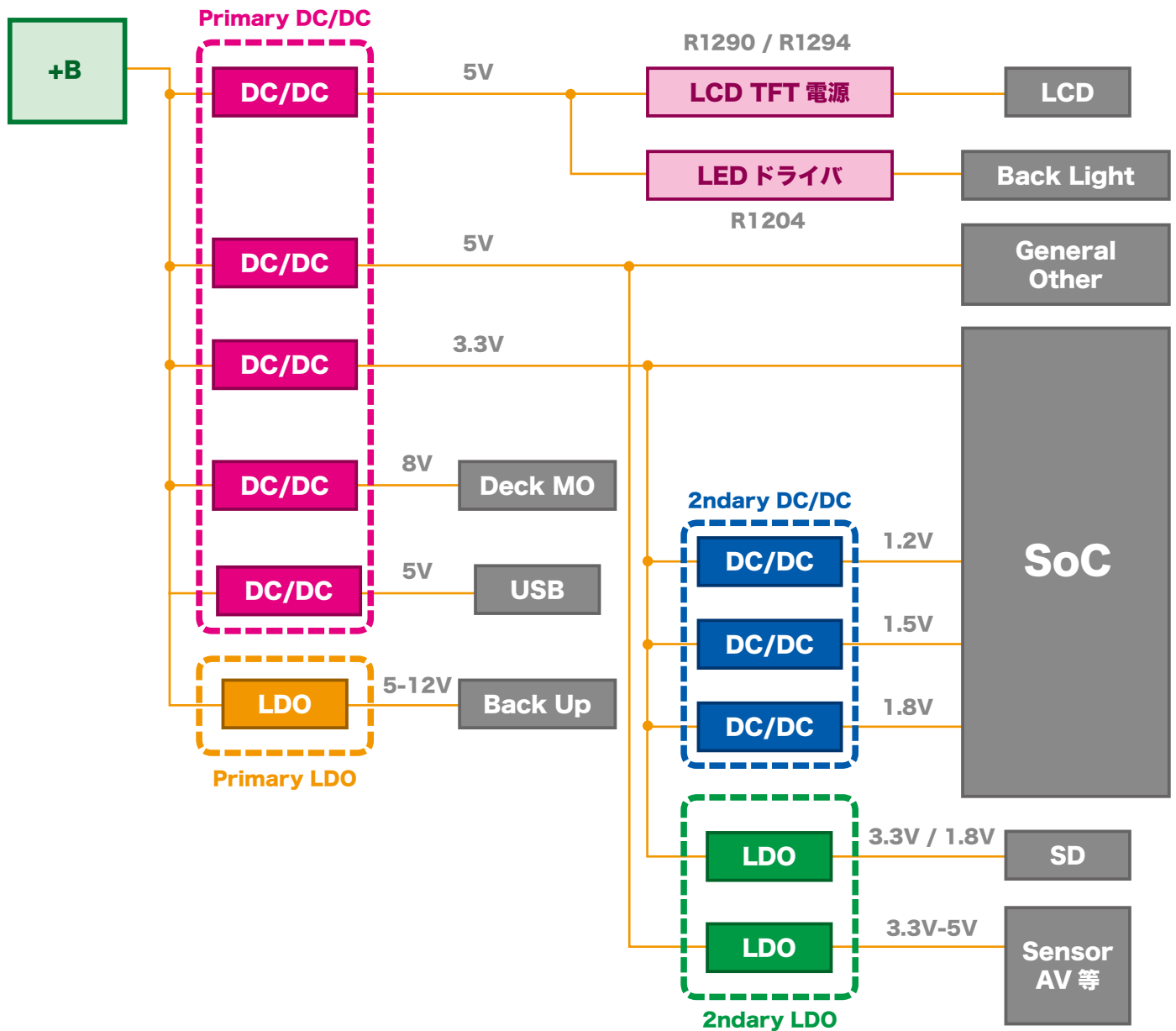


車載向け電源ラインナップ

Power Management ICs for Automotive

Ricoh Products in Power Configuration Example



● Primary DC/DC

R1245 R1273
R1272 R1276
R1275 (R1260)

● Primary DC/DC

R1513 R1517
R1516 R1524
R1518 (R1560)

● 2ndary LDO

RP111 RP130
RP132 RP170
RP108 RP115

● 2ndary DC/DC

RP506
RP510
RP550

※掲載製品以外のラインナップも揃えていますので、製品カタログ等をご覧ください。

Microchip Technology Inc.

