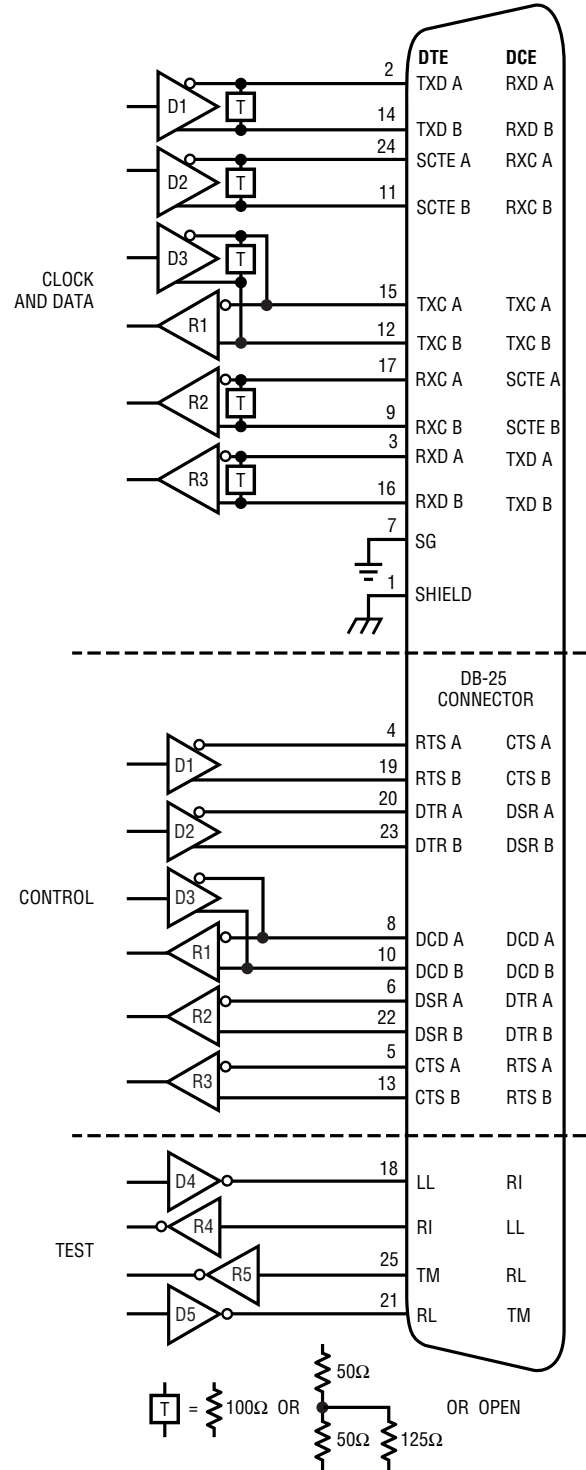


Multiprotocol Interface Solutions

- Supports RS232, RS449, EIA530, EIA530-A, V.35, V.36, X.21 Protocols
- Single 5V Supply
- Integrated Switched Termination
- Flow-Through Pinout
- NET1, NET2 and TBR2 Compliant


CHIPSET	CLOCK AND DATA SIGNALS	CONTROL SIGNALS	TEST SIGNALS			TERMINATION	PACKAGE
			LL	RL	TM		
LTC1546	✓					✓	SSOP28
LTC1545		✓	✓	✓	✓		SSOP36
LTC1546	✓					✓	SSOP28
LTC1544		✓	✓				SSOP28
LTC1543	✓						SSOP28
LTC1545		✓	✓	✓	✓		SSOP36
LTC1344A					✓		SSOP24
LTC1543	✓						SSOP28
LTC1544		✓	✓				SSOP28
LTC1344A					✓		SSOP24
LTC1343	✓						SSOP44
LTC1343		✓	✓	✓	✓		SSOP44
LTC1344					✓		SSOP24



INTERFACE

Configurable Interface

Multiprotocol: RS232, EIA-530, EIA-530A, RS449, V.35, V.36 or X.21

- LTC1343 Multiprotocol 4Dx/4Rx Transceiver
- LTC1344 Software-Selectable Multiprotocol Cable Terminator
- LTC1344A Software-Selectable Multiprotocol Cable Terminator
- LTC1543 Multiprotocol 3Dx/3Rx Transceiver for DATA/CLK, Single 5V Supply with Internal Charge Pump
- LTC1544 Multiprotocol 4Dx/4Rx Transceiver for Control Signals, Single 5V Supply
- LTC1545 Multiprotocol 5Dx/5Rx Transceiver, Single 5V Supply, Includes RL and TM Signals
- LTC1546 Multiprotocol 3Dx/3Rx Transceiver for Data/Clock, Includes Integrated Termination** 

Complete, Low Cost Systems May be Configured Using the Best Combination of the Above Circuits.

