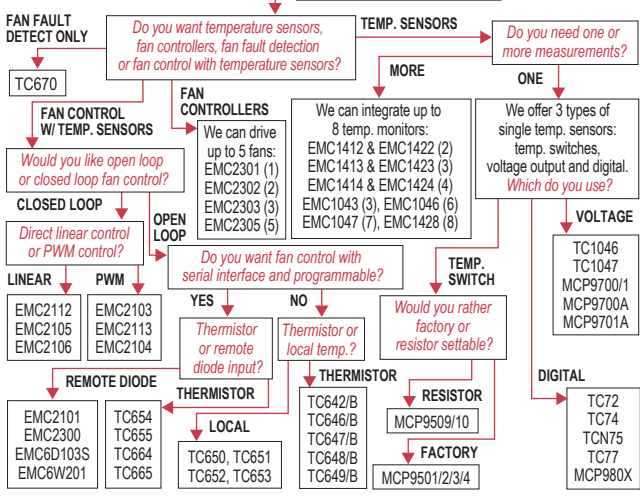


TREE 1: THERMAL MANAGEMENT



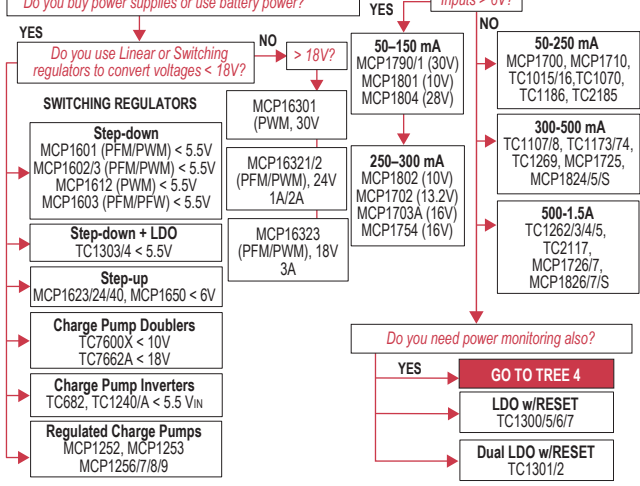
Temperature Sensor Unique Strengths (So What)

Wide variety of solutions: logic, voltage and digital output products
 (Multiple sensor needs met)
 Small packages (Saves space)
 Low operating current
 (Saves power, smaller supply)
 Field or factory programmable
 (Low cost vs. flexibility)
 Programmable hysteresis (Stop system cycling)
 Multi-drop capability (Great for large systems)
 Beta compensation (Compatible with processor substrate diodes)
 Resistance error correction (Compensates for measurement error from long PCB traces)

Fan Controllers Unique Strengths (So What)

Closed loop fan control (Adjust to meet target speed even on aging fans)
 Integrated temperature sensing (Consolidate thermal management)
 Multiple temperature measurements drive one fan (Consolidate thermal management)
 Built-in ramp rate control and spin up algorithm (Quick time to market, lower acoustic noise)
 Ability to detect/predict failure of less expensive 2-wire fans (Saves system cost)
 Unique solutions for extending fan life and reducing acoustic noise
 (Less power, nuisance and long fan life)

TREE 2: POWER MANAGEMENT 1



DC-DC Converter (So What)

Low-voltage operation (Saves Power)
 PFM/PWM Auto switch mode (PFM at low loads reduces current, saves power)
 Small SOT-23 packaging (Saves space)
 Step-down, Step-up (Efficiently increase or decrease voltage)

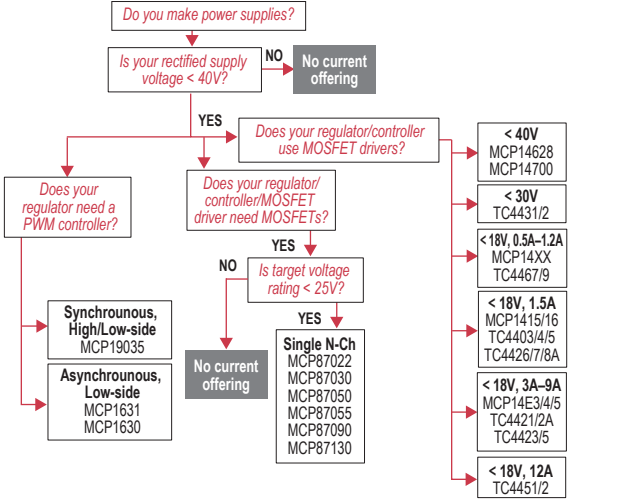
Charge Pumps (So What)

