

THE INFINITE POWER OF INNOVATION

18-Line Low Capacitance, µPower SCSI Terminator

PRODUCTION DATA SHEET

DESCRIPTION

The LX5207 is an eighteen line active terminator for the SCSI parallel bus. This SCSI standard recommends active termination at both ends of the SCSI bus.

During disconnect mode, the LX5207 requires a meager 500nA of supply current while offering only 2.5pF of output capacitance. To enter this low power mode, the disconnect pin can be left open (floating) or driven high thereby disconnecting the terminating resistors and placing the internal low dropout regulator into low power mode. In disconnect mode each termination line presents a high impedance to the SCSI bus with the overall effect being to preserve high signal integrity and subsequent reliable, error free communications.

During normal operation, the LX5207 consumes only 800µA of current which is

the lowest enabled supply current of any terminator available on the market today. Linfinity's proprietary BiCMOS low dropout regulator architecture enables this unique and very efficient operating characteristic.

The LX5207 also offers a precisely trimmed channel output current specified to a 5% tolerance. The maximum value of the output current is trimmed as closely as possible to the SCSI standard maximum specification to give the highest possible noise margin for fast SCSI operation. And finally, the LX5207 sinks up to 100mA of current making it compatible with today's fast active negation drivers.

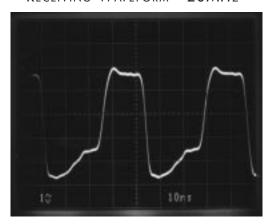
The LX5207 is a superior, pin-for-pin replacement for a variety of industry products such as the UC5601, UC5602, UC5608, and UC5609.

KEY FEATURES

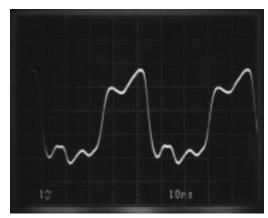
- 2.5pf OUTPUT CAPACITANCE DURING DISCONNECT
- 500nA SUPPLY CURRENT IN DISCONNECT
- 800µA SUPPLY CURRENT DURING NORMAL OPERATION
- 100mA SINK CURRENT FOR ACTIVE NEGATION
- LOGIC COMMAND DISCONNECTS ALL TERMINATION LINES
- CURRENT LIMIT AND THERMAL PROTECTION
- COMPATIBLE WITH SCSI 1, 2, 3, AND FAST-20 STANDARDS
- HOT SWAP COMPATIBLE
- CONSULT FACTORY FOR APPLICATION TEST REPORT: 5207TR

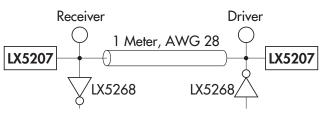
PRODUCT HIGHLIGHT

RECEIVING WAVEFORM - 20MHz



DRIVING WAVEFORM - 20MHz





PACKAGE ORDER INFO T_A (°C) DWP Plastic SOWB 28-pin, Power LX5207CDWP

Note: All surface-mount packages are available in Tape & Reel. Append the letter "T" to part number. (i.e. LX5207CDWPT)

For An In-Depth
Discussion On Applying
SCSI, Request Linfinity
Application Note:
"Understanding The
Single-Ended SCSI Bus"

FOR FURTHER INFORMATION CALL (714) 898-8121

18-Line Low Capacitance, µPower SCSI Terminator

PRODUCTION DATA SHEET

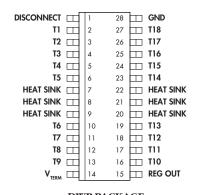
THERMAL DATA

DWP PACKAGE:

THERMAL RESISTANCE-JUNCTION TO LEADS, $\theta_{_{JL}}$	18°C/W
THERMAL RESISTANCE-JUNCTION TO AMBIENT, $\theta_{_{JA}}$	40°C/W

Junction Temperature Calculation: $T_J = T_A + (P_D \times \theta_{JA})$. The θ_{JA} numbers are guidelines for the thermal performance of the device/pc-board system. All of the above assume no ambient airflow.

PACKAGE PIN OUTS



DWP PACKAGE (Top View)

POWER UP / POWER DOWN FUNCTION TABLE

Disconnect	Outputs	Quiescent Current
L	Enabled	800μΑ
Н	HI Z	0.5µA
Open	HI Z	0.5μΑ

18-Line Low Capacitance, µPower SCSI Terminator

PRODUCTION DATA SHEET

RECOMMENDED.	OPERATING C	ONDITION	NS (Note 2)		
Parameter	Symbol	Recommended Operating Conditions			Units
	Symoon	Min.	Тур.	Max.	Units
Termpwr Voltage	V_{TERM}	4		5.25	٧
Signal Line Voltage		0		5	٧
Disconnect Input Voltage		0		V _{TERM}	٧
Output Capacitance on REGOUT		4.7			μF
Operating Virtual Junction Temperature Range					
LX5207C		0		70	°C

Note 2. Range over which the device is functional.