車載向けUSB製品

USB OTGやUSB信号増幅/感度調整に対応した最先端の多彩なラインナップ

Product	Status	Upstream Port	USB Speed	Downstream Ports	MGMT I/F	ROM I/F	Op Voltage (V)	Charging Emulation	Temp Min.	Temp Max.	Packages
USB82512/3/4	In Production	USB 2.0	High Speed	2/3/4	No	I2C	3.3	No	-40	85	36/VQFN
USB82640	In Production	USB 2.0	High Speed	2	No	I2C, SPI	3.3	No	-40	85	48/VQFN
USB82642	In Production	USB 2.0	High Speed	2	No	I2C, SPI	3.3	No	-40	85	48/VQFN
USB84602	In Production	USB 2.0 or HSIC	High Speed	2	I2C	SPI, I2C for OTP	3.3	BC1.2, Apple	-40	85	48/VQFN
USB84604	In Production	USB 2.0 or HSIC	High Speed	4	I2C	SPI, I2C for OTP	3.3	BC1.2, Apple	-40	85	48/VQFN
USB83340	In Production	ULPI	High Speed	USB	1.8V-3.3V	No	Multi	Yes	-40	105	32/VQFN
USB4912	In Development	USB2.0	High Speed	1	I2C	SPI, I2C for OTP	3.3	Yes	-40	85	T.B.D

車載向けEthernet PHY

車載での豊富な実績とノイズ耐性強化したEthernet ラインナップ

Product	Status	Ethernet Bandwidth	Ports	Interface	Op. Voltage (V)	Temp Min.	Temp Max.	Packages
KSZ8041	In Production	10Base-T/ 100Base-TX / FX	1	MII/RMII/SMII	3.3	-40	85	32/VQFN 48/LQFP 48/TQFP
KSZ8051	In Production	10Base-T/ 100Base-TX	1	MII/RMII	3.3	-40	105	32/VQFN
KSZ8061	In Production	10Base-T/ 100Base-TX	1	MII/RMII	3.3	-40	105	32/VQFN 48/VQFN
KSZ9031	In Production	10Base-T/ 100Base-TX/1000Base-T	1	MII/RGMII/GMII	3.3	-40	105	48/VQFN 64/VQFN
LAN88730	In Production	10Base-T/ 100Base-TX	1	MII/RMII	3.3	-40	105	32/VQFN

車載向けInterface製品

MCU周辺のInterfaceを充実させる車載I/F製品

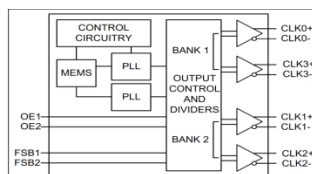
Product	Status	Description	Operating Voltage (V)	Interface	Max. Bus Frequency (kBits/s)	Packages
MCP23018	In Production	16-bit I/O Port Expander	1.8 - 5.5	I2C	"3,400"	24/QFN 24/SSOP 208mil 28/SOIC 300mil 28/SPDIP
MCP23008	In Production	8-bit I/O Port Expander	1.8 - 5.5	I2C	"1,700"	18/PDIP 18/SOIC 300mil 20/QFN 20/SSOP 208mil
MCP23S08	In Production	8-bit I/O Port Expander	1.8 - 5.5	SPI	"10,000"	18/PDIP 18/SOIC 300mil 20/QFN 20/SSOP 208mil
MCP23S09	In Production	8-bit I/O Port Expander	1.8 - 5.5	SPI	"10,000"	16/QFN 18/PDIP 18/SOIC 300mil
MCP2200	In Production	USB-to-UART serial converter	3.0 - 5.5	USB & UART	USB2.0 (Full Speed)	20/QFN 20/SSOP 208mil 20/SOIC 300mil
MCP2210	In Production	USB-to-SPI serial converter	3.0 - 5.5	USB & SPI	USB2.0 (Full Speed)	20/QFN 20/SSOP 208mil 20/SOIC 300mil
MCP2221	In Production	USB-to-I2C serial converter	3.0 - 5.5	USB & I2C	USB2.0 (Full Speed)	20/QFN 20/SSOP 208mil 20/SOIC 300mil

