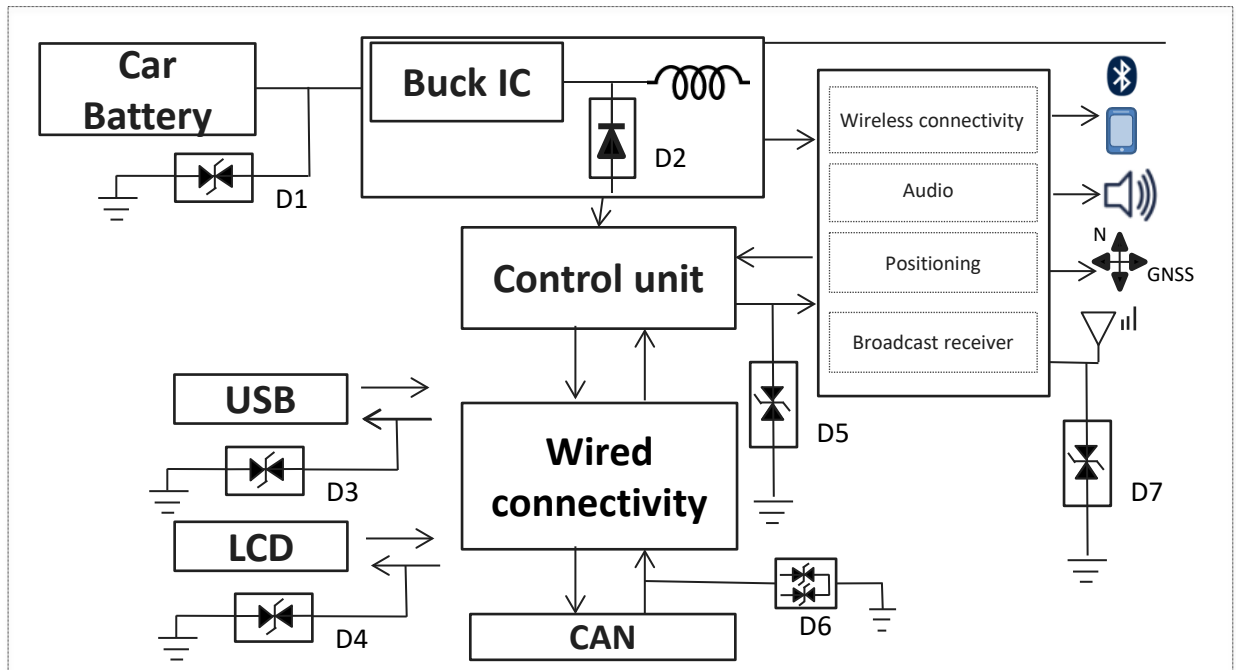

Automotive Applications Guide

2022

2022/1/11

Infotainment Head Unit

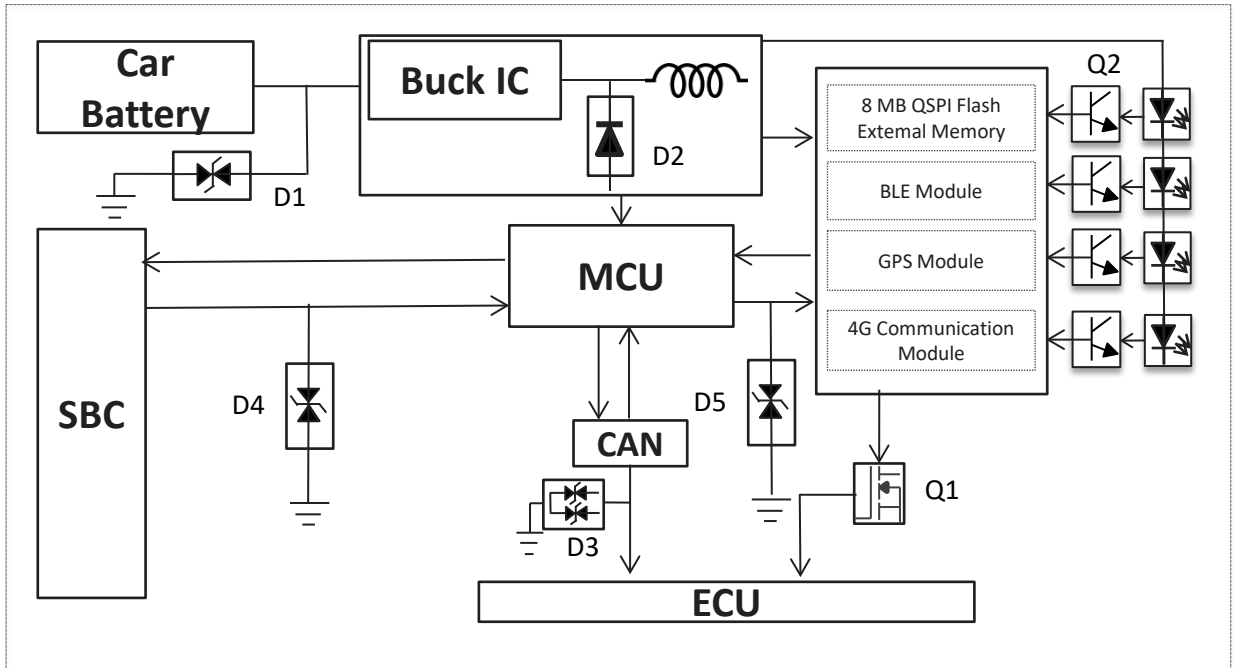
Digital terrestrial tuners, audio power amplifiers and multi-constellation GNSS positioning devices.



