



Current Drivers

NH0016CN
NH0017CN(SH2200P)
NH0018CN

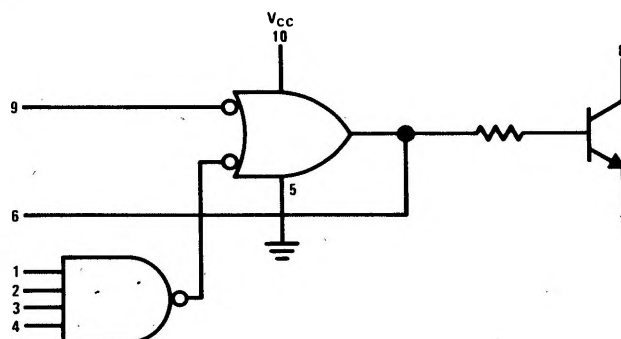
high voltage high current drivers

general description

This high-voltage, high-current driver family consists of hybrid integrated circuits which provide a wide range of output currents and output voltages. Applications include driving lamps, relays, cores, and other devices requiring up to 500 mA and

withstanding voltages up to 100V. Logic flexibility is provided through a 4-input NAND gate, a NOR input and an input which bypasses the gating and connects to the base of the output transistor.

logic diagram



NSC DESIGNATION	SH DESIGNATION	PACKAGE	OUTPUT CHARACTERISTICS	
			Maximum Standoff Voltage	Current
NH0016CN	N/A	Silicone DIP	70V	250 mA
NH0017CN	SH2200P	Silicone DIP	50V	500 mA
NH0018CN	N/A	Silicone DIP	100V	500 mA

absolute maximum ratings

V_{CC}	8V
Input Voltage	8V
Collector Voltage	NH0016CN 70V
	NH0017CN 50V
	NH0018CN 100V
Output Surge Current	NH0016CN 1.0A
	NH0017CN & NH0018CN 2.0A
Power Dissipation	455mW
Operating Temperature Range	0°C to +70°C
Storage Temperature	-65°C to +150°C

electrical characteristics

TEST NO.	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	SENSE	LIMITS	
												MIN	MAX
2	V_{IH}	V_{IH}	V_{IH}	V_{IH}	GND		GND	I_{OL1}		V_{CC}	V_8		V_{OL1}
3	V_{IL}				GND		GND	I_{OL1}	V_{IL}	V_{CC}	V_8		V_{OL1}
4		V_{IL}			GND		GND	I_{OL1}	V_{IL}	V_{CC}	V_8		V_{OL1}
5			V_{IL}		GND		GND	I_{OL1}	V_{IL}	V_{CC}	V_8		V_{OL1}
6				V_{IL}	GND		GND	I_{OL1}	V_{IL}	V_{CC}	V_8		V_{OL1}
7	V_{IL}				GND	I_{OL2}				V_{CC}	V_6		V_{OL2}
8		V_{IL}			GND	I_{OL2}				V_{CC}	V_6		V_{OL2}
9			V_{IL}		GND	I_{OL2}				V_{CC}	V_6		V_{OL2}
10				V_{IL}	GND	I_{OL2}				V_{CC}	V_6		V_{OL2}
11				GND	GND	I_{OL2}			V_{IH}	V_{CC}	V_6		V_{OL2}
12	V_R	GND	GND	GND	GND					V_{CC}	I_1		I_R
13	GND	V_R	GND	GND	GND					V_{CC}	I_2		I_R
14	GND	GND	V_R	GND	GND					V_{CC}	I_3		I_R
15	GND	GND	GND	V_R	GND					V_{CC}	I_4		I_R
16					GND				V_R	V_{CC}	I_9		I_R
17	V_F	V_R	V_R	V_R	GND					V_{CC}	I_1		$-I_F$
18	V_R	V_F	V_R	V_R	GND					V_{CC}	I_2		$-I_F$
19	V_R	V_R	V_F	V_R	GND					V_{CC}	I_3		$-I_F$
20	V_R	V_R	V_R	V_F	GND					V_{CC}	I_4		$-I_F$
21				GND	GND				V_F	V_{CC}	I_9		$-I_F$
22					GND		GND			V_{CC}	V_6	V_{OH1}	
23	GND				GND	I_{OL3}	GND	V_{OX}		V_{CC}	I_8		I_{OX}
24					GND					V_{PD}	I_{10}		I_{PD}
25	GND				GND				GND	V_{MAX}	I_{10}		I_{MAX}

