



REG5601

# SCSI 18-LINE ACTIVE TERMINATOR

## FEATURES

- FULLY COMPLIANT WITH SCSI-2 SPECIFICATIONS
- ACTIVE 18-LINE TERMINATOR
- INTERNAL 2.9V REGULATOR
- ON-CHIP TERMINATION RESISTORS
- DISCONNECT ALL TERMINATION RESISTORS WITH A SINGLE LOGIC COMMAND
- POWER-DOWN MODE: 150µA max
- OUTPUT CAPACITANCE IN DISCONNECT MODE: 10pF typ
- CURRENT LIMIT AND THERMAL SHUT-DOWN PROTECTION
- 28-Lead SOIC PACKAGE
- SECOND SOURCE FOR UC5601DWP

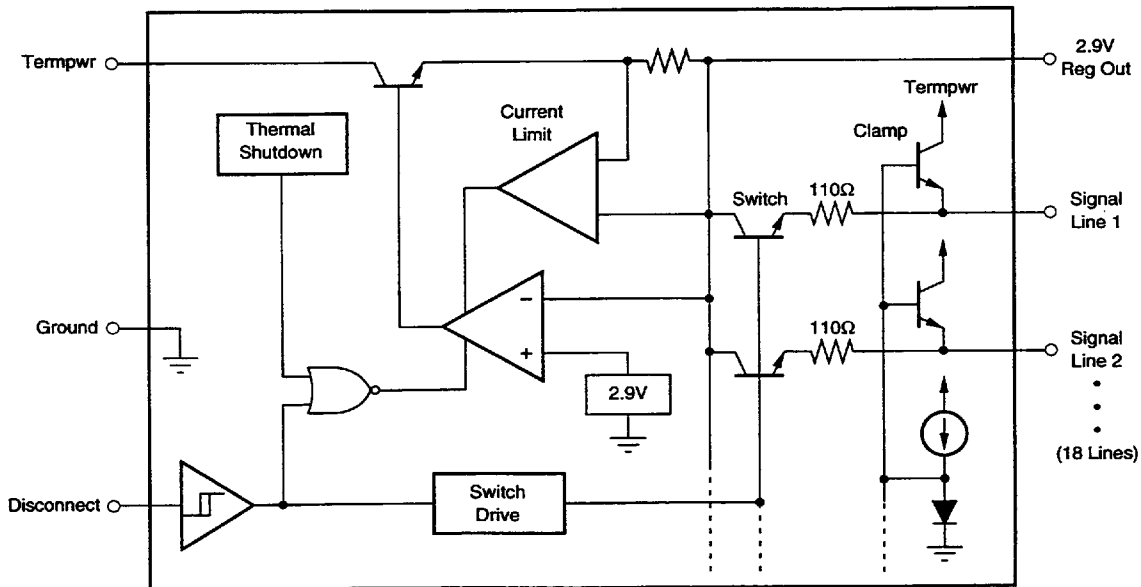
## DESCRIPTION

The REG5601 is an 18-line active terminator for SCSI-2 (Small Computer Systems Interface) circuitry. On-chip resistors and 2.9V regulator provide the prescribed 110Ω termination for low power dissipation and high speed data transmission.

All line connections can be disconnected from the bus with a single logic control line to reduce standby power consumption. Output lines remain high impedance without power applied. Each line is individually clamped at ground to dissipate negative-going glitches.

The 2.9V regulator is current-limited and thermally protected. Regulated output is available for external circuitry.

The REG5601 is packaged in a 28-lead surface-mount package and is specified for operation over the 0 to 70°C temperature range.