車載向けMEMS Clock

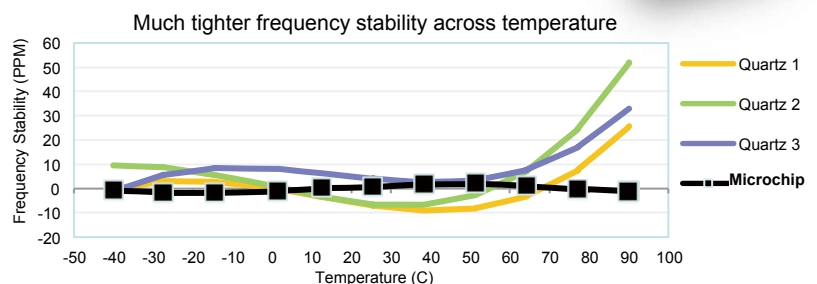
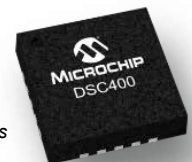
自社製MEMS発信機と温度補正用ASICを内蔵した高信頼性MEMSクロック

DSC400

- AEC-Q100 準拠
- 4種類の出力を設定可能：LVPECL, LVDS, HCSSL, LVCMOS
- 周波数範囲：2.3MHz~460MHz
2.3~170MHz(CMOS)
2.3~460MHz(LVPECL/LVDS/HCSSL)
- 2ch毎の同期した出力が可能
- PCIe規格に対応
- 低RMS位相ジッタ：<1ps (typ.)
- 周波数許容偏差：±25ppm, ±50ppm
- 電源電圧：2.25V~3.6V
- 動作温度範囲：-40°C~+85°C
- 低消費電流：出力Disable時 44mA
- FSBピンによる設定済み周波数の切り替え
- OEピンによる出力のEnable/Disable
- 高耐衝撃・高耐振動特性：MIL-STD-883認定
- パッケージ：20-pin QFN 5.0mm x 3.2mm x 0.85mm



PureSilicon™ Oscillators



CAN製品 Transceiver & Controller

CAN FD対応やAEC-Q100 Grade 0 (-40°~150)対応など幅広い製品ラインナップ

Product	Status	Description	Op. Voltage (V)	Ports (5Mbit/s)	CAN FD 対応	Partial Network対応	Wake Up.	Temp Min.	Temp Max.	Packages
ATA6560	In Production	Transceiver	4.5-5.5	1	1	No	0	-40	125	DFN8
ATA6562	In Production	Transceiver	4.5-5.5	1	1	No	1	-40	150	SO8
ATA6561	In Production	Transceiver	4.5-5.5	1	1	No	0	-40	125	DFN8
ATA6563	In Production	Transceiver	4.5-5.5	1	1	No	1	-40	150	SO8
ATA6566	In Production	Transceiver	4.5-5.5	1	1	No	0	-40	125	DFN8/SO8
ATA6564	In Production	Transceiver	4.5-5.5	1	1	No	1	-40	150	DFN8/SO8
ATA6565	In Production	Dual Transceiver	4.5-5.5	2	2	No	1	-40	150	DFN14/SO14
ATA6570	In Production	Transceiver	4.5-5.5	1	1	Yes	1	-40	150	DFN14/SO14
ATA6571	In Development	Transceiver	4.5-5.5	1	1	No	1	-40	150	DFN14/SO14
ATA6572	In Development	Transceiver	4.5-5.5	1	1	Yes	1	-40	150	DFN14/SO14
MCP2517FD	In Production	Controller	2.7-5.5	1	1	No	0	-40	150	DFN14/SO14