Programmable EIA/TIA562, RS232 or RS485

5V Powered

LTC1334 (4Dx/Rx RS232, 2Dx/Rx RS485)
LTC1387 (2 RS232 Dx/Rx, 1 RS485 Dx/Rx)

±5V Powered

LTC1322, LTC1335 (4Dx/Rx RS562, 2Dx/Rx RS485)
LTC1321 (2Dx/Rx RS562 or RS232, 2Dx/Rx RS485)

LocalTalk®/GEO Port

Complete LocalTalk® Port

LTC1318 (5V DCE Combination RS422, RS562)
LTC1320 (DTE Combination RS422, RS562)
LTC1323 (5V DTE Combination RS422, RS562)
LTC1323-16 (5V Combination RS422, RS562)
LTC1324 (5V DTE or DTE Differential Line Transceiver)

SCSI Active Terminators

LT1118-2.85 (For use with active negation line drivers)
LT1117-2.85 (For use with open collector line drivers)

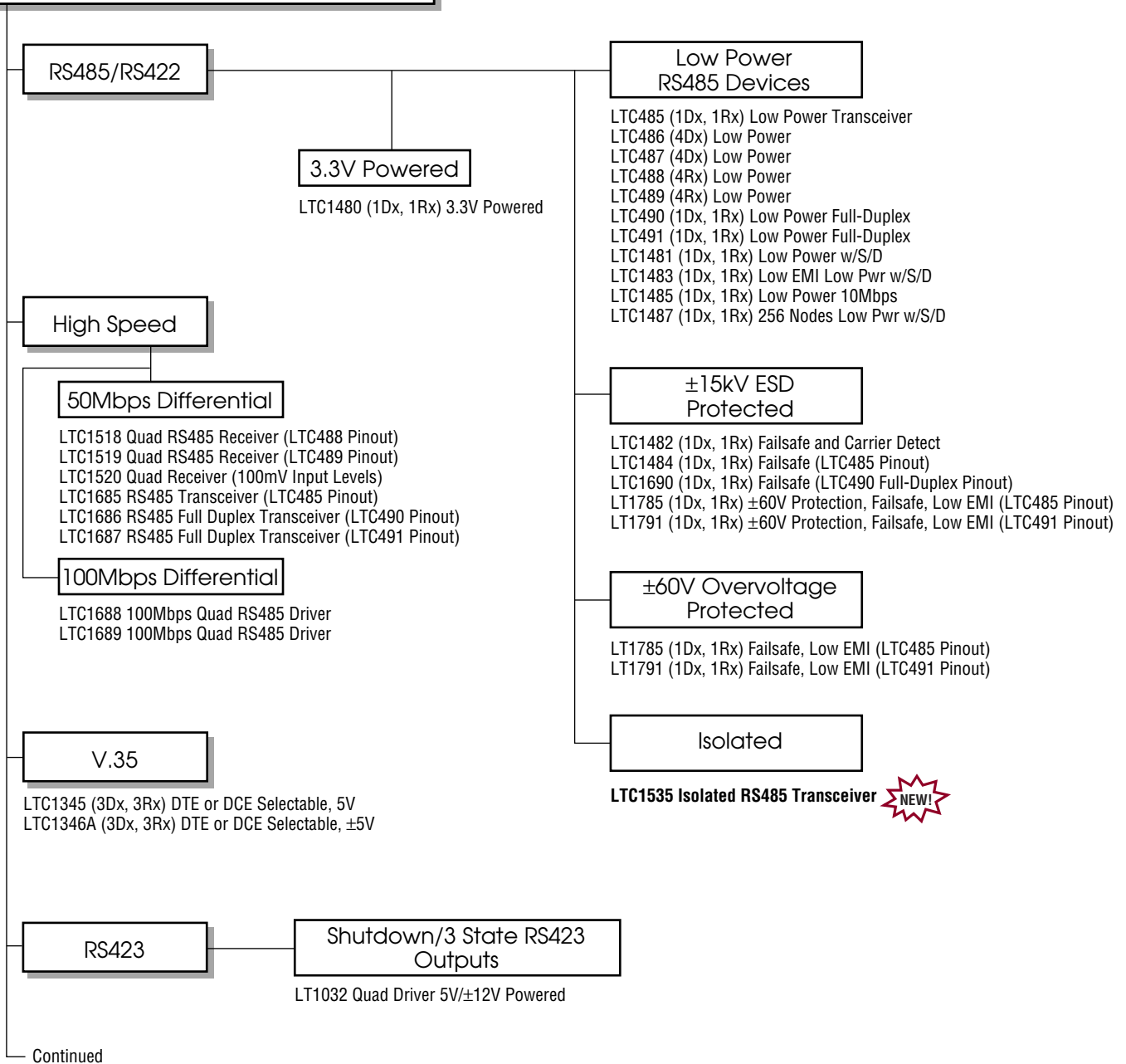
SMBus

LTC1694/LTC1694-1 SMBus Accelerator, SOT-23
LTC1623 Dual, FET Switch Drivers with SMBus Control
LTC1663 10-Bit V_{OUT} DAC in SOT-23
LTC1710 Dual High Side Switch with SMBus Control
LT1786F SMBus Programmable CCFL Switching Regulator
LTC1427-50 SMBus Interface Current Output DAC, SO-8

Infrared Data Receiver

LT1319 General Purpose (Sharp, Newton, TV Remote)
LT1328 IrDA® Compatible (SIR, FIR, 4ppm)

LocalTalk is a registered trademark of Apple Computer, Inc.
IrDA is a registered trademark of Infrared Data Association.

STANDARD INTERFACE


STANDARD INTERFACE

RS232/562

PC Serial Ports Receivers Active in Shutdown, Charge Pump
3 Drivers, 5 Receivers Included, $\pm 10\text{kV}/\pm 15\text{kV}$ ESD Protection