Low-voltage operation (Battery operation)
 Small SOT-23 packaging (Saves space)
 Step-down, Step-up (Efficiently increase or decrease voltage)
 Doubling & Inverting (Meets Vout needs)
 Low-Frequency capable (Reduces EMI)
 Low-Current Operation (Saves power)

LDO Unique Strengths (So What)

Hundreds of voltages, currents, packages (We have a match for the need)
 0.5% Vout accuracy (Fills precision need)
 Up to 1.5A output current (Able to power high load applications)

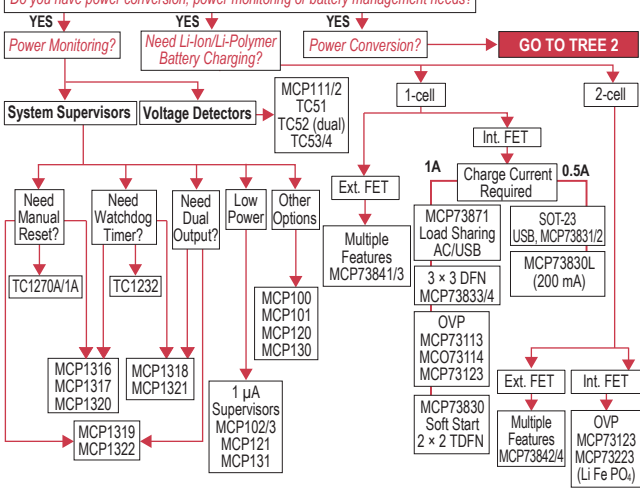
TREE 3: POWER MANAGEMENT 2



MOSFET Drivers (So What)

4.5V up to 30V Supply voltages (Fills many application needs)
 Up to 12A Peak output current (Able to meet demanding design needs)
 Outstanding robustness and latch-up immunity (Ours work when the others burn up)
 Low-FOM MOSFETs (Support high-efficiency applications)

TREE 4: POWER MANAGEMENT 3



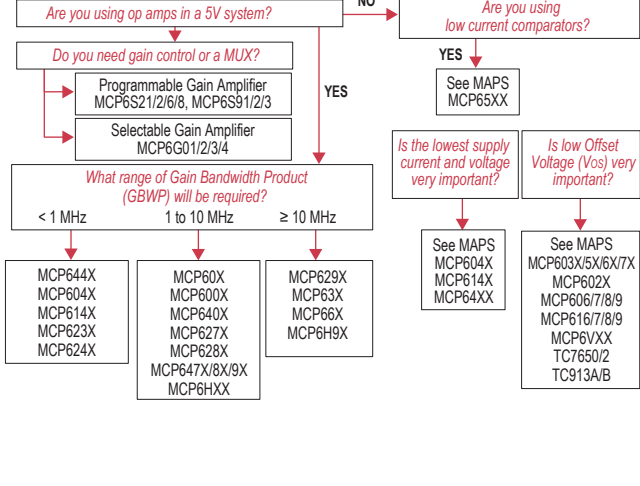
Supervisors & Voltage Detectors Unique Strengths (So What)

Broad Portfolio (It's likely we have your part)
 Small Packages: SOT-23 and SC-70 (Saves space)
 Industrial Standard Crosses (Replace high priced and poor delivery suppliers)

Battery Management Unique Strengths (So What)

Wide variety of charging solutions for Li-Ion batteries (We have the solution for you)
 Small SOT-23, MSOP, DFN and QFN packages (Saves space)

TREE 5: LINEAR



Op Amp Unique Strengths (So What)

Low current versus GBWP (Saves power)
 TC and MCP6XXX devices RR-I/O (Expands usable voltage range)
 MCP604X 1.4V operation (Two alkaline cells 90% used = 1.8V)
 MCP644X, 450 nA operation (Use the batteries even longer)