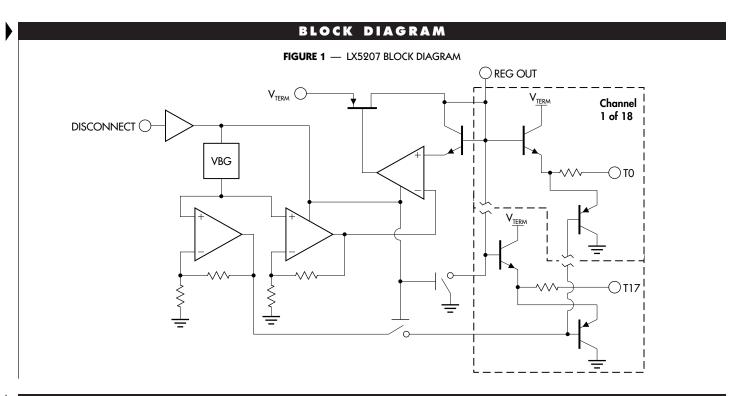
ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, these specifications apply over the operating ambient temperature range of $0^{\circ}\text{C} \leq \text{T}_{\text{A}} \leq 70^{\circ}\text{C}$. Tempwr = 4.75V, Disconnect = 0V. Low duty cycle pulse testing techniques are used which maintains junction and case temperatures equal to the ambient temperature.)

Parameter	Symbol	mbal Tost Conditions		LX5207		
raidilletei	Syllidol	ol Test Conditions		Тур.	Max.	Unit
Supply Current Section						
Termpwr Supply Current		All term lines = Open		0.8	2.0	mA
		All term lines = 0.5V		390	415	mA
Power Down Mode		Disconnect = Open		0.5	1	μA
Output Section (Terminator Li	nes)					
Terminator Impedance		$I_{TERM} = -5mA \text{ to } -15mA$	100	110	120	Ω
Terminator Output High Voltage			2.7	2.9		٧
Max. Output Current		$V_{OUT} = 0.5V, T_A = 25^{\circ}C$	-20.3	-21.8	-23	mA
		$V_{OUT} = 0.5V, 0^{\circ}C \le T_{A} \le 70^{\circ}C$	-19.0	-21.8	-23	mA
		$V_{OUT} = 0.5V, V_{TERM} = 4V, T_A = 25^{\circ}C$	-19.5	-21.8	-23	mA
		$V_{OUT} = 0.5V, V_{TERM} = 4V, 0^{\circ}C \le T_{A} \le 70^{\circ}C$	-18.0	-21.8	-23	mA
Output Leakage		Disconnect = Open, V _{TERM} = 0V to 5.25V		10	400	nA
Output Capacitance		Disconnect = Open		2.5		рF
Sink Current		$V_{OUT} = 4V$	58	70		mA
Regulator Section						
Regulator Output Voltage				3.6		٧
Line Regulation		$V_{TERM} = 4V \text{ to } 6V$		10	20	m۷
Load Regulation		I _{REG} = 0 to -100mA		20	50	m۷
Drop Out Voltage		$I_{REG} = -100 \text{mA}$		0.45	1.0	٧
Short Circuit Current		$V_{REG} = 0V$		-800	-1100	mA
Thermal Shutdown				150		°C
Disconnect Section						
Disconnect Threshold			0.8		2.0	٧
Input Current		Disconnect = 0V			40	μA

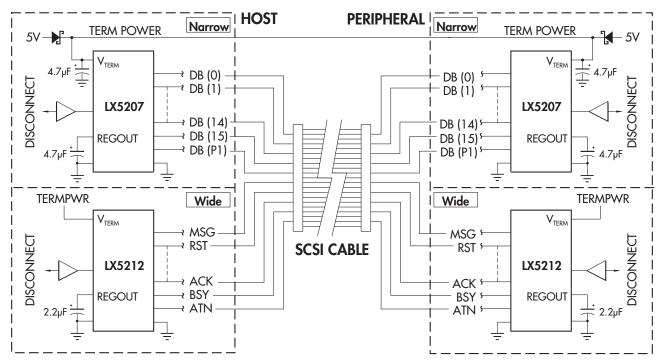
18-Line Low Capacitance, µPower SCSI Terminator

PRODUCTION DATA SHEET



APPLICATION SCHEMATIC

FIGURE 2 — 8/16-BIT SCSI SYSTEM APPLICATION



PRODUCTION DATA - Information contained in this document is proprietary to Lin Finity, and is current as of publication date. This document may not be modified in any way without the express written consent of Lin Finity. Product processing does not necessarily include testing oil parameters. Linfinity reserves the right to change the configuration and performance of the product and to discontine product at any time.