3V Supply

LT1331 1 Rec'r Active in Shutdown, EIA562 Compatible
 LT1332 1 Rec'r Active in Shutdown, 3V Logic, 12V Supply
 LTC1348 5 Receivers Active in Shutdown, 3V Logic
 LTC1327 3V Logic, EIA562
 LTC1350 2 Receivers Active in Shutdown, 3V Logic, EIA562

5V Supply

LT1137A 3-State Outputs, $\pm 15\text{kV}$
 LT1141A 3-State Outputs, $\pm 15\text{kV}$
 LT1237 1 Receiver Active in Shutdown, $\pm 15\text{kV}$
 LT1330 1 Receiver Active in Shutdown, Also 3V Logic
 LT1331 1 Receiver Active in Shutdown, 3V or 5V Logic
 LTC1337 3-State Outputs
 LT1341 1 Receiver Active in Shutdown
 LT1342 3V Logic, 3V Supply
 LTC1347 5 Receivers Active in Shutdown
 LTC1349 2 Receivers Active in Shutdown
 LT1537 5 Active in Shutdown, 3-State Outputs, 250kBaud

Single Supply Charge Pump Included, 3-State Outputs
2 Drivers/2 Receivers When Shutdown, $\pm 10\text{kV}/\pm 15\text{kV}$ ESD, Immune to Latch-Up

3V Supply

LTC1385 3V Logic, EIA562, 3-State, Shutdown
 LTC1386 3V Logic, EIA562

5V Supply

LT1180A 3-State, Shutdown
 LT1181A Very Low Power, 3-State, Shutdown
 LT1280A Very Low Power
 LT1281A Very Low Power
 LT1381 Narrow SO Pkg
 LTC1382 Ultra-Low Power, 3-State, Shutdown
 LTC1383 Ultra-Low Power
 LTC1384 2 Active in Shutdown, Rx Enable, 3-State, Shutdown
LT1780 **250kBaud, 3-State, Shutdown, $\pm 15\text{kV}$**
LT1781 **250kBaud, $\pm 15\text{kV}$**