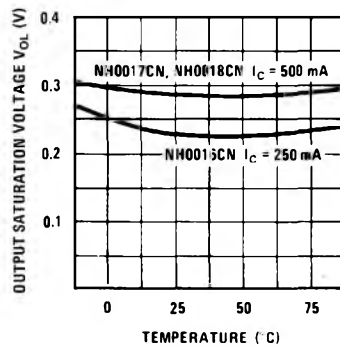
forcing functions

SYMBOL	0°C	+25°C	+70°C	UNITS
V_{CC}	5.0	5.0	5.0	V
V_{PD}		5.0		V
V_{MAX}		8.0		V
V_{IL}	0.85	0.85	0.85	V
V_{IH}	1.9	1.8	1.6	V
V_R	4.5	4.5	4.5	V
V_F	0.45	0.45	0.45	V
V_{OX} (NH0016CN)		70	70	V
V_{OX} (NH0017CN)		50	50	V
V_{OX} (NH0018CN)		100	100	V
I_{OL1} (NH0017CN, NH0018CN)	500	500	500	mA
I_{OL1} (NH0016CN)	250	250	250	mA
I_{OL2}	16	16	16	mA
I_{OL3}		8.0		mA

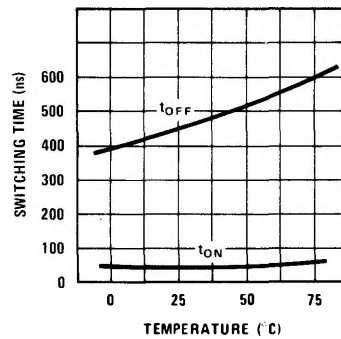
test limits

SYMBOL	0°C	+25°C	+70°C	UNITS
V_{OL1}	0.6	0.6	0.6	V
V_{OL2}	0.45	0.45	0.45	V
V_{OH1}	1.95	1.85	1.65	V
I_R		60	60	μA
$-I_F$	1.6	1.6	1.6	mA
I_{OX}		5.0	200	μA
I_{PD}		12.2		mA
I_{MAX}		10		mA

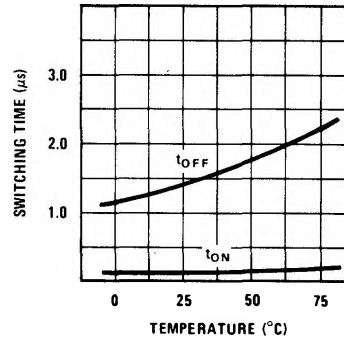
Typical Output Voltages vs Temperature



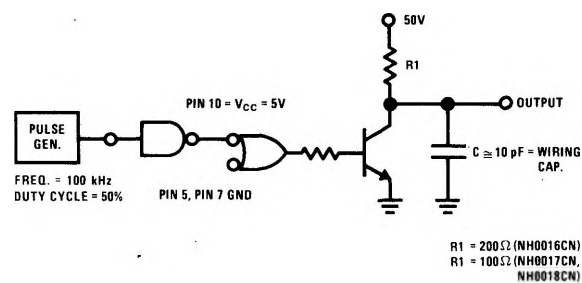
Typical Switching Times $I_C = 250$ mA
NH0016CN



Typical Switching Times $I_C = 500$ mA
NH0017N, NH0018CN



switching time test circuit



switching time waveform

