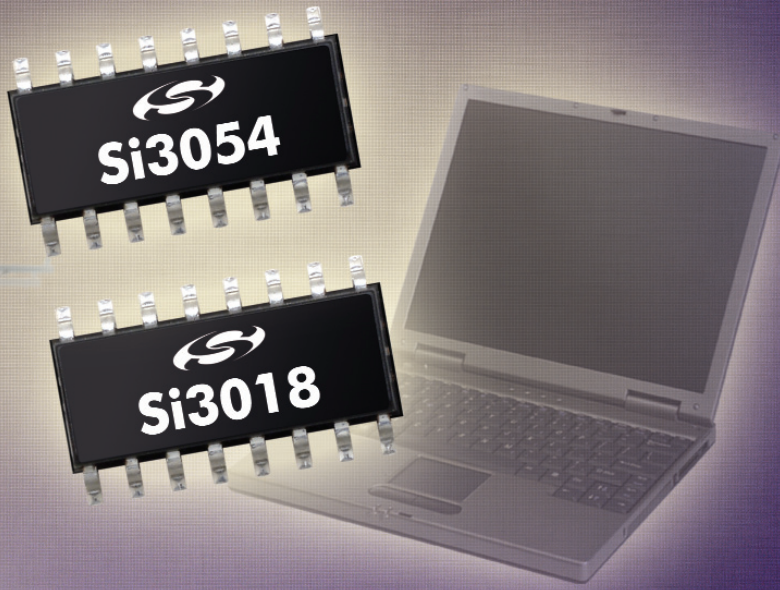


Si3054 Global MC '97 DAA Chipset

COMPLETE HARDWARE SOLUTION FOR SOFT MODEMS

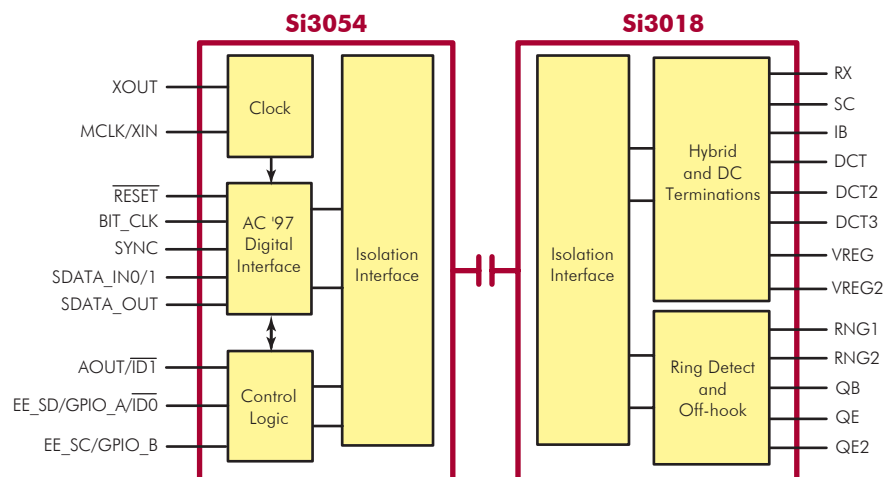


PRODUCT DESCRIPTION

The Si3054 is an integrated silicon direct access arrangement (DAA) with an AC-Link interface that offers global compliance through a programmable telephone line interface. The chipset (Si3054 and Si3018) is fully programmable for AC and DC termination, ringer impedance and ringer threshold, and it supports billing tone detection, polarity reversal and pulse dialing, enabling it to meet the most stringent global PTT requirements. The Si3054 offers a number of enhanced features including ring validation, integrated call progress speaker driver, external 14.31818 MHz clock support, internal PnP IDs, SDATA_IN switching and system lock-up protection.

Like other Silicon Labs' ISOcap™ DAA products, the Si3054 offers the highest level of integration by replacing the codec, isolation transformer, relay, opto-isolators, 2-4 wire hybrid and DC holding circuit with two 16-pin SOIC or TSSOP packages and minimal external components.

