IR2C24/IR2C24N 6-Unit 320mA Transistor Array

Description

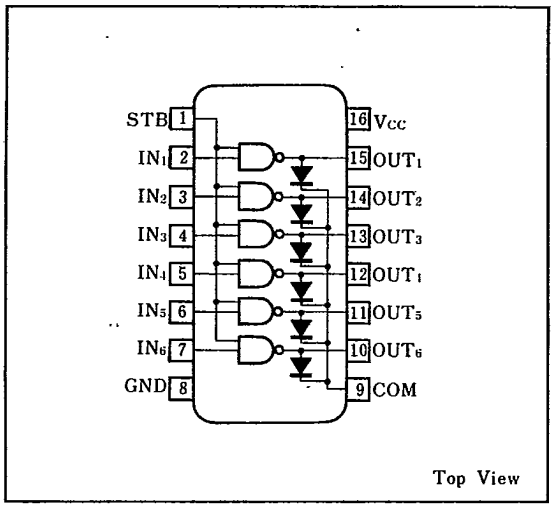
The IR2C24/IR2C24N is a 6-circuit driver IC which can be used for driving printer, relays, LEDs and lamps. The strobe pin enables all circuits to cut off without external transistors.

Clamping diodes protect output transistors from counter electromotive force.

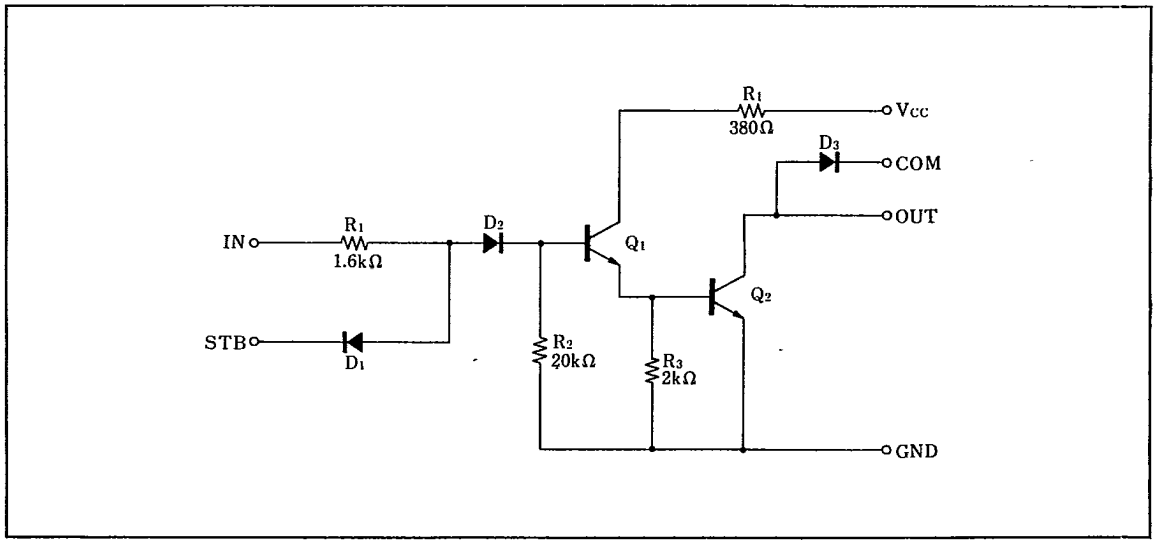
Features

1. With strobe pin
2. With clamping diodes
3. Output breakdown voltage
   BV_{CEO}=20V(MAX.)
4. Output current ·320mA(MAX.)
5. 16-pin dual-in-line package(IR2C24)
   16-pin small-outline package(IR2C24N)

Pin Connections



Equivalent Circuit



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Absolute Maximum Ratings

Parameter	Symbol	Condition		Rating	Unit
Supply voltage	V_{CC}			10	V
Input voltage	V_{IN}			−25～+20	V
Output current	I_{OUT}	Each circuit		320	mA
Output breakdown voltage	BV_{CEO}			20	V
Strobe input voltage	V_{IN} STB			20	V
Clamp diode reverse voltage	V_R	For clamp diode		20	V
Clamp diode surge current	I_{surge}	For clamp diode		320	mA
Power dissipation	P_D	Ta≦25℃	IR2C24	1,470	mW
			IR2C24N	600	
P_D derating ratio	ΔP_D/℃	Ta>25℃	IR2C24	14.7	mW/℃
			IR2C24N	6	
Operating temperature	T_{opr}			−20～+75	℃
Storage temperature	T_{stg}			−55～+150	℃

Recommend Operating Conditions

(Ta=−20～+75℃)

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Supply voltage	V_{CC}		3		8	V
Max. output voltage	V_{CED}				20	V
Output current	I_{OUT}	V_{CC}=6.5V, at 25% duty or less			300	mA
		V_{CC}=6.5V, at 65% duty or less			150	
Input "High" voltage	V_{IH}	I_{OUT}=300mA	3.2			V
Input "Low" voltage	V_{IL}	I_{OUT} (Leak)=50 μA			0.7	V
Strobe input "High" voltage	V_{IH} STB	For strobe pin	2.4			V
Strobe input "Low" voltage	V_{IL} STB	For strobe			0.2	V

Electrical Characteristics

(V_{CC}=8V, Ta=−20～+75℃)

Parameter	Symbol	Condition		MIN.	TYP.	MAX.	Unit
Output voltage	V_{CEO}	V_{IN}=3.2V, V_{IN} STB=0.2V, I_{OUT}=100 μA				20	V
On state output voltage	V_{OUT} ON_1	V_{IN}=3V, V_{IN} STB=2.4V	V_{CC}=6.5V, I_{OUT}=300mA		0.6	1.0	V
			V_{CC}=6.5V, I_{OUT}=250mA		0.5	0.85	
	V_{OUT} ON_2		V_{CC}=3V, I_{OUT}=120mA		0.3	0.5	
Input current	I_{IN}	V_{IN}=3.2V, V_{IN} STB=2.4V				1.4	mA
Input reverse leakage current	I_{IR}	V_{IN}=−25V				−20	μA
Strobe input current	I_{IN} STB	For strobe pin, V_{IN}=3.2V(All input), V_{IN} STB=0.2V			−7.9		mA
Strobe input reverse leakage current	I_{IR} STB	For strobe pin, V_{IN}=0V, V_{IN} STB=20V				20	μA
Clamp diode forward voltage	V_F	For clamp diode, I_{surge}=320mA			1.4	2.4	V
Clamp diode reverse voltage	V_R	For clamp diode, I_R=100 μA		20	40		V
Supply current	I_{CC}	V_{IN}=3.2V(All input), V_{IN} STB=2.4V				200	mA
DC current amplitude	h_{FE}	V_{CC}=6.5V, V_{CEO}=4V, I_{OUT}=300mA, Ta=25℃		1,000			