P/N	Product	Package	Specification	RefDes
ATV15C260JB-HF	TVS	SMC	26V/1500W	D1
ATV15CXXXJB-HF	TVS	SMC	1500W	D1
ACDBA340-HF	Schottky	SMA	40V/3A	D2
ACDBA360-HF	Schottky	SMA	60V/3A	D2
ACDBB540-HF	Schottky	SMB	40V/5A	D2
ACDBC540-HF	Schottky	SMC	40V/5A	D2
ACPDQC5V0ESPC-HF	ESD	0402	Bi- 5V/0.28pF	D3, D5
ACPDT-24VE-HF	ESD	SOT-23	Bi- 24V/20pF	D6, D7
ACPDQC24VE-HF	ESD	0402	Bi- 24V/20pF	D6, D7
ACPDQC5V0CHT-HF	ESD	0402	Bi- 5V/30pF	D4

T-BOX

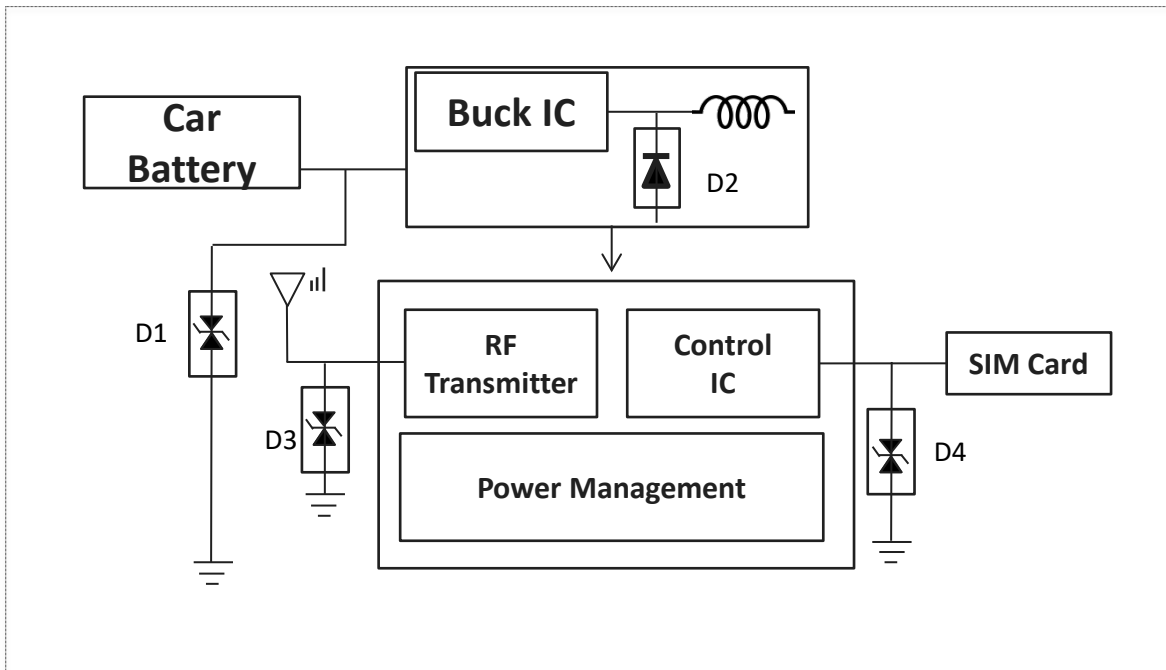
Telematics Box is the hardware responsible for Internet of Vehicles and Cloud Synchronization for digital integration



P/N	Product	Package	Specification	RefDes
ATV15C260JB-HF	TVS	SMC	26V/1500W	D1
ATV15CXXXJB-HF	TVS	SMC	1500W	D1
ACDBA340-HF	Schottky	SMA	40V/3A	D2
ACDBA360-HF	Schottky	SMA	60V/3A	D2
ACDBB540-HF	Schottky	SMB	40V/5A	D2
ACDBC540-HF	Schottky	SMC	40V/5A	D2
ACPDQC5V0ESPC-HF	ESD	0402	Bi- 5V/0.28pF	D4, D5
ACPD24-24VE-HF	ESD	SOT-23	Bi- 24V/20pF	D3
A2N7002H-HF	MOSFET	SOT-23	100V/50A	Q1
AMMBT3904-HF	Transistor	SOT-23	60V/0.2A	Q2