LIN製品 Transceiver

車載での豊富な実績とLDO内蔵製品など幅広いラインナップ

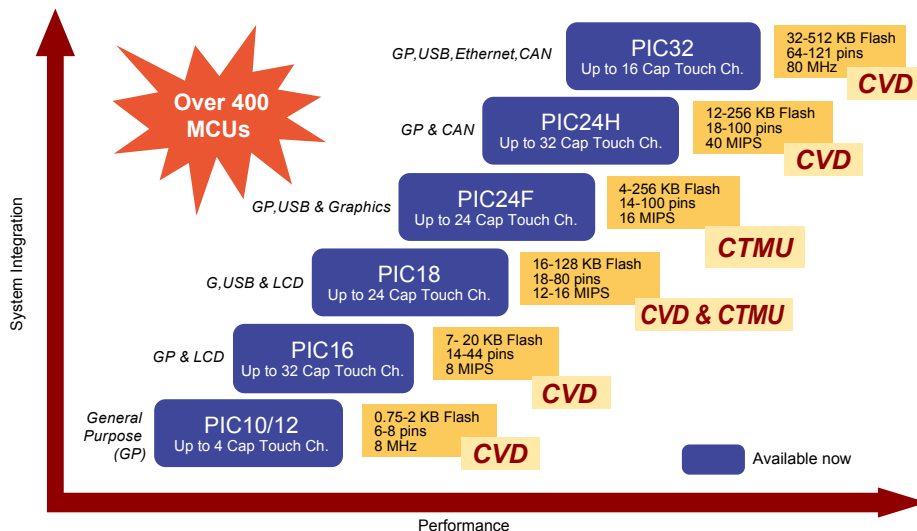
Product	Status	Op. Voltage (V)	Ports	Voltage Regulator	Watchdog	Wake Input.	Reset Output.	Temp Min.	Temp Max.	Packages
ATA663211	In Production	3.3	1	0	0	1	0	-40	125	8/SOIC 150mil 8/DFN
ATA663231/54	In Production	3.3/5	1	1	0	0	1	-40	125	8/VDFN 8/SOIC
ATA663232/55	In Production	3.3/5	1	1	0	1	0	-40	125	8/VDFN 8/SOIC
ATA663201/03	In Production	3.3/5	1	1	0	0	1	-40	125	8/VDFN
ATA663331/54	In Production	3.3/5	1	1	0	1	1	-40	125	16/VDFN
ATA663431/54	In Production	3.3/5	1	1	1	1	1	-40	125	16/VDFN
ATA6625	In Production	3.3	1	1	0	0	1	-40	125	8/SOIC

車載MCU製品 静電Touch

低価格8bit MCUによる1chipソリューション

特徴

- 国内、海外での豊富な市場実績より、被水、金属対策のノウハウが蓄積
- 8bit MCUの内部A/Dを使用しており、静電ボタンICとして使用するため、低価格で提供可能
- 8bit MCUのPWMを使用し、ウェルカムライトとしてのLEDのドライブも搭載可能



AEC-Q100 MHz Automotive Oscillators and Clock Generators with (-55°C) Temp Range

Product Category	Part #	Temp Range (°C)	Freq Stability	Frequency Range (MHz)	Package (mm x mm)
AEC-Q100 SMD Oscillators	SiT 8924	-55 to 125 (ext. temp)	±20 PPM	1 to 110	2.0 x 1.6 2.5 x 2.0 3.2 x 2.5 5.0 x 3.2 7.0 x 5.0
	SiT 8925	-40 to 125 (Grade 1)	±25 PPM	115.20 to 137	
AEC-Q100 One-output Clock Generator	SiT 2024	-40 to 105 (Grade 2)	±30 PPM	1 to 110	SOT23-5 (2.9 x 2.8)
	SiT 2025	-40 to 85 (Grade 3)	±50 PPM	115.20 to 137	

RF360 Holdings

RF360 A Qualcomm -TDK Joint Venture
(旧 TDK グループ EPCOS AG)

SAW, BAW, TC-SAW Filter

- AEC-Q200対応の車載向け高周波製品を多数ラインナップ
- 高い市場実績(グローバルな販売拠点)
- パッケージの小型化
- 長期供給可



GNSSフィルタ ラインアップ

Package size: 1.4x1.1mm

Package size: 3.0x3.0mm

Application	fc [MHz]	Usable bandwidth [MHz]	Insertion attenuation [dB]	Type	Application	fc [MHz]	Usable bandwidth [MHz]	Insertion attenuation [dB]	Type	
GPS/Galileo	1575.42	6.0	1.2	B4300	GPS/Galileo	1575.42	6.0	1.3	B3923	
		2.0	1.3	B4308			6.0	2.8	B3525	
GPS/Galileo Glonass	1588.655	34.47	1.5	B4310			2.0	1.2	B3528	
		34.47	1.6	B4313			2.0	2.3	B3400	
GPS/Galileo Glonass/BeiDou	1582.4	31.24	1.0-1.4	B4327	GPS/Galileo Glonass	1585.50	41	1.9	B3519	
							1586.00	42	1.9	B3517
GPS/Galileo Glonass/BeiDou	1582.47	46.84	0.8-1.0	B4348			1588.42	56	2.0	B3913
							1585.65	40.47	2.1	B3414
GPS/Galileo Glonass/BeiDou	1582.4	46.61	1.0-1.5	B4353	GPS/Galileo Glonass/BeiDou	1588.00	56	1.8	B3412	
						1588.00	56	2.0	B3413	
						1582.50	47	2.0	B3415	