Si3054 BLOCK DIAGRAM



FEATURES

- Interface compliant with Intel AC '97 2.3 specification
- Compatible with MDC, CNR and Mini PCI specifications
- Globally compliant with FCC, TBR21, NET4, JATE and country-specific PTT specifications
- Single, global, low-cost bill-of-materials (BOM)
- Primary or secondary codec operation with SDATA_IN switching
- Integrated ring validation
- Internal Plug-and-Play IDs or external EPROM
- Integrated call progress speaker driver
- Programmable hybrid filter for increased echo cancellation
- Watchdog timer for system lock-up protection
- Line current sensing
- 84 dB dynamic range codec
- Greater than 5000 V isolation with standard capacitors
- Power saving modes
- 3.3 V digital power supply
- 16-pin SOIC or TSSOP packages
- Register set based on Si3038 chipset

APPLICATIONS

- V.92 Software Modems
- Mobile Daughter Cards (MDC)
- Communications Network Riser (CNR) Cards
- Mini PCI Cards
- Modem on Motherboard (MoM)
- Personal Digital Assistants (PDA)

PRODUCT BRIEF

**SMALLEST FOOTPRINT AND LOWEST
PROFILE DAA SOLUTION – IDEAL FOR
PORTABLE APPLICATIONS**



SILICON LABORATORIES

**UNPARALLELED
INTEGRATION AND
GLOBAL COMPLIANCE**

With its low-cost BOM, the Si3054 chipset dramatically reduces the number of components and cost required to achieve global compliance. The Si3054 achieves a 75% reduction in board space, requires 50% fewer components and saves 60% of the BOM cost as compared to discrete DAA solutions. As with previous Silicon Labs DAAs, the Si3054 chipset is globally compliant allowing one solution to ship worldwide, simplifying modem designs and reducing manufacturing costs.

Silicon Laboratories' patented ISOcap technology is the innovation behind the Si3054 chipset. Both modem and control data are transferred across the capacitive isolation barrier in digital format. This approach enables global programmability and improves noise immunity which is critical to global high-speed modem designs.

Countries Supported

FCC: USA and others

TBR21: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom

JATE: Japan

Additional*: Australia, Bulgaria, China, Czech Republic, Hungary, Korea, Malaysia, New Zealand, Philippines, Poland, Singapore, Slovakia, Slovenia, South Africa

*(Many other country-specific PTTs are supported)

60% BOM Cost Savings / 75% Board Space Savings

Single-Sided Mobile Daughter Card (MDC)

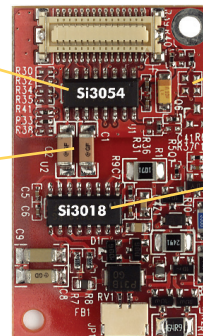
Actual Size Shown
(27 x 45 mm)

Si3054

- System-side DAA
- Optional 14.31818 MHz external clock or crystal

ISOcap

- 3000 to 5000 V isolation

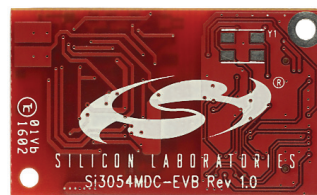


PnP IDs

- Internal PnP IDs or external EPROM

Si3018

- Line-side DAA with low-cost BOM
- Uses standard, multi-sourced components



**No components on
back side of board!**

Enhanced Features

- Ring Validation – verifies ring frequency and cadence to prevent invalid wake-on-ring events
- AC-Link Auto-Configuration – switches SDATA_IN signal to allow single riser card primary/secondary operation regardless of system configuration
- 14.31818 MHz Clock – eliminates cost of external 24.576 MHz crystal circuit by using system clock source
- Internal PnP IDs – adds PnP functionality to CNR cards and MDCs
- Lock-Up Protection – prevents a system lock-up from leaving the phone line in an off-hook state that inhibits calls
- Integrated Speaker Driver – reduces board space and cost of the call progress circuit

CONTACT INFORMATION



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Si3054; W, 5000, June 02, Rev A

SILICON DAA CHIPSETS

| Region | Interface | System-Side | | Line-Side | |
|--------|-----------|-------------|--------------|-------------|--------------|
| | | Part Number | Package | Part Number | Package |
| Global | PCI | Si3052-KQ | 64-pin TQFP | Si3018-KS | 16-pin SOIC |
| Global | PCI | Si3052-KQ | 64-pin TQFP | Si3018-KT | 16-pin TSSOP |
| Global | AC-Link | Si3054-KS | 16-pin SOIC | Si3018-KS | 16-pin SOIC |
| Global | AC-Link | Si3054-KT | 16-pin TSSOP | Si3018-KT | 16-pin TSSOP |