4G LTE

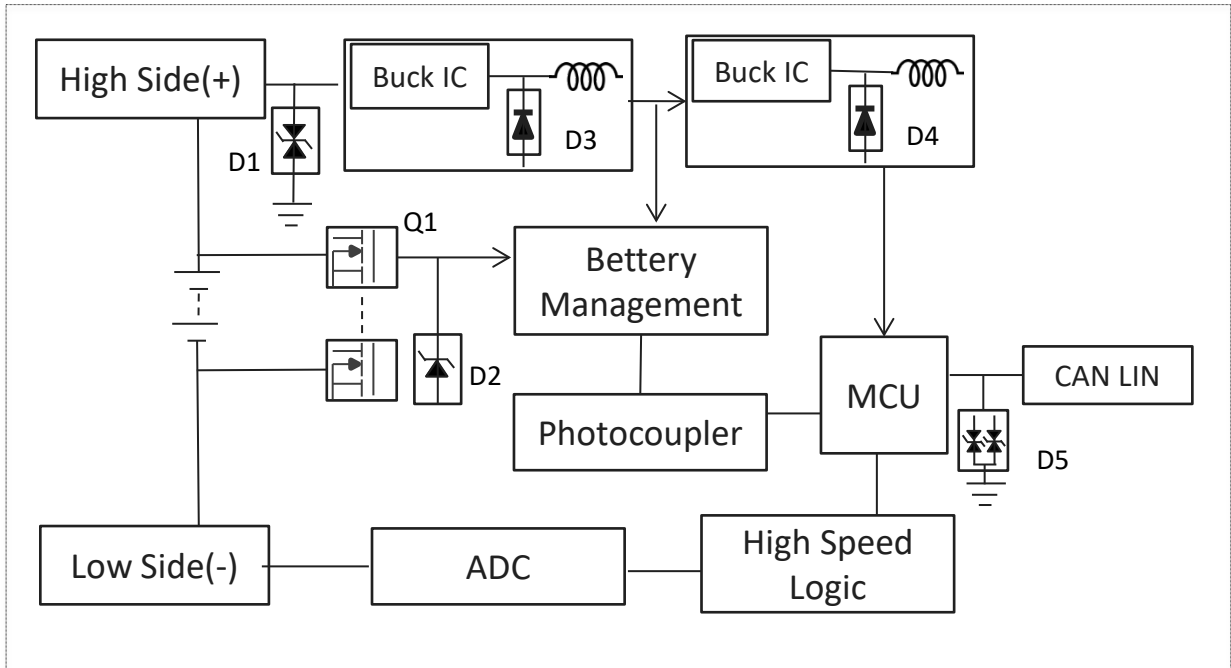
The TVS Diode is the main countermeasure for Automotive LTE module application



P/N	Product	Package	Specification	RefDes
ACPDQC5V0ESPC-HF	ESD	0402	Bi- 5V/0.28pF	D4
ACPDUC24V-HF	ESD	0603	Bi- 24V/10pF	D3
ACPDQC5V0CSP-HF	ESD	0402	Bi- 5V/0.3pF	D3
ASMCJ36CA-HF	TVS	SMC	Bi- 36V/1500W	D1
ASMCJ24CA-HF	TVS	SMC	Bi- 24V/1500W	D1
ACDBW0540-HF	Schottky	SOD-123	40V/0.5A	D2
ACDBMS140-HF	Schottky	SOD-123F	40V/1A	D2
ACDBMT140-HF	Schottky	SOD-123H	40V/1A	D2

BMS

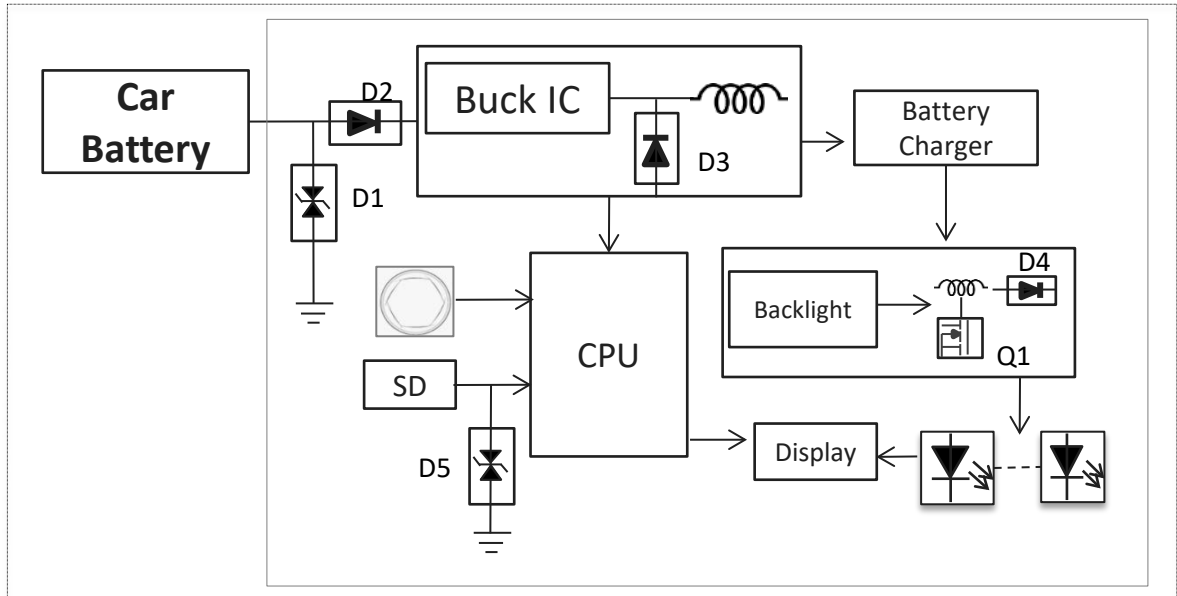
Battery Management System :
High voltage power supply for motor 380~420V
Low voltage power supply for control panel
(Precision action, start up or switch off)