Other Driver/Receiver Combinations

$\pm 10\text{kV}/\pm 15\text{kV}$ ESD

5V Supply

(With Charge Pump)

LT1130A (5Dx, 5Rx) Synchronous Communications
 LT1131A (5Dx, 4Rx) Modem/DCE Interface, 3-State, Shutdown
 LT1132A (5Dx, 3Rx) Modem/DCE Interface
 LT1133A (3Dx, 5Rx) PC/DTE Interface, $\pm 15\text{kV}$
 LT1134A (4Dx, 4Rx) 5V 1488/1489 Upgrade
 LT1136A (4Dx, 5Rx, PC/DTE Interface, 3-State, Shutdown
 LT1138A (5Dx, 3Rx) Modem/DCE Interface, 3-State, Shutdown
 LT1139A (4Dx, 4Rx) 1488/89 Upgrade, 12V Req'd, 3-State, Shutdown
 LTC1338 (5Dx, 3Rx) Ultra Low Power, 3-State, Shutdown

5V, $\pm 12\text{V}$ Supplies

(No Charge Pump)

LT1039-16 (3Dx, 3Rx) MC145406 Upgrade
 LT1039A (3Dx, 3Rx) 3-State, Shutdown, $\pm 15\text{kV}$
 LT1135A (5Dx, 3Rx) Modem/DCE Interface
 LT1140A (5Dx, 3Rx) Modem/DCE Interface, 3-State, Shutdown

$\pm 12\text{V}$ Supplies

LT1030 (4Dx) 1488 Upgrade, 3-State, Shutdown
 LT1032 (4Dx) 1488 Upgrade, RS423, 3-State, Shutdown

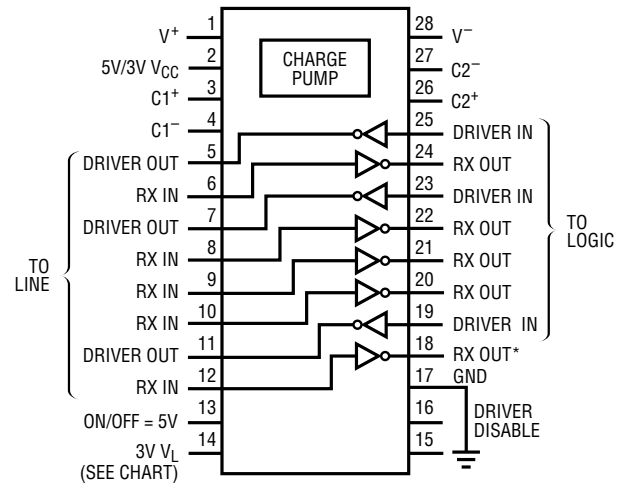
Complete RS232 PC Serial Ports: 3 Drivers, 5 Receivers

- ±15kV ESD Protection (LT1137A/LT1237)
- ±10kV ESD Protection (All Others)
- 3V Logic Compatible
- Receiver Keep-Alive in Shutdown
- SO, SSOP Packages
- Ultralow Power (LTC1337: 1.5mW)
- Flowthrough Architecture
- 0.1µF Capacitors
- Low Power Shutdown
- 120kBd Operation
- Capable of Mouse Driving
- 3.3V or 5V Powered

LOGIC	SUPPLY VOLTAGE	ADD'L SUPPLY	TYP POWER (mW)	I _Q SHDN (µA)	# Rx ALIVE IN SD	Dx DIS-ABLE	ESD (kV)	CAPS	OUTPUT LEVEL	DEVICE
3V	3V		1.5	1	0		10	4 x 0.1µF	RS562	LTC1327
3V	3V		1.5	0.2 10	0 5		10	5 x 0.1µF	RS232	LTC1348
3V	3V		1.5	35	2		10	4 x 0.1µF	RS562	LTC1350
3V	3V	+12V	1.5	70	1		10	1 x 10µF 1 x 1.0µF	RS232	LT1332
3V	5V	3V	30	60	1	X	10	1 x 1.0µF 5 x 0.1µF	RS232	LT1330
3V	3V		42	60	1	X	10	6 x 0.1µF	RS562*	LT1331
3V	5V	3V	34	60	1	X	10	6 x 0.1µF	RS232	
3V	5V	3V	60	1	0	X	10	6 x 0.1µF	RS232	LT1342
5V	5V		1.5	1	0		10	4 x 0.1µF	RS232	LTC1337
5V	5V		1.5	35	2		10	4 x 0.1µF	RS232	LTC1349
5V	5V		1.5	80	5		10	4 x 0.1µF	RS232	LTC1347
5V	5V		30	60	1	X	15	1 x 1.0µF 5 x 0.1µF	RS232	LT1237
5V	5V		60	1	0	X	15	6 x 0.1µF	RS232	LT1137A
5V	5V		60	60	1	X	10	6 x 0.1µF	RS232	LT1341