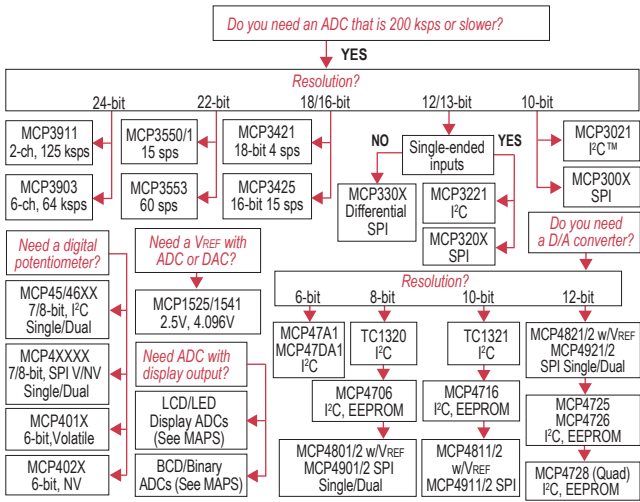
Comparators Unique Strengths (So What)

Low current versus propagation delay (Saves power)
 Integrated Features (Saves space)
 1.8V and 1.4V operation (That stuff about the batteries)

Programmable Gain Amplifier Unique Strengths (So What)

MUX input
 Wide bandwidth (2 to 12 MHz) (Reduces demand on MCU I/O)
 System control of gain (Changes easier through software configurable hardware)

TREE 6: MIXED-SIGNAL



ADC Unique Strengths (So What)

Low current at max sampling rate (Saves power, system cost)
 Small SOT-23 and MSOP packages (Saves space)
 Up to 24-bit resolution (Ideal for precision sensitive designs)
 Differential & single ended inputs (Able to cover various design needs)
 Up to 6 ADC per device (Save board space, system cost)

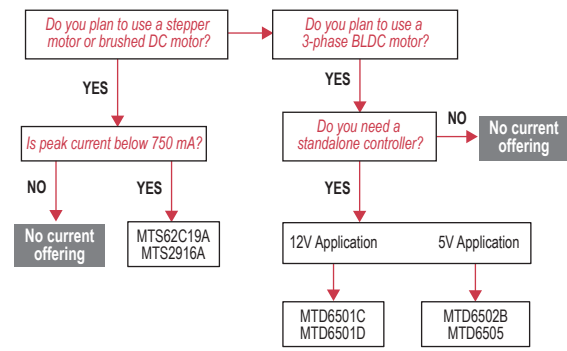
DAC Unique Strengths (So What)

Low Supply Current (Saves power)
 Low DNL & INL (Better accuracy)
 Extended Temperature Range (Suitable for wide temperature applications)

Digital Potentiometers Unique Strengths (So What)

64/256 tap (6-bit to 8-bit resolution) (Sufficient resolution for most applications)
 Non-volatile Memory (Remembers last wiper setting on power up)
 WiperLock™ Technology (Locks NV memory setting-better than OTP)
 Small SOT-23 and 2 x 3 DFN packages (Saves space)
 Low Cost

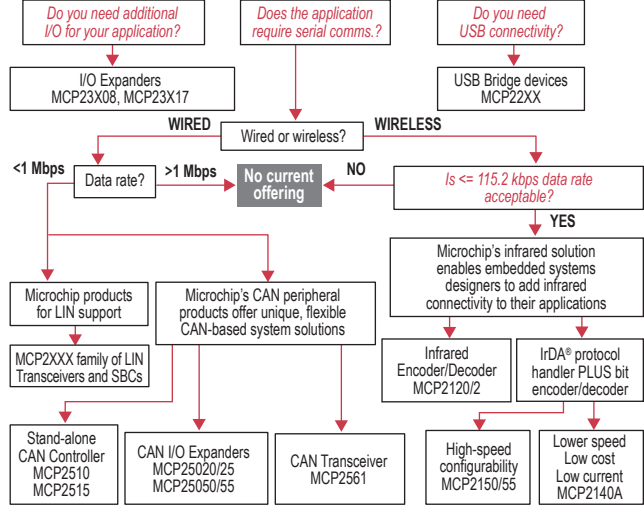
TREE 7: MOTOR DRIVE



Stepper Unique Strengths (So What)
 Industrial standard footprint
 (Footprint compatible to industrial leaders)
 Perfect PIC® MCU companion chip
 (Solid field support)
 Micro-stepping ready
 (Enhanced performance)
 Integration protections
 (Simplify software development)

3-Phase BLDC Unique Strengths (So What)
 Full-wave sinusoidal
 (Quiet operation, low mechanical vibration)
 Sensorless operation (Minimum external components, no software required)
 Thin form factor
 (Fits space concerned applications)