P/N	Product	Package	Specification	RefDes
ATV15C260JB-HF	TVS	SMC	26V/1500W	D1
ATV04A240JB-HF	TVS	SMA	24V/400W	D1
ATV06A330JB-HF	TVS	SMA	33V/600W	D1
ABZT52B3V3-HF	Zener	SOD-123	3.3V/0.5W	D2
ACDBW0540-HF	Schottky	SOD-123	40V/0.5A	D3,D4
ACDBMS140-HF	Schottky	SOD-123F	40V/1A	D3,D4
ACPDQC5V0ESPC-HF	ESD	SOT-23	Bi- 24V/10pF	D5
ACPDT-24VE-HF	ESD	SOT-23	Bi- 24V/20pF	D5
A2N7002H-HF	MOSFET	SOT-23	60V/0.3A	Q1
ACMSN2312T-HF	MOSFET	SOT-23	20V/4.9A	Q1

Dashcam

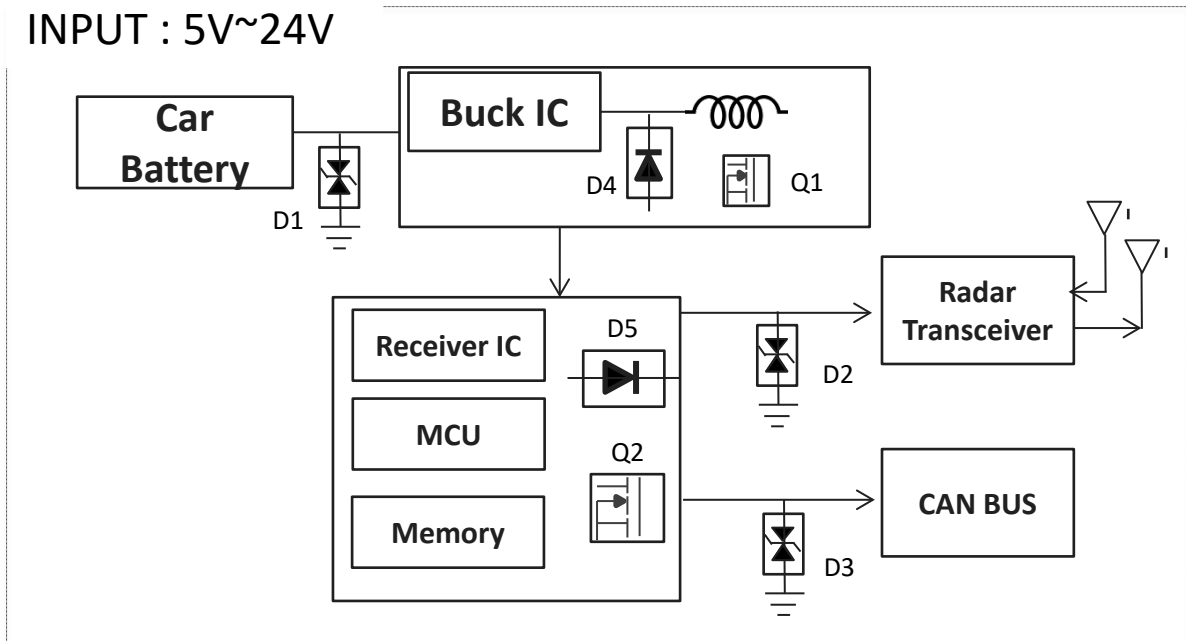
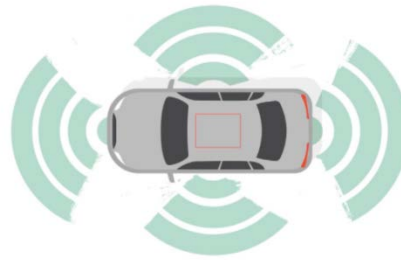
Aftermarket installed product. TVS, Schottky, ESD are commonly used as protection and transmission