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PDS-1216A

Printed in U.S.A. June, 1994

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# SPECIFICATIONS

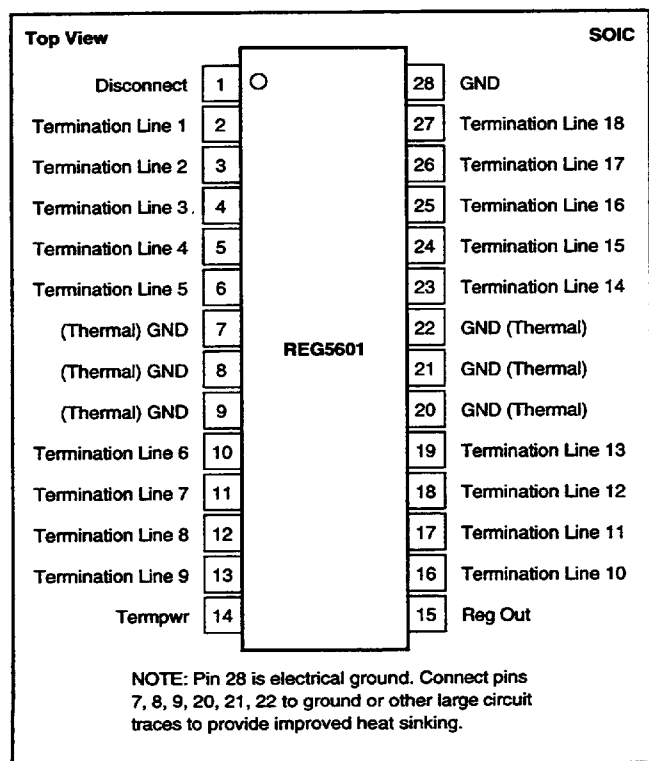
## ELECTRICAL

T<sub>A</sub> = 0°C to +70°C, Temp<sub>pwr</sub> = 4.75V, Disconnect = 0V, unless otherwise specified.

PARAMETERS	CONDITIONS	REG5601U			UNIT
		MIN	TYP	MAX	
<b>POWER SUPPLY</b> Temp <sub>pwr</sub> Supply Voltage Temp <sub>pwr</sub> Supply Current Power-Down Mode	All Termination Lines = Open All V <sub>TERM</sub> = 0.5V Disconnect = Open (High)	4.0	14 385 100	5.25 25 430 150	V mA mA µA
<b>TERMINATION LINES</b> Termination Impedance Output High Voltage Maximum Output Current Output Clamp Level Output Leakage Output Capacitance	ΔI <sub>TERM</sub> = 5mA to 15mA Temp <sub>pwr</sub> = 4V, Note 1 V <sub>TERM</sub> = 0.5V V <sub>TERM</sub> = 0.5V, Temp <sub>pwr</sub> = 4V, Note 1 I <sub>TERM</sub> = -30mA Disconnect = Open (High), Temp <sub>pwr</sub> = 0V to 5.25V Disconnect = Open (High)	107 2.65 20.5 19.4 -0.2	110 2.8 21.7 21 -0.05	115 22.4 22.4 0.1 400	Ω V mA mA V nA pF
<b>REGULATOR</b> Regulator Output Voltage Line Regulation Load Regulation Drop-Out Voltage Short-Circuit Current Current Sink Thermal Shutdown	Temp <sub>pwr</sub> = 4V to 6V I <sub>REG</sub> = 0 to 400mA All V <sub>TERM</sub> = 0.5V, ΔV <sub>REG</sub> = 100mV V <sub>REG</sub> = 0V V <sub>REG</sub> = 3.5V	2.8 8	2.9 6 20 1.0 11 170	3.0 20 50 1.2 1650	V mV mV V mA mA °C
<b>DISCONNECT LOGIC INPUT</b> Disconnect Threshold Threshold Hysteresis Input Current (Internal Pull-Up)	Disconnect = 0V	0.8	1.6 200 6	2.0 15	V mV µA
<b>TEMPERATURE RANGE</b> Operating Storage θ <sub>JL</sub> (junction-to-lead) θ <sub>JA</sub> (junction-to-ambient)		0 -40	18 38	70 150	°C °C °C/W °C/W

NOTE: (1) Measurement of each termination line while the other 17 lines are held low (0.5V).

## CONNECTION DIAGRAM



## ABSOLUTE MAXIMUM RATINGS

Temp <sub>pwr</sub> Voltage	..... +7V
Signal Line Voltage	..... 0V to +7V
Regulator Output Current	..... 1.65A
Power Dissipation	..... 2.5W
Operating Junction Temperature	..... -40°C to +150°C
Storage Temperature	..... -40°C to +150°C

## ORDERING INFORMATION

MODEL	PART MARKING	PACKAGE
REG5601U	REG5601U	28-Lead SOIC
REG5601U-TR	REG5601U	28-Lead SOIC on Tape & Reel

