

18-Line Low Capacitance SCSI Active Terminator

FEATURES

- Complies with SCSI, SCSI-2 and SPI-2 Standards
- 6pF Channel Capacitance during Disconnect
- 100µA Supply Current in Disconnect Mode
- Meets SCSI Hot Plugging Capability
- -650mA Sourcing Current for Termination
- +200mA Sinking Current for Active Negation
- Provides Active Termination for 18 Lines
- Logic Command Disconnects all Termination Lines
- Trimmed Termination Current to 5%
- Trimmed Impedance to 5%
- Current Limit and Thermal Shutdown Protection

DESCRIPTION

The UC5608 provides 18 lines of active termination for a SCSI (Small Computer Systems Interface) parallel bus. The SCSI standard recommends active termination at both ends of the bus cable.

The UC5608 is pin-for-pin compatible with its predecessors, the UC5601 and UC5602 - 18 Line Active Terminator. Parametrically the UC5608 has a 5% tolerance on impedance and current compared to a 3% tolerance on the UC5601 and the sink current is increased from 20 to 200mA. The low side clamps have been removed. Custom power packages are utilized to allow normal operation at full power conditions (2 Watts).

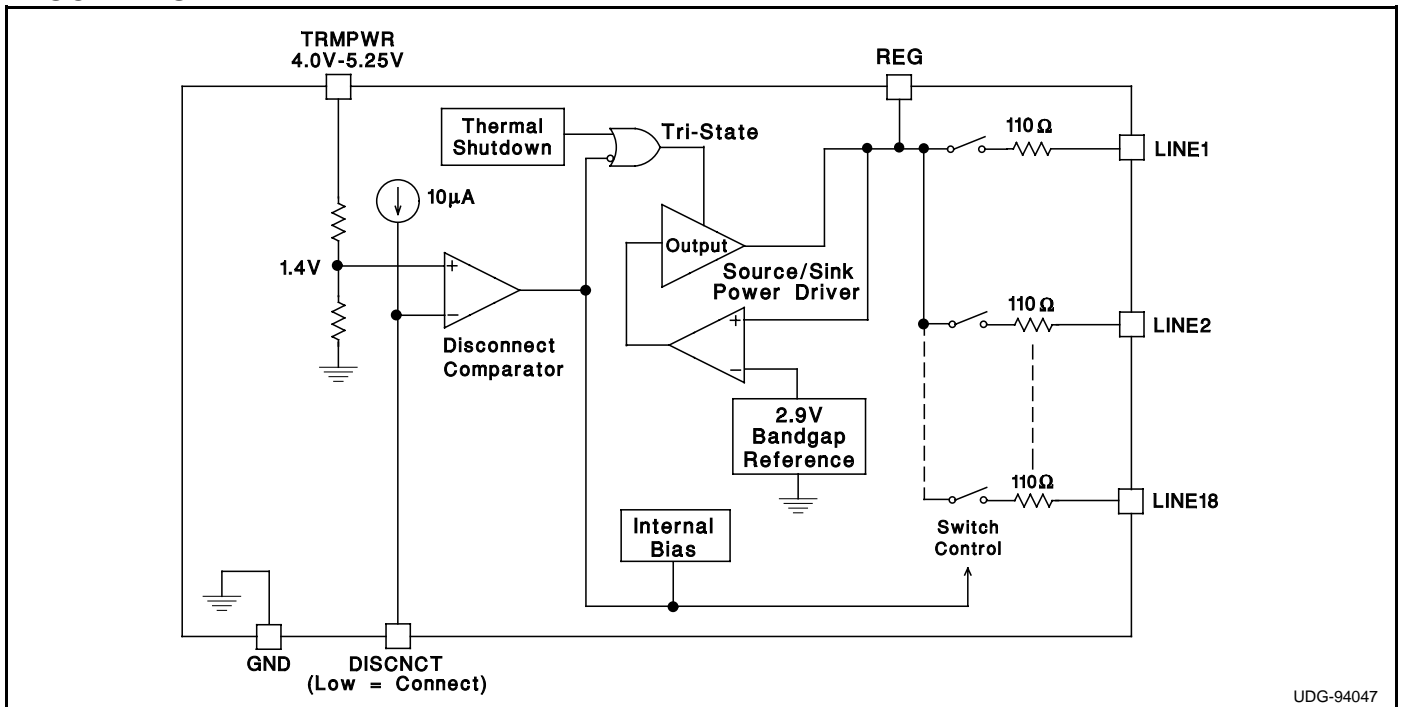
When in disconnect mode the terminator will disconnect all terminating resistors and disable the regulator, greatly reducing standby power. The output channels remain high impedance even without Tempwr applied.

Internal circuit trimming is utilized to trim the impedance to a 5% tolerance and, most importantly, to trim the output current to a 5% tolerance, as close to the max SCSI spec as possible, which maximizes noise margin in fast SCSI operation.

Other features include 4.0 to 5.25V Tempwr, thermal shutdown and current limit.