P/N	Product	Package	Specification	RefDes
ATV30C260JB-HF	TVS	SMC	26V/3000W	D1
ATV15C260JB-HF	TVS	SMC	26V/1500W	D1
ACDBA340-HF	Schottky	SMA	40V/3A	D2
ACDBA360-HF	Schottky	SMA	60V/3A	D2
ACDBC540-HF	Schottky	SMC	40V/5A	D2
ACDBC560-HF	Schottky	SMB	60V/5A	D3
ACDBW0540-HF	Schottky	SOD-123	40V/0.5A	D4
ACDBMS140-HF	Schottky	SOD-123F	40V/1A	D4
ACPDZC5V0SPC-HF	ESD	0201	5V/0.2Pf	D5
ACPDZC5V0C-HF	ESD	0201	5V/3Pf	D5
CPDVR5V0-HF	ESD	0402	5V/12Pf	D5
A2N7002H-HF	MOSFET	SOT-23	60V/0.3A	Q1
ACMSN2312T-HF	MOSFET	SOT-23	20V/4.9A	Q1

ADAS

Advanced Driver Assistance System. Millimeter wave radar is employed for the pedestrian detection and vehicle distance detection

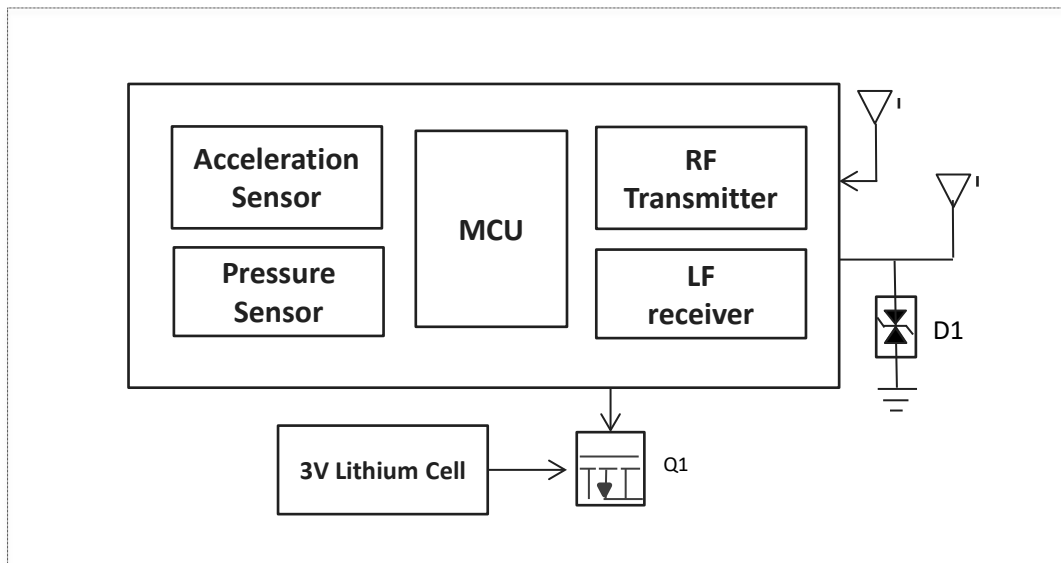


P/N	Product	Package	Specification	RefDes
ATV02 ~ ATV30 series	TVS	SOD-123~SMC	200W~3000W	D1
ACPDUC24V-HF	ESD	0603	Bi- 24V/10pF	D2,D3
ACPDQC5VOCSP-HF	ESD	0402	Bi- 5V/0.3pF	D2,D3
ACPDUC5V0-HF	ESD	0603	Bi- 5V/15pF	D2,D3
ACDBW0540-HF	Schottky	SOD-123	40V/0.5A	D4,D5
ACDBMS140-HF	Schottky	SOD-123F	40V/1A	D4,D5
A2N7002H-HF	MOSFET	SOT-23	60V/0.3A	Q1,Q2
ACMSN2312T-HF	MOSFET	SOT-23	20V/4.9A	Q1,Q2

TPS/TX



TX Module is employed for the tire pressure detection and temperature of tire. Because it continues using for a long period, 3 voltage lithium battery is the main power supply and it requires energy-saving components. Antenna will increase voltage during transmitting, thus ESD is required as protection.



