

ITU CO/Loop Carrier SLIC

The HC-5509B telephone Subscriber Line Interface Circuit integrates most of the BORSCHT functions on a monolithic IC. The device is manufactured in a Dielectric Isolation (DI) process and is designed for use as a high voltage interface between the traditional telephone subscriber pair (Tip and Ring) and the low voltage filtering and coding/decoding functions of the line card. Together with a secondary protection diode bridge and "feed" resistors, the device will withstand 1000V lightning induced surges, in plastic packages. The SLIC also maintains specified transmission performance in the presence of externally induced longitudinal currents. The BORSCHT functions that the SLIC provides are:

Battery Feed with Subscriber Loop Current Limiting

- Overvoltage Protection
- Ring Relay Driver
- Supervisory Signaling Functions
- Hybrid Functions (with External Op Amp)
- Test (or Battery Reversal) Relay Driver

In addition, the SLIC provides selective denial of power to subscriber loops, a programmable subscriber loop current limit from 20mA to 60mA, a thermal shutdown with an alarm output and line fault protection. Switch hook detection, ring trip detection and ground key detection functions are also incorporated in the SLIC device.

The HC-5509B SLIC is ideally suited for line card designs in PBX and CO systems, replacing traditional transformer solutions.

Ordering Information

PART NUMBER	TEMP. RANGE (°C)	PACKAGE	PKG. NO.
HC3-5509B-5	0 to 75	28 Ld PDIP	E28.6
HC3-5509B-9	-40 to 85	28 Ld PDIP	E28.6
HC4P5509B-5	0 to 75	44 Ld PLCC	N44.65
HC4P5509B-9	-40 to 85	44 Ld PLCC	N44.65
HC9P5509B-5	0 to 75	28 Ld SOIC	M28.3
HC9P5509B-9	-40 to 85	28 Ld SOIC	M28.3

Features

- DI Monolithic High Voltage Process
- Compatible with Worldwide PBX and CO Performance Requirements
- Controlled Supply of Battery Feed Current with Programmable Current Limit
- Operates with 5V Positive Supply (V_{B+})
- Internal Ring Relay Driver and a Utility Relay Driver
- High Impedance Mode for Subscriber Loop
- High Temperature Alarm Output
- Low Power Consumption During Standby Functions
- Switch Hook, Ground Key, and Ring Trip Detection
- Selective Power Denial to Subscriber
- Voice Path Active During Power Denial
- On-Chip Op Amp for 2-Wire Impedance Matching

Applications

- Solid State Line Interface Circuit for PBX or Central Office Systems, Digital Loop Carrier Systems
- Hotel/Motel Switching Systems
- Direct Inward Dialing (DID) Trunks
- Voice Messaging PBXs
- High Voltage 2-Wire/4-Wire, 4-Wire/2-Wire Hybrid
- Related Literature
 - AN9607, Impedance Matching Design Equations
 - AN9628, AC Voltage Gain
 - AN9608, Implementing Pulse Metering
 - AN549, The HC-5502S/4X Telephone Subscriber Line Interface Circuits (SLIC)