TREE 8: INTERFACE



LIN Unique Strengths (So What)
 Compliant with LIN Bus Specs 1.3, 2.0, 2.1 and SAE J2602 (Allows for reliable interoperability)
 High EMI Low EME (Meets OEM requirements)
 On-board VREG available
 (Saves space, allows for MCU Vcc flexibility)

CAN Unique Strengths (So What)
 Simple SPI CAN controller is an easy way to add CAN Ports (Short design cycles)
 High speed transceiver meets ISO-11898 (Drop in replacement for industry standard transceivers)
 Low-cost, easy-to-use development tools (Tools easy to buy/use, quick design)

I/O Expanders Unique Strengths (So What)
 Configurable inputs (interrupt configuration flexibility)
 Interrupt on pin change, or change from register default (interrupt source flexibility)
 Can disable automatic address incrementing when accessing the device (allows continual access to the port)
 The 16-bit devices can operate in 8-bit or 16-bit mode (easy to interface to 8-bit or 16-bit MCUs)

IrDA Unique Strengths (So What)
 IrDA protocol handler embedded on chip (Complex design issue solved)
 Low cost developer's kit available to assist infrared design-in (Quick design cycle)
 Small, cost-effective way of replacing serial links (No more wires)
 Enables system to wirelessly communicate with PDA (Wireless connectivity solution)

Analog & Interface Development Tools Demonstration Boards, Evaluation Kits and Accessories

- Interface**
 - MCP2515DM-BM: MCP2515 CAN Bus Monitor Demonstration Board
 - MCP2515DM-PTPLS: MCP2515 PICtail™ Plus Daughter Board
 - MCP2515DM-PTCL: MCP2515 CAN Controller PICtail Demonstration Board
 - MCP215XDM: MCP215X/40 Data Logger Demonstration Board
 - MCP2140DM-TMPSNS: MCP2140 IrDA® Wireless Temp Demonstration Board
- Linear**
 - ADM00375: MCP6H04 Evaluation Board
 - ARD00354: MCP6N11 Wheatstone Bridge Reference Design
 - MCP651EV-VOS: MCP651 Input Offset Evaluation Board
 - MCP661DM-LD: MCP661 Line Driver Demo Board
 - MCP6S22DM-PCTL: MCP6S22 PGA PICtail Demonstration Board
 - MCP6S2XEV: MCP6S2X PGA Evaluation Board
 - MCP6SX2DM-PCTLPD: MCP6SX2 PGA Photodiode PICtail Demonstration Board
 - MCP6SX2DM-PCTLTH: MCP6SX2-PGA Thermistor PICtail Demonstration Board
 - MCP6V01RD-TCPL: MCP6V01 Thermocouple Auto-Zero Ref Design
 - MCP6XXDM-FLTR: Active Filter Demo Board
 - PIC16F690DM-PCTLHS: Humidity Sensor PICtail Demonstration Board
- Mixed-Signal**
 - MCP3221 DM-PCTL: MCP3221 12-bit A/D PICtail Demonstration Board
 - MCP3421DM-BFG: MCP3421 Battery Fuel Gauge Demonstration Board
 - MCP3551DM-PCTL: MCP3551 PICtail Demonstration Board
 - MCP355XDM-TAS: MCP355X Tiny Application Sensor Demonstration Board
 - MCP355XDM-MS1: MCP3551 Sensor Demonstration Board
 - MCP402XEV: MCP402X Digital Potentiometer Evaluation Board
 - MCP4725EV: MCP4725, 12-bit Non-Volatile DAC Evaluation Board (Preferred One)
 - MCP4725DM-PTPLS: MCP4725, 12-bit Non-Volatile DAC PICtail Demonstration Board
 - ADM00398: MCP3911 ADC Evaluation Board for 16-bit Microcontrollers
- Power Management**
 - ADM00313EV: MCP73830L 2 × 2 TDFN Evaluation Board
 - ADM00352: MCP16301 High Voltage Buck Converter 600 mA Demonstration Board
 - ADM00360: MCP16301 High Voltage Buck Converter 300 mA D2PAK Demonstration Board
 - ADM00427: MCP16323 Evaluation Board (Supports MCP16321 and MCP16322)
 - ARD00386: MCP1640 12V/50 mA Two Cells Input Boost Converter Reference Design
 - MCP1252DM-BKLT: MCP1252 Charge Pump Backlight Demonstration Board
 - MCP12567/8/9EV: MCP12567/8/9 Charge Pump Evaluation Board
 - MCP1630RD-LIC1: MCP1630 Li-Ion Multi-Bay Battery Charger Reference Design
 - MCP1630DM-NMC1: MCP1630 NiMH Battery Charger Demonstration Board
 - MCP1640EV-SBC: MCP1640 Sync Boost Converter Evaluation Board
 - MCP1640RD-4ABC: MCP1640 Single Quad-A Battery Boost Converter Reference Design
 - MCP1650DM-LED1: MCP165X 3W White LED Demonstration Board
 - MCP1726EV: MCP1726 LDO Evaluation Board
 - MCP73831EV: MCP73831 Evaluation Kit
 - MCP7383XEV: MCP73837/8 AC/USB Dual Input Battery Charger Evaluation Board
 - MCP7383XRD-PPM: MCP7383X Li-Ion System Power Path Management Reference Design
 - MCP7384XEV: MCP7384X Li-Ion Battery Charger Evaluation Board
 - MCP73871EV: MCP73871 Load Sharing Li-Ion Battery Charger Evaluation Board
 - TC1016/17EV: TC1016/17 LDO Evaluation Board
 - VSUPEV: SOT-23-3 Voltage Supervisor Evaluation Board
- Serial**
 - GPIODM-KPLCD: GPIO Expander Keypad and LCD Demonstration Board
 - MCP23X17: MCP23X17 16-bit GPIO Expander Evaluation Board
- Thermal Management**
 - MCP9700DM-PCTL: MCP9700 Thermal Sensor PICtail Demonstration Board
 - MCP9800DM-PCTL: MCP9800 Thermal Sensor PICtail Demonstration Board
 - TC72DM-PICLT: TC72 Digital Temperature Sensor PICtail Demonstration Board
 - TC74DEMO: TC74 Serial Daughter Thermal Sensor Demonstration Board
 - TC1047ADM-PCTL: TC1047A Temperature-to-Voltage Converter PICtail™ Demonstration Board

