

Device Information

ICL3221







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1 Microamp Supply-Current, +3V to +5.5V, 250kbps, RS-232 Transmitters/Receivers

 Datasheet & Related Docs	 Description	 Key Features	 Parametric Data	 Application Diagrams	 Related Devices
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Ordering Information

 **RoHS/Pb-Free/Green Device**

Part No.	Status	Temp.	Package	MSL	
ICL3221CA	Active	Comm	16 Ld SSOP	1	Buy Sample
ICL3221CA-T	Active	Comm	16 Ld SSOP T+R	1	Buy
ICL3221CAZ 	Active	Comm	16 Ld SSOP	3	Buy Sample
ICL3221CAZ-T 	Active	Comm	16 Ld SSOP T+R	3	Buy
ICL3221CV	Active	Comm	16 Ld TSSOP	1	Buy Sample
ICL3221CV-T	Active	Comm	16 Ld TSSOP T+R	1	Buy
ICL3221CVZ 	Active	Comm	16 Ld TSSOP	1	Buy Sample
ICL3221CVZ-T 	Active	Comm	16 Ld TSSOP T+R	1	Buy
ICL3221IA	Active	Ind	16 Ld SSOP	1	Buy Sample
ICL3221IA-T	Active	Ind	16 Ld SSOP T+R	1	Buy
ICL3221IAZ 	Active	Ind	16 Ld SSOP	3	Buy Sample
ICL3221IAZ-T 	Active	Ind	16 Ld SSOP T+R	3	Buy
ICL3221CBN	InActive	Comm	16 Ld SOIC		
ICL3221CBN-T	InActive	Comm	16 Ld SOIC T+R		
ICL3221IV	InActive	Ind	16 Ld TSSOP		
ICL3221IV-T	InActive	Ind	16 Ld TSSOP T+R		

The price listed is the manufacturer's suggested retail price for quantities between 100 and 999 units. However, prices in today's market are fluid and may change without notice.

MSL = Moisture Sensitivity Level - per IPC/JEDEC J-STD-020

SMD = Standard Microcircuit Drawing

Description

The Intersil ICL32XX devices are 3.0V to 5.5V powered RS-232 transmitters/receivers which meet EIA/TIA-232 and V.28/V.24 specifications, even at VCC = 3.0V. Targeted applications are PDAs, Palmtops, and notebook and laptop computers where the low operational, and even lower standby, power consumption is critical. Efficient on-chip charge pumps, coupled with manual and automatic powerdown functions (except for the ICL3232), reduce the standby supply current to a 1µA trickle. Small footprint packaging, and the use of small, low value capacitors ensure board space savings as well. Data rates greater than 250kbps are guaranteed at worst case load conditions. This family is fully compatible with 3.3V only systems, mixed 3.3V and 5.0V systems, and 5.0V only systems.

The ICL324X are 3-driver, 5-receiver devices that provide a complete serial port suitable for laptop or notebook computers. Both devices also include noninverting alwaysactive receivers for “wake-up” capability.

The ICL3221, ICL3223 and ICL3243, feature an *automatic powerdown* function which powers down the on-chip power-supply and driver circuits. This occurs when an attached peripheral device is shut off or the RS-232 cable is removed, conserving system power automatically without changes to the hardware or operating system. These devices power up again when a valid RS-232 voltage is applied to any receiver input.

Table 1 summarizes the features of the devices represented by this data sheet, while Application Note AN9863 summarizes the features of each device comprising the ICL32XX 3V family.