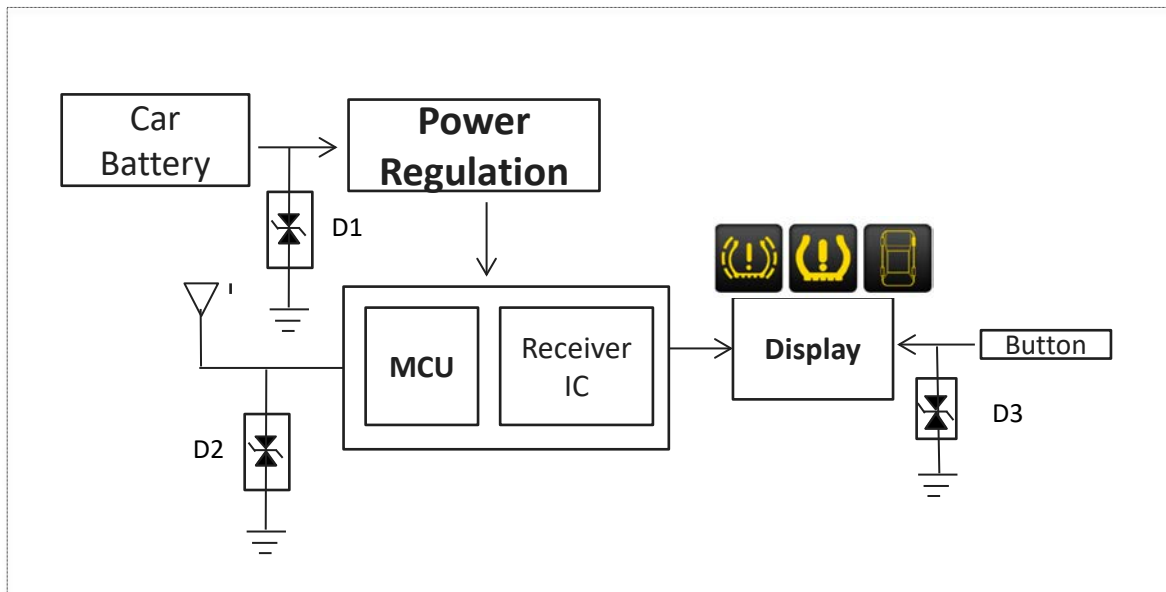
P/N	Product	Package	Specification	RefDes
ACPDQC5V0CSP-HF	ESD	0402	Bi- 5V/0.3pF	D1
CJ2301	MOSFET	SOT-23	P-CH/20V	Q1

TPS/RX

RX Module main purpose is interpretation of data from Tx



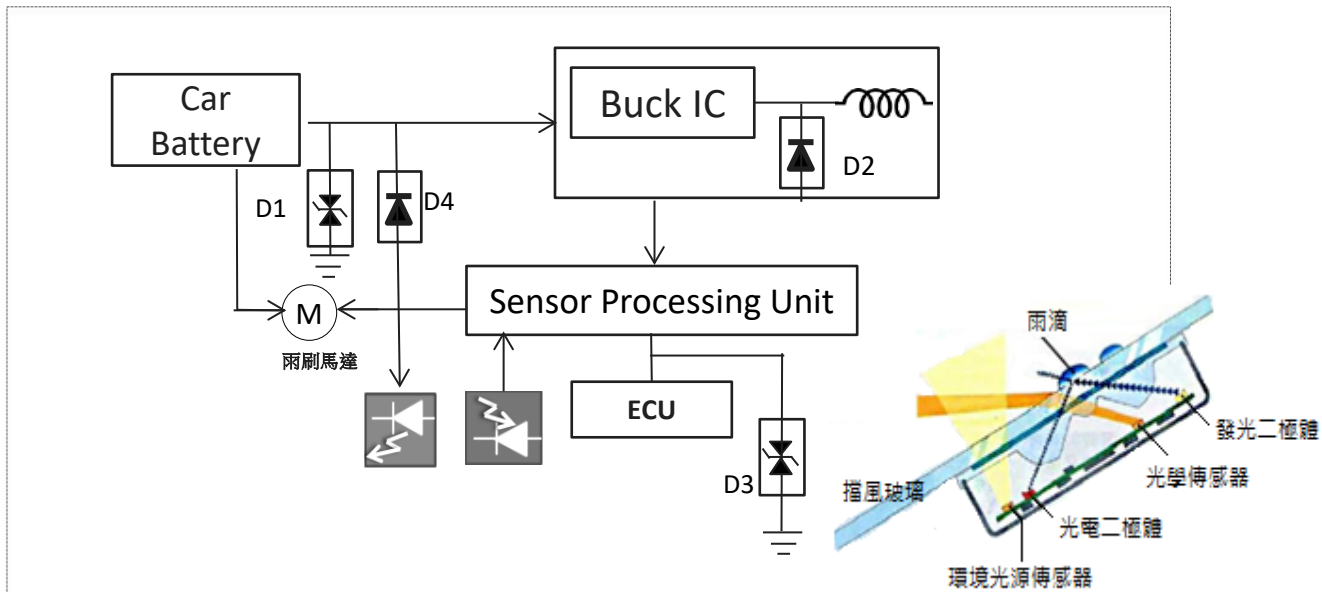
The monitor main power supply is from Car battery. The power regulation of IC or MCU may destruct by Battery Surge; therefore placed in ESD or TVS as protection. Display Button occasionally been pressed, also ESD could breakdown MCU or RF IC from inside, thus ESD is required as protection.



