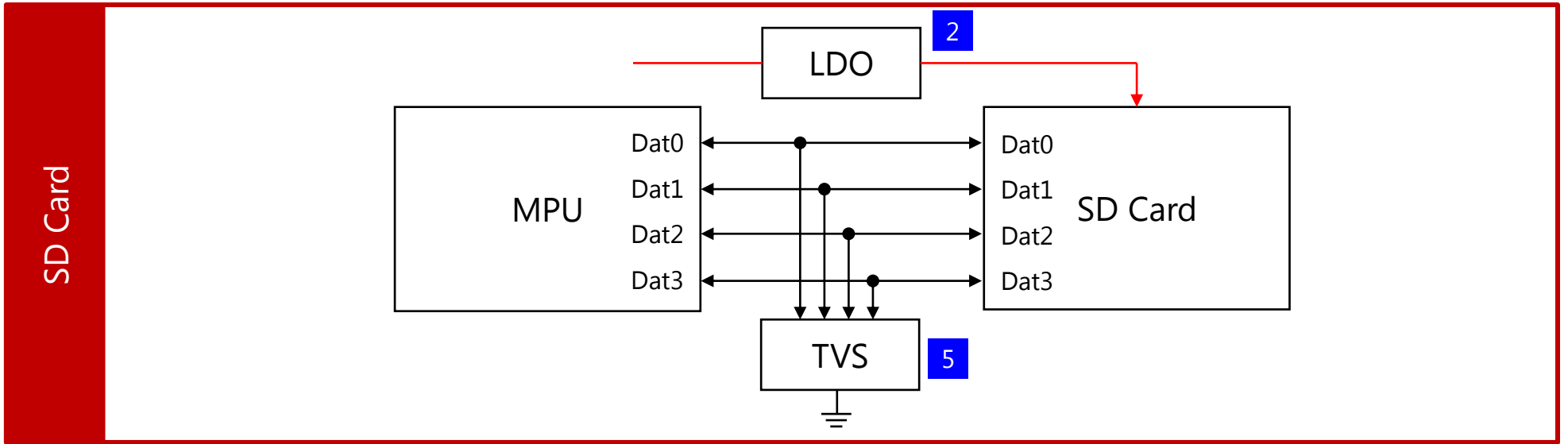
Navigation Window

Map





Tips for Device Selection

- PSRR is key performance of LDO for SD memory card interface
- TVS diodes for protecting high-speed signal lines from external ESD.
- Low VF and Low IR are needed for SBD




# MOSFET 1 3

Device Type		MOSFET	MOSFET
Proposal Product		SSM3K376R	TPH5900CNH
Package		 SOT-23F	 SOP Advance
	Size [mm]	2.9×2.4×0.8	10×28×4.5
Characteristic	Polarity	N-ch	N-ch
	VDSS [V]	30	150
	ID [A]	4(DC)	9(DC)
	PD [W]	1	42
	Ciss (Typ) [pF]	200	460
	RDS(ON) (Max) [mΩ]	56 at VGS=4.5V	59 at VGS=10V
VGSMerit		1.8V drive	Small R <sub>DS(ON)</sub> High-speed switching

# LDO Regulator

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Device Type	LDO	
Proposal Product	TCR2FE series	
Package	 SMV	
Characteristic	Size [mm]	2.9×2.8×1.1
	VIN (Max) [V]	6.0
	VOUT [V]	1.0 to 5.0
	IOUT (Min) [A]	0.2
	PD [W]	0.58
	IB (Typ) [μA]	35
	R.R. (Typ) [dB]	73
Merit	Low drop out	

# Recommendation for Mechanical Relay Replacement




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Characteristics	TLP3107	TLP3555A	TLP3556A
Package	2.54SOP6 (6.3×7.0×2.1 mm)	DIP4 (4.58×7.62×3.65 mm)	
Forward voltage (VF) @IF=10mA	1.18V(min), 1.33(typ), 1.48V(max)	1.5V(min), 1.64(typ), 1.8V(max)	
Contact arrangement	Normally opened (1-Form-A)		
On-state resistance (RON)	60mΩ	(100mΩ)	200mΩ
Diode power dissipation (PD)	50mW	50mW	50mW
Off-state output terminal voltage (VOFF)	60V	60V	100V
Turn-ON time (tON)	Max. 5.0 ms	Max. 2.0 ms	Max. 2.0 ms
Turn-OFF time (tOFF)	Max 1.0 ms	Max 1.0 ms	Max 0.5 ms
Operating temperature (Topr)	-40°C to +85°C	-40°C to +110°C	
Comment	<ul style="list-style-type: none"> <li>■ In case of using 12/24VDC relay for Surveillance Camera, it is possible to recommend of Toshiba photo relays(VOFF=600VDC, 100VDC).</li> <li>■ Using DIP4, 2.54SOP6 package, it will be more smaller size of thermostat.</li> </ul>		



# Photorelay



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Device Type	Photorelay	Photorelay	Photorelay	
Proposal Product	TLP3107	TLP3555A	TLP3556A	
Package	 2.54 SOP6	 DIP4	 DIP4	
	Size [mm]	6.3×7.0×2.1	4.58×7.62×3.65	4.58×7.62×3.65
Characteristic	Contact arrangement	Normally opened (1-Form-A)	Normally opened (1-Form-A)	Normally opened (1-Form-A)
	ION (max)[A]	3.3	3.0	2.0
	VOFF (max) [V]	60	60	100
	RON (typ.) [mΩ]	60	100	200
	BVS (max) [Vrms]	1500	2500	2500

Device Type	TVS diode	TVS diode	
Proposal Product	DF10G5M4N	DF10G6M4N	
Package	 DFN10	 DFN10	
	Size [mm]	2.5 x 1.0	2.5 x 1.0
Characteristic	Number of bit	4	4
	$V_{ESD}$ [kV]	±20	±20
	$V_{RWM(Max)}$ [V]	3.6	5.5
	$C_t(Typ)$ [pF]	0.2	0.2
	$R_{DYN(Typ)}$ [ $\Omega$ ]	0.5	0.5
	$V_C@1A(Typ)$ [V]	7.5	8.5

# Schottky Barrier Diode

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Device Type		SBD	SBD	
Proposal Product		CUS10F30	CTS05F40	
Package		 SOD-323	 SOD-882	
Size [mm]		2.5 x 1.25	1.0 x 0.6	
Characteristic	$I_O$ (Max) [A]	1.0	0.5	
	$V_R$ (Max) [V]	30	40	
	$V_F$ [V] @ $V_R$ (Max)	Typ.	0.43	0.74
		Max.	0.50	0.81
	$I_R$ [ $\mu$ A]	Max.	50	15

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