Key Features

- Pb-Free Available as an Option (See Ordering Info)
- 15kV ESD Protected (Human Body Model)
- Drop in Replacements for MAX3221, MAX3222, MAX3223, MAX3232, MAX3241, MAX3243, SP3243
- ICL3221 is Low Power, Pin Compatible Upgrade for 5V MAX221
- ICL3222 is Low Power, Pin Compatible Upgrade for 5V MAX242, and SP312A
- ICL3232 is Low Power Upgrade for HIN232/ICL232 and Pin Compatible Competitor Devices
- RS-232 Compatible with VCC = 2.7V
- Meets EIA/TIA-232 and V.28/V.24 Specifications at 3V
- Latch-Up Free
- On-Chip Voltage Converters Require Only Four External 0.1µF Capacitors
- Manual and Automatic Powerdown Features (Except ICL3232)
- Guaranteed Mouse Driveability (ICL324X Only)
- Receiver Hysteresis For Improved Noise Immunity
- Guaranteed Minimum Data Rate 250kbps
- Guaranteed Minimum Slew Rate 6V/µs
- Wide Power Supply Range Single +3V to +5.5V
- Low Supply Current in Powerdown State 1µA

Related Documentation

AN Application Note(s):

- [3V to +5.5V, 250k-1Mbps, RS-232 Transmitters/Receivers](#)

DS Datasheet(s):

- [1 Microamp Supply-Current, +3V to +5.5V, 250kbps, RS-232 Transmitters/Receivers](#)

TH Technical Homepage:

- [Interface Ics](#)
- [RS-232 Interface Ics](#)

DM Design Model(s):

- [IBIS model for EIA-TIA RS-232 Transceiver](#)

PT Parametric Data

# of Tx	1
# of Rx	1
High ESD	No
Manual Shutdown	Yes
Auto Shutdown	Basic
Rx Disable	Yes
Data Rate (kbps)	500
Cap. Value (μ F)	.1
I _{CC} Enabled (mA)	.3
I _{CC} Disabled (μ A)	1
V _{CC} Range (+V)	3 to 5.5

□ Application Block Diagrams

- [Blade PC](#)
- [Blade Server](#)
- [DSLAM](#)
- [Desktop Computers](#)
- [Desktop Server](#)
- [Keyboard Video Mouse \(KVM\)](#)
- [POS Register](#)
- [POS Self-Service](#)
- [Portable Digital Assistant \(PDA\)](#)

Applications

- Any System Requiring RS-232 Communication Ports
 - Battery Powered, Hand-Held, and Portable Equipment
 - Laptop Computers, Notebooks, Palmtops
 - Modems, Printers and other Peripherals
 - Digital Cameras
 - Cellular/Mobile Phones

■ Related Devices

PT [Parametric Table](#)

ICL3207	Low Power, +3V To +5.5V, 250kbps, RS-232 Transmitters/Receivers
ICL3217	Low Power, +3V To +5.5V, 250kbps, RS-232 Transmitters/Receivers
ICL3222	1 Microamp Supply-Current, +3V to +5.5V, 250kbps, RS-232 Transmitters/Receivers
ICL3223	1 Microamp Supply-Current, +3V to +5.5V, 250kbps, RS-232 Transmitters/Receivers
ICL3224	1 microamp, +3V To +5.5V, 250kbps, RS-232 Transceivers With Enhanced Automatic Powerdown
ICL3225	1 Microamp, +3V to +5.5V, 1Mbps, RS-232 Transceivers with Enhanced Automatic Powerdown
ICL3226	1 microamp, +3V To +5.5V, 250kbps, RS-232 Transceivers With Enhanced Automatic Powerdown
ICL3232	1 Microamp Supply-Current, +3V to +5.5V, 250kbps, RS-232 Transmitters/Receivers
ICL3237	1 Microamp Supply-Current, +3V to +5.5V, 250kbps or 1000kbps, RS-232 Transmitters/Receivers
ICL3238	1 microamp, +3V To +5.5V, 250kbps, RS-232 Transceivers With Enhanced Automatic Powerdown

- [ICL3241](#) 1 Microamp Supply-Current, +3V to +5.5V, 250kbps, RS-232 Transmitters/Receivers
- [ICL3243](#) 1 Microamp Supply-Current, +3V to +5.5V, 250kbps, RS-232 Transmitters/Receivers
- [ICL3244](#) 1 microamp, +3V To +5.5V, 250kbps, RS-232 Transceivers With Enhanced Automatic Powerdown
- [ICL3245](#) 1 Microamp, +3V to +5.5V, 1Mbps, RS-232 Transceivers with Enhanced Automatic Powerdown