P/N	Product	Package	Specification	RefDes
ATV02 ~ ATV30 series	TVS	SOD-123~SMC	200W~3000W	D1
ACPDUC24V-HF	ESD	0603	Bi- 24V/10pF	D2
ACPDQC5V0CSP-HF	ESD	0402	Bi- 5V/0.3pF	D2
ACPDUC5V0-HF	ESD	0603	Bi- 5V/15pF	D3

Sunlight Sensor

The sensor detects the intensity of the rain and transmits its information to the windshield wiper's control electronics.

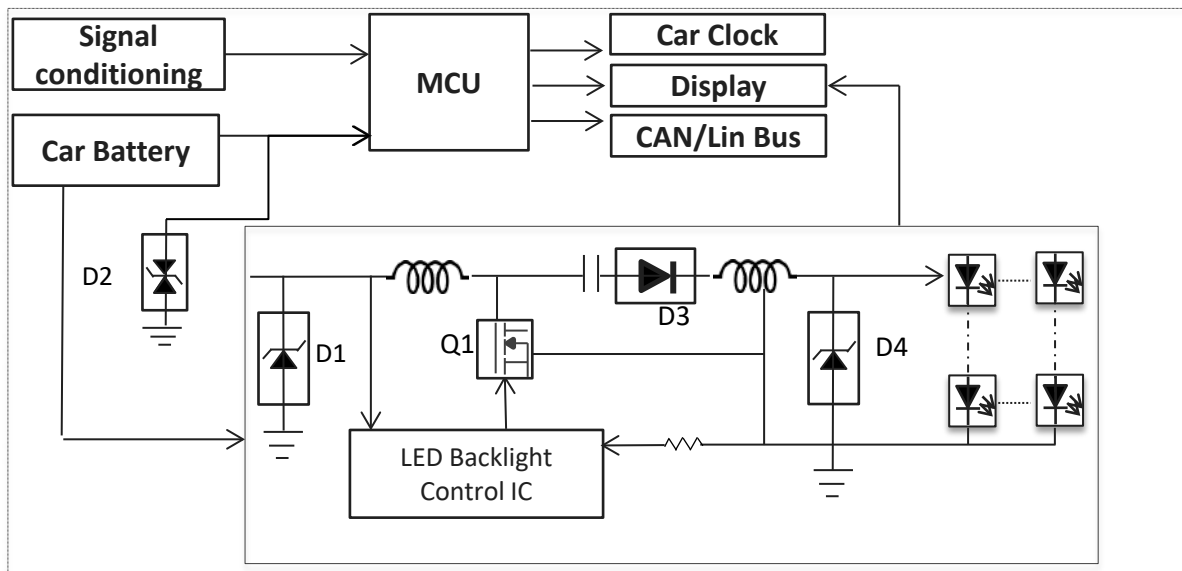


P/N	Product	Package	Specification	RefDes
ATV15C260JB-HF	TVS	SMC	26V/1500W	D1
ATV15CXXXJB-HF	TVS	SMC	1500W	D1
ACDBA340-HF	Schottky	SMA	40V/3A	D2
ACDBA360-HF	Schottky	SMA	60V/3A	D2
ACDBB540-HF	Schottky	SMB	40V/5A	D2
ACDBC540-HF	Schottky	SMC	40V/5A	D2
ACPDQC5V0ESPC-HF	ESD	0402	Bi- 5V/0.3pF	D3
ACPDT-24VE-HF	ESD	SOT-23	Bi- 24V/20pF	D3
ACPDUC24V-HF	ESD	603	Bi- 24V/10pF	D3
ACGRTS4007-HF	Rectifier	SOD-123L	1000V/1A	D4

Instrument Cluster



Instrument Cluster backlight is mainly use in LED light up or brightness adjustment to provide a richer vision. It will pass through Schottky, Mosfet and become the switch. In addition, LED can adapt TVS to protect and avoid the damage from the surge.