Note: Devices requiring 6 x 0.1µF capacitors can use 2 x 0.2µF and 2 x 0.1µF capacitors.
*562-compatible

Typical Pin Configuration†



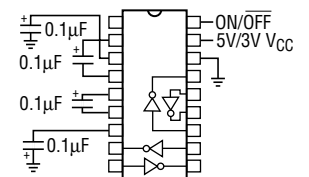
* REMAINS ALIVE IN SHUTDOWN DEPENDING ON PART TYPE

† EXCEPT LT1332 AND LTC1348

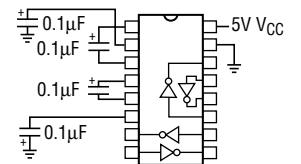
Single Supply RS232 2 Driver/2 Receiver Circuits

- ±15kV ESD Protection (LT1780/LT1781)
- ±10kV ESD Protection (All Others)
- 0.1µF Charge Pump Capacitors
- Immune to Latch-Up
- Low Power Shutdown
- 3-State Outputs When Shut Down

SUPPLY VOLTAGE	TYP POWER (mW)	I _Q SHDN (µA)	# Rx ALIVE IN SD	MAX DATA RATE	ESD (kV)	OUTPUT LEVEL	PACKAGE	DEVICE
3V	0.66	0.2	0	120k	10	RS562	N18, SW18	LTC1385
3V	0.66			120k	10	RS562	N16, SW16	LTC1386
5V	1.1	0.2	0	120k	10	RS232	N18, SW18	LTC1382
5V	1.1			120k	10	RS232	N16, S16	LTC1383
5V	1.1	35	2	120k	10	RS232	N18, SW18	LTC1384
5V	40			250k	10	RS232	S16	LT1381
5V	40	1.0	0	250k	10	RS232	N18, SW18	LT1280A
5V	40			250k	10	RS232	N16, SW16	LT1281A
5V	45	1.0	0	250k	10	RS232	N18, SW18	LT1180A
5V	45			250k	10	RS232	N16, SW16	LT1181A
5V	40	1.0	0	250k	15	RS232	N18, SW18	LT1780
5V	40	1.0	0	250k	15	RS232	N16, S16, SW16	LT1781



18-Pin Configuration



16-Pin Configuration

Dual Protocol Interface Solutions

- 120Kbd in EIA/TIA562 or RS232
- 10MBd in RS485/RS422
- Power-Up/Down Glitch-Free Outputs
- Driver Maintains High Impedance in Three-State, Shutdown or With Power Off
- Thermal Shutdown Protection
- I/O Lines Can Withstand $\pm 25V$
- Withstands Repeated $\pm 10kV$ ESD Pulses

SINGLE-ENDED			DIFFERENTIAL			MODE	SUPPLY VOLTAGE	COMMENTS	PKG	DEVICE
STD	Tx	Rx	STD	Tx	Rx					
562	2	1	422	1	1	Mode = 0	5V	LocalTalk DCE, Configurable Rec.	SW24	LTC1318
562	2	2	422	1	0	Mode = 1				
562	2	2				SEL = 0	$\pm 5V$	User Configurable Includes Loopback Mode	NW24 SW24	LTC1321
232	2	2				SEL = 0	5V, $\pm 6.5V$			
			422/485	2	2	SEL = 1	$\pm 5V$			
562	4	4				SEL = 0	$\pm 5V$	User Configurable Includes Loopback Mode	NW24 SW24	LTC1322
232	4	4				SEL = 0	5V, $\pm 6.5V$			
			422/485	2	2	SEL = 1	$\pm 5V$			
232	4	4				SEL = 0	5V	User Configurable Includes Loopback Mode	NW28 SW28 SSOP28	LTC1334
			422/485	2	2	SEL = 1				
562	4	4				SEL = 0	$\pm 5V$	User Configurable Common Output Enable, Loopback	NW24 SW24	LTC1335
			422/485	2	2	SEL = 1				
232	2	2	422/485	1	1		5V	Multiprotocol Transceiver	SSOP20 SW20	LTC1387