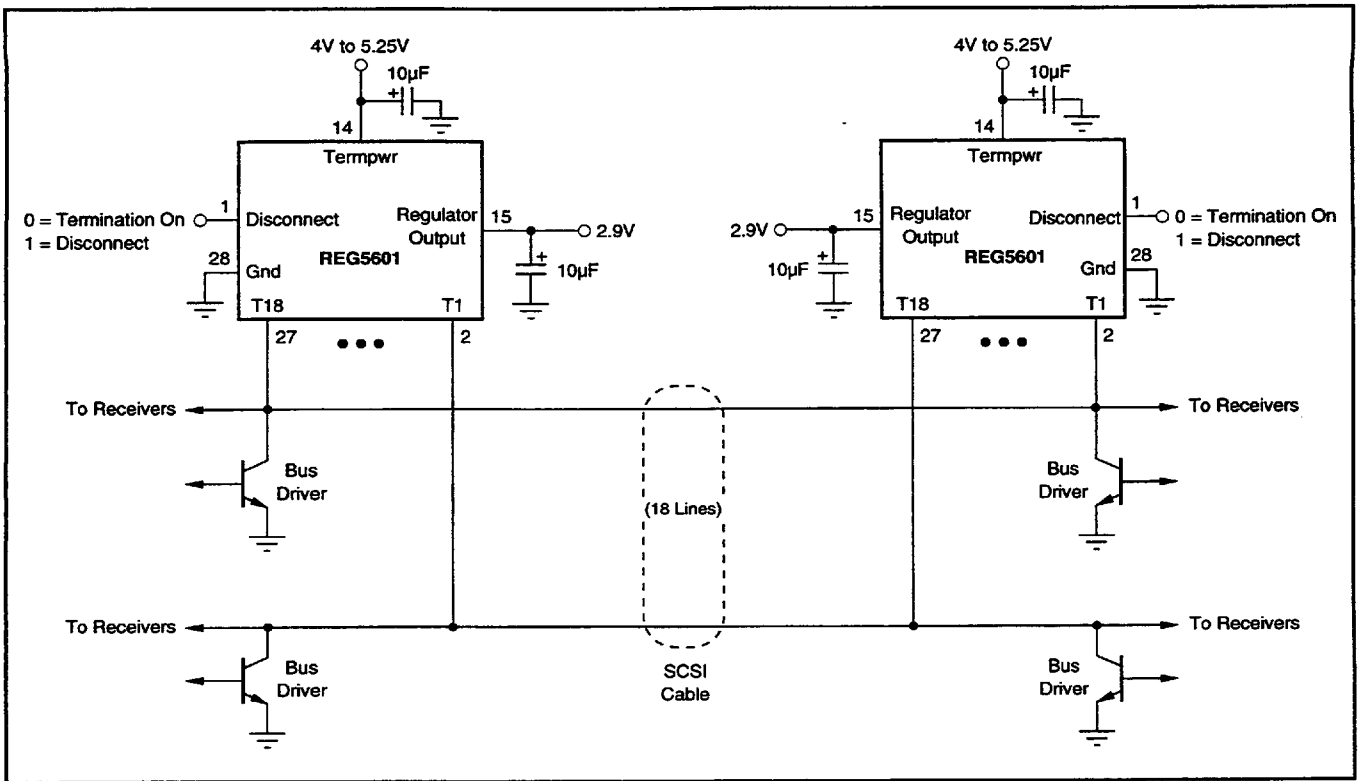
NOTE: Tape and reel conforms to EIA-481 standards. Reel diameter is 360mm, tape width is 24mm, part pitch is 16. Standard quantity is 1000 per reel.

## PACKAGING INFORMATION

MODEL	PACKAGE	PACKAGE DRAWING NUMBER
REG5601U	Plastic 28-Lead SOIC	217

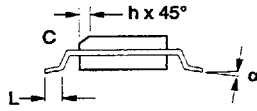
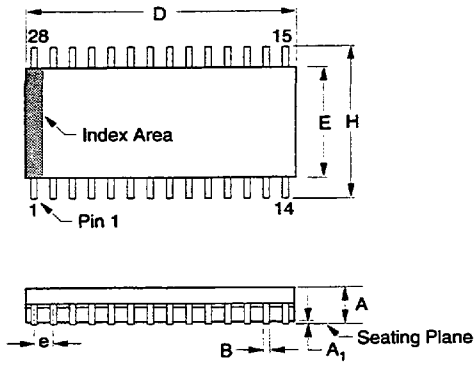
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# PRODUCT APPLICATION FOR STANDARD SCSI CONFIGURATION



# MECHANICAL

Package Number 217— 28-Pin Plastic SOIC



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.093	.104	2.36	2.64
A <sub>1</sub>	.004	.011	0.10	0.28
B	.014	.019	0.36	0.48
C	.0095	.012	0.24	0.30
D <sup>(2)</sup>	.697	.712	17.70	18.08
E <sup>(2)</sup>	.292	.299	7.42	7.59
e	.050 BASIC		1.27 BASIC	
H	.394	.419	10.01	10.64
h <sup>(3)</sup>	.010	.029	0.25	0.74
L <sup>(4)</sup>	.016	.050	0.41	1.27
N <sup>(5)</sup>	28		28	
α	0°	8°	0°	8°

**NOTES:**

1. Dimensioning and tolerancing per ANSI Y14.5M-1982.
2. "D" and "E" do not include mold flash or

- protrusions. Mold flash or protrusions shall not exceed 0.15mm (.086 in).
3. The chamfer on the body is optional. If it is not present, a visual index feature must be located within the crosshatched area.
  4. "L" is the length of terminal for soldering to a substrate.
  5. "N" is the number of terminal positions.
  6. Lead to lead coplanarity shall be less than .004 inches from the seating plane.