Analog & Interface Literature

- Corporate**
 - Microchip Product Line Card - DS00890
- Brochures**
 - Analog and Interface Product Selector Guide - DS21060
 - Low Cost Development Tools Solutions Guide - DS51560
 - Analog and Interface Guide (Volume 1) - DS00924
 - Analog and Interface Guide (Volume 2) - DS21975
- Cards**
 - Analog Highlights Card - DS21972
 - Microchip Op Amp Discovery Card - DS21947
 - Analog & Interface Question Trees - DS21728
 - Microchip SAR and Delta-Sigma ACD Discovery Card - DS22101
- Design Guides**
 - Analog-to-Digital Converter Design Guide - DS21841
 - Digital Potentiometers Design Guide - DS22017
 - Programmable Gain Amplifiers (PGAs), Operational Amplifiers and Comparators Design Guide - DS21861
 - Interface Products Design Guide - DS21883
 - Signal Chain Design Guide - DS21825
 - Power Solutions Design Guide - DS21913
 - Temperature Sensor Design Guide - DS21895
 - Voltage Supervisors Design Guide - DS51548
- Software Tools**
 - MAPS - Microchip Advanced Product Selector
 - Analog & Interface Treelink Products Presentation

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<p>Thermal Management</p> <ul style="list-style-type: none"> Temperature Sensors Fan Control & Hardware Management <p>Motor Drive</p> <ul style="list-style-type: none"> Stepper and DC 3Φ Brushless DC Motor Driver 	<p>Power Management</p> <ul style="list-style-type: none"> LDO & Switching Regulators Charge Pump DC/DC Converters Power MOSFET Drivers PWM Controllers System Supervisors Voltage Detectors Voltage References Li-Ion/Li-Polymer Battery Chargers USB Port Power Controllers 	<p>Linear</p> <ul style="list-style-type: none"> Op Amps Instrumentation Amps Programmable Gain Amplifiers Comparators <p>Safety & Security</p> <ul style="list-style-type: none"> Photoelectric Smoke Detectors Ionization Smoke Detectors Ionization Smoke Detector Front Ends Piezoelectric Horn Drivers 	<p>Mixed-Signal</p> <ul style="list-style-type: none"> A/D Converter Families Digital Potentiometers D/A Converters V/F and F/V Converters Energy Measurement ICs Current/DC Power Measurement ICs 	<p>Interface</p> <ul style="list-style-type: none"> CAN Peripherals Infrared Peripherals LIN Transceivers Serial Peripherals Ethernet Controllers USB Peripheral
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Analog & Interface Question Trees