RS485/RS422 Interface

CONFIGURATION	V _{CC}	MAX DATA RATE	MAX I _{CC}	MAX I _{CC} (SD)	INDUSTRY STANDARD PINOUT	ESD	COMMENTS	PART NUMBER
Full Duplex Dr./Rec.	5V	2.5M	500 μ A		75179	10kV	Industry Standard Low Power	LTC490
Full Duplex Dr./Rec.	5V	2.5M	500 μ A		75ALS180	10kV	Industry Standard, Low Power	LTC491
Full Duplex Dr./Rec.	5V	350k	13mA		N/A	8kV	Isolated RS485	LTC1535
Full Duplex Dr./Rec.	5V	52M	7mA		75179	4kV	Precision Delay RS485 Fail-Safe Transceiver (LTC490 Pinout)	LTC1686
Full Duplex Dr./Rec.	5V	52M	7mA		75ALS180	4kV	Precision Delay RS485 Fail-Safe Transceiver (LTC491 Pinout)	LTC1687
Full Duplex Dr./Rec.	5V	5M	600 μ A		75179	15kV	Differential Driver Receiver Pair with Fail Safe Receiver Output	LTC1690
Full Duplex Dr./Rec.	5V	250k	9mA	0.3mA	75ALS180	15kV	60V Fault Protected RS485/422 Transceivers (LTC491 Pinout)	LT1791
Quad Driver	5V	10M	150 μ A		75172	4kV	26LS31 (RS422) Industry Standard, Low Power	LTC486
Quad Driver	5V	10M	150 μ A		75174	4kV	3487 (RS422) Industry Standard, Low Power	LTC487
Quad Driver	5V/3V	100M	9mA		75172	4kV	100Mbps RS485 Quad Driver	LTC1688
Quad Driver	5V/3V	100M	9mA		75174	4kV	100Mbps RS485 Quad Driver	LTC1689
Quad Receiver	5V	10M	10mA		75173	10kV	26LS32 (RS422), Industry Standard, Low Power	LTC488
Quad Receiver	5V	10M	10mA		75175	10kV	3486 (RS422), Industry Standard, Low Power	LTC489
Quad Receiver	5V	52M	12mA		75173	4kV	High Speed, Precision Delay Quad Line Drivers	LTC1518
Quad Receiver	5V	52M	12mA		75175	4kV	High Speed, Precision Delay Quad Line Drivers	LTC1519
Transceiver	5V	2.5M	500 μ A		75176	4kV	Industry Standard, Low Power	LTC485
Transceiver	3V	2.5M	500 μ A	1 μ A	75176	10kV	True RS485 on 3V Supply	LTC1480
Transceiver	5V	2.5M	500 μ A	10 μ A	75176	10kV	Shutdown	LTC1481
Transceiver	5V	4M	700 μ A	20 μ A	N/A	15kV	Low Power Transceiver with Receiver Fail Safe and Carrier Detect	LTC1482
Transceiver	5V	150k	500 μ A	10 μ A	75176	10kV	Low EMI, Shutdown	LTC1483
Transceiver	5V	4M	900 μ A	20 μ A	75176	15kV	Low Power Transceiver with Receiver Fail Safe	LTC1484
Transceiver	5V	10M	3.5mA		75176	4kV	High Speed	LTC1485
Transceiver	5V	250k	200 μ A	10 μ A	75176	10kV	High Input Impedance	LTC1487
Transceiver	5V	52M	7mA		75176	4kV	Precision Delay RS485 Fail-Safe Transceiver	LTC1685
Transceiver	5V	250k	9mA	0.3mA	75176	15kV	60V Fault Protected RS485/422 Transceivers (LTC485 Pinout)	LT1785