This device is offered in low thermal resistance versions of the industry standard 28 pin wide body SOIC, 28 pin wide body TSSOP, and 28 pin PLCC, as well as 24 pin DIP.

BLOCK DIAGRAM



UDG-94047

Circuit Design Patented

ELECTRICAL CHARACTERISTICS Unless otherwise stated, these specifications apply for TA = 0°C to 70°C. TRMPWR = 4.75V, DISCNCT = Ground. TA = TJ.

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS	
Supply Current Section						
Tempwr Supply Current	All termination lines = Open		17	25	mA	
	All termination lines = 0.5V		400	430	mA	
Power Down Mode	DISCNCT = Open		100	150	μA	
Output Section (Terminator Lines)						
Terminator Impedance	Δ LINE = -5mA to -15mA	104.5	110	115.5	Ohms	
Output High Voltage	VTRMPWR = 4V (Note 1)	2.65	2.9	3.0	V	
Max Output Current	VLINE = 0.5V	TJ = 25°C	-20.3	-21.5	-22.4	mA
		0°C < TJ < 70°C	-19.8	-21.5	-22.4	mA
Max Output Current	VLINE = 0.5V, TRMPWR = 4V (Note 1)	TJ = 25°C	-19.5	-21.5	-22.4	mA
		0°C < TJ < 70°C	-19.0	-21.5	-22.4	mA
	VLINE = 0.2V, TRMPWR = 4V to 5.25V	0°C < TJ < 70°C	-21.6	-24.0	-25.4	mA
Output Leakage	DISCNCT = 4V	TRMPWR = 0V to 5.25V REG = 0V	VLINE = 0 to 4V	10	400	nA
		TRMPWR = 0V to 5.25V, REG = Open VLINE = 0V to 5.25V	VLINE = 5.25V	100	μA	
				10	400	nA
Output Capacitance	DISCNCT = Open (Note 2)		6	7	pF	
Regulator Section						
Regulator Output Voltage		2.8	2.9	3	V	
Regulator Output Voltage	All Termination Lines = 4V	2.8	2.9	3	V	
Line Regulation	TRMPWR = 4V to 6V		10	20	mV	
Drop Out Voltage	All Termination Lines = 0.5V		1.0	1.2	V	
Short Circuit Current	VREG = 0V	-450	-650	-950	mA	
Sinking Current Capability	VREG = 3.5V	100	200	500	mA	
Thermal Shutdown			170		°C	
Thermal Shutdown Hysteresis			10		°C	
Disconnect Section						
Disconnect Threshold		1.1	1.4	1.7	V	

Note 1: Measuring each termination line while other 17 are low (0.5V).

Note 2: Guaranteed by design. Not 100% tested in production.

APPLICATION INFORMATION

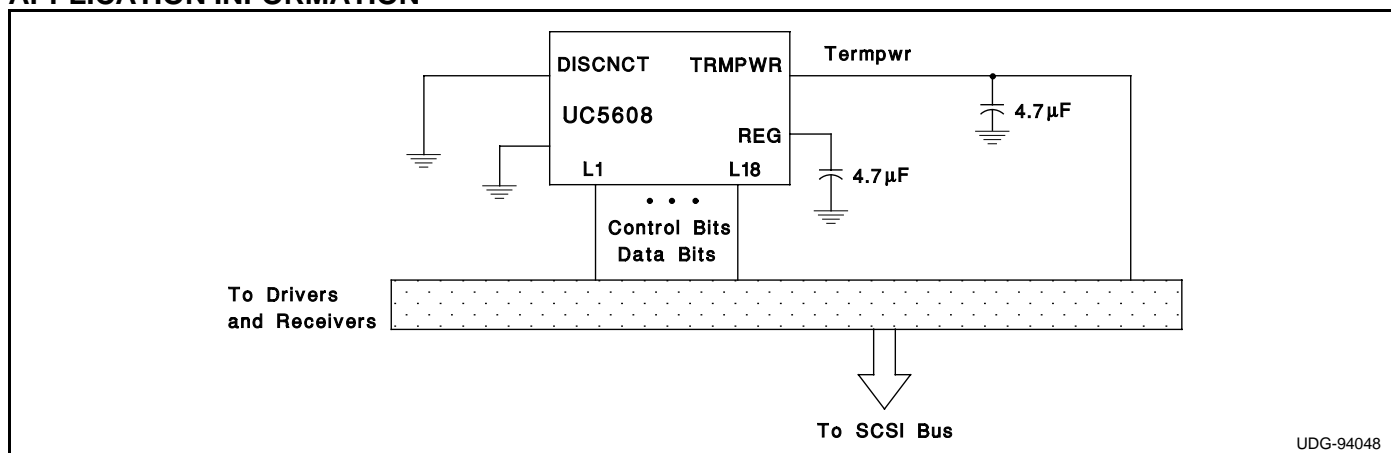


Figure 1: Typical SCSI Bus Configuration