ISI IDEAL SEMICONDUCTOR INC.

"Your Best Defense Against Obsolescence"

NE5045
Seven-Channel RC Decoder

Product Specification

Linear Products

DESCRIPTION

The NE5045 is a serial input, parallel output, decoder intended for applications in pulse width or pulse position modulation systems. The serial input pulse, either positive or negative, is shaped and amplified before being fed to the counter/decoder. An integrating type sync. separator detects pulses greater than $t_W = R_S C_S$. The amplified input pulse triggers an internal one-shot (minimum pulse) which in turn clocks the counter-decoder, thereby enhancing system noise rejection. A missing pulse detector resets the decoder during the sync. pause. An internal voltage regulator supplies power for the radio receiver, providing excellent isolation from the power supply as well as the decoder logic.

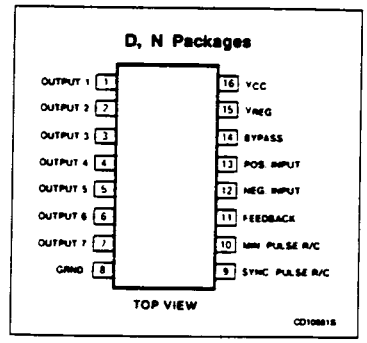
FEATURES

- **Decodes up to 7 channels**
- **High gain input amplifier**
- **Externally set sync. pause and minimum pulse**
- **Wide supply voltage range, 3.6V – 8V**
- **Positive or negative pulse inputs**
- **Noise and flutter rejection**
- **Outputs reset to zero without inputs**
- **Compatible with all transmission mediums**

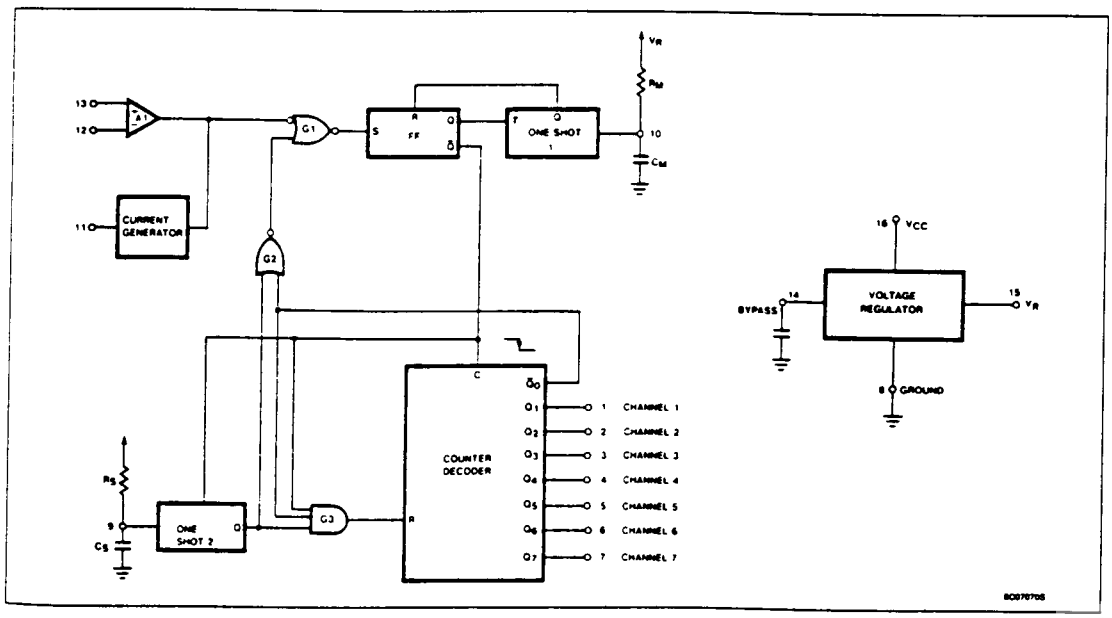
APPLICATIONS

- **Radio-controlled aircraft, cars, boats, trains**
- **Industrial controllers**
- **Remote-controlled entertainment systems**
- **Security systems**
- **Instrumentation recorders/ controls**
- **Remote analog/digital data transmission**
- **Automotive sensor systems**
- **Robotics**
- **Telemetry**

PIN CONFIGURATION



BLOCK DIAGRAM



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Seven-Channel RC Decoder NE5045

ORDERING INFORMATION

DESCRIPTION	TEMPERATURE RANGE	ORDER CODE
16-Pin Plastic SO	0 to +70°C	NE5045D
16-Pin Plastic DIP	0 to +70°C	NE5045N

ABSOLUTE MAXIMUM RATINGS[1]

SYMBOL	PARAMETER	RATING	UNIT
V_{CC}	Supply voltage	10	V
I_{OUT}	Regulator output current	−25	mA
	Decoded output current	±5	mA
	Pause input voltage	0 to V_R	V
V_{IN}	Input amplifier voltage	0 to V_R	V
T_A	Operating temperature	0 to +70	°C
T_{STG}	Storage temperature	−65 to +150	°C

NOTE:
1. T_A = 25°C unless otherwise stated.

DC ELECTRICAL CHARACTERISTICS

Standard conditions: T_A = 25°C, V_{CC} = 5.0V, unless otherwise stated, using Test Circuit.

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			Min	Typ	Max	
Power supply requirements						
V_{CC}	Power supply voltage range	Test circuit	3.6		8.0	V
I_{CC}	Power supply current	Excluding input bias current		9.0	14.0	mA
Voltage regulator						
V_R	Output voltage		3.7	4.1	4.5	V
I_R	Output current	$V_R \geq 3.7V$			−15	mA
	Line regulation	V_{CC} = 6V to 8V		0.01	0.05	V/V
	Voltage drop	V_{CC} = 4V, I_R = −10mA			1.3	V
Input amplifier						
I_{BIAS}	Input bias current			10	100	nA
V_{IN}	Input voltage range		2.0		4.0	V
	Open-loop gain			60		dB
	Feedback current		100	200	400	µA
	Detection threshold	Test circuit, ΔV12 & 13		8	20	mV
t_S	Sync. pause time	R_S C_S = 6.0ms	5.1	6.0	6.9	ms
t_M	Minimum pulse time	R_M C_M = 500µs	405	475	545	µs
Outputs — all channels						
V_{OL}	Output voltage LOW	I_{SINK} = 1mA		0.25	0.5	V
V_{OH}	Output voltage HIGH	I_{SOURCE} = 2mA	2.7			V