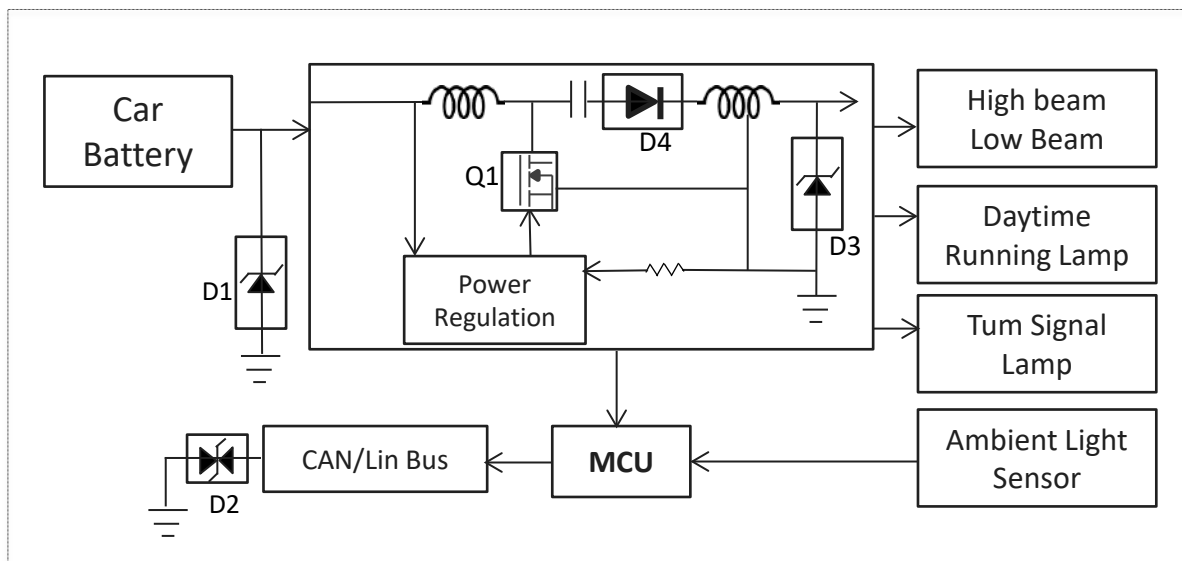


P/N	Product	Package	Specification	RefDes
ATV15260JB-HF	TVS	SMC	26V/1500W	D1,D4
ATV15CXXXJB-HF	TVS	SMC	1500W	D1,D4
ACPDUC24V-HF	ESD	603	Bi- 24V/10pF	D2
ACPDUC24VE-HF	ESD	603	Bi- 24V/16pF	D2
ACDBA360-HF	Schottky	SMA	60V/3A	D3
CMS50P04D-HF	P-Mosfet	TO252	-40V/-11A	Q1

LED Headlight



The battery input will cause alternating current wave because of back electromotive force. Therefore, place TVS at the input of the battery.

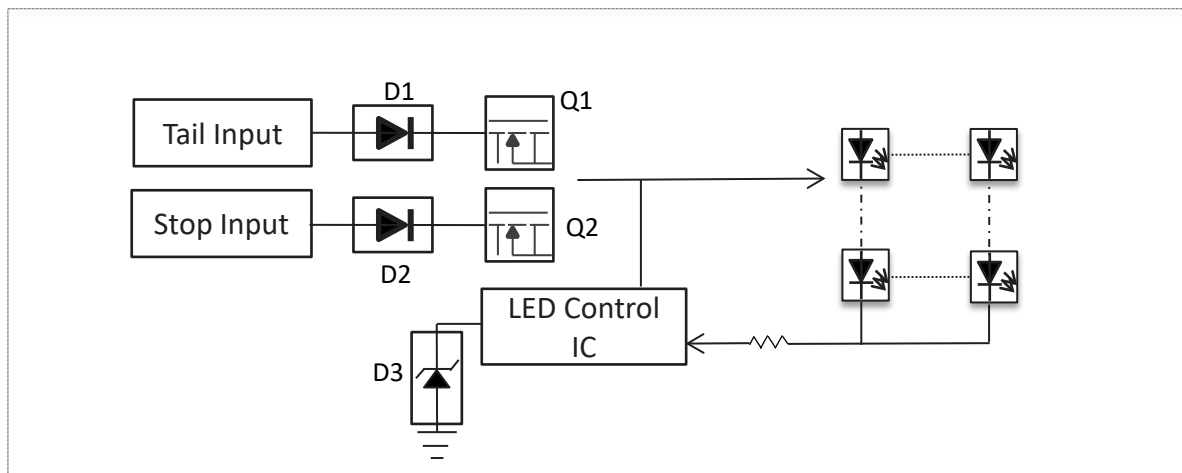


P/N	Product	Package	Specification	RefDes
ATV15C260JB-HF	TVS	SMC	26V/1500W	D1,D3
ATV15CXXXJB-HF	TVS	SMC	1500W	D1,D3
ACPDUC24V-HF	ESD	0603	Bi- 24V/10pF	D2
ACPDUC24VE-HF	ESD	0603	Bi- 24V/16pF	D2
ACDBA360-HF	Schottky	SMA	60V/3A	D4
ACDBC540-HF	Schottky	SMC	40V/5A	D4
CMS50N10D-HF	N-MOSFET	TO-252	100V/50A	Q1

LED Tail Light



The tail input and stop input power busbars are recommended to use Rectifier, Schottky or Switch diode because of reverse voltage protection when there is a peak in voltage to ensure the LED Control IC won't breakdown.



P/N	Product	Package	Specification	RefDes
ACDBA340-HF	Schottky	SMA	3A/40V	D1,D2
ACGRKM4005-HF	Rectifier	SOD-123	1A/600V	D1,D2
ACDSW4148-HF	Switching	SOD-123	300mA/75V	D1,D2
ACZRM Series	Zener	SOD-123F	500mW	D3
ACZA4745-HF	Zener	SMA	1W	D3
CMS50P04D-HF	P-Mosfet	TO252	-40V/-11A	Q1,Q2