

6-Unit 320mA Transistor Array

IR2C23/IR2C23N

T-52-07

IR2C23/IR2C23N 6-Unit 320mA Transistor Array

■ Description

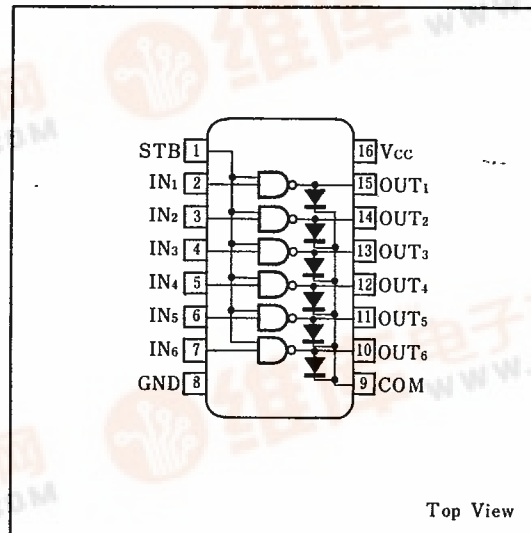
The IR2C23/IR2C23N is a 6-circuit driver IC which can be used for driving printer, relays, LEDs and lamps. The strobe pin enables all circuits to cut off without external transistors.

Clamping diodes protect output transistors from counter electromotive force.

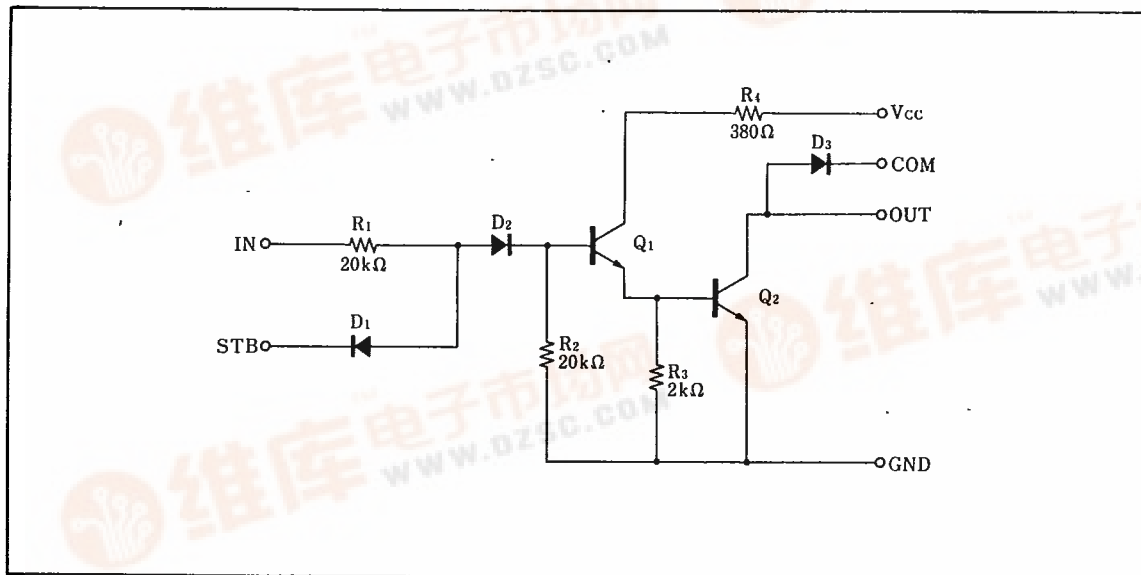
■ Features

1. With strobe pin
2. With clamping diodes
3. Output breakdown voltage
 $BV_{CEO} = 20V(\text{MAX.})$
4. Output current 320mA(MAX.)
5. 16-pin dual-in-line package(IR2C23)
16-pin small-outline package(IR2C23N)

■ 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	$T_a \leq 25^\circ\text{C}$	IR2C23	1,470	mW
			IR2C23N	600	
P_D derating ratio	$\Delta P_D/^\circ\text{C}$	$T_a > 25^\circ\text{C}$	IR2C23	14.7	mW/°C
			IR2C23N	6	
Operating temperature	T_{opr}		-20 ~ +75	°C	
Storage temperature	T_{stg}		-55 ~ +150	°C	

 $(T_a = -20 \sim +75^\circ\text{C})$

Recommend Operating Conditions

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Supply voltage	V_{CC}		3		8	V
Max. output voltage	V_{CEO}				20	V
Output current	I_{OUT}	$V_{CC}=6.5\text{V}$, at 25% duty or less			300	mA
		$V_{CC}=6.5\text{V}$, at 65% duty or less			150	
Input "High" voltage	V_{IH}	$I_{OUT}=150\text{mA}$	5			V
		$I_{OUT}=300\text{mA}$	7			
Input "Low" voltage	V_{IL}	$I_{OUT}(\text{Leak})=50\ \mu\text{A}$			1	V
Strobe input "High" voltage	$V_{IH\ STB}$	For strobe pin	2.4			V
Strobe input "Low" voltage	$V_{IL\ STB}$	For strobe pin	IR2C23		0.4	V
			IR2C23N		0.2	

 $(V_{CC}=8\text{V}, T_a = -20 \sim +75^\circ\text{C})$

Electrical Characteristics

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Output voltage	V_{CEO}	$V_{IN}=18\text{V}$, $V_{IN\ STB}=0.2\text{V}$, $I_{OUT}=100\ \mu\text{A}$			20	V
On state output voltage	$V_{OUT\ ON1}$	$V_{IN}=7\text{V}$, $V_{IN\ STB}=2.4\text{V}$	$V_{CC}=6.5\text{V}$, $I_{OUT}=300\text{mA}$	0.6	1.0	V
			$V_{CC}=6.5\text{V}$, $I_{OUT}=250\text{mA}$	0.5	0.85	
			$V_{CC}=3\text{V}$, $I_{OUT}=120\text{mA}$	0.3	0.5	
Input current	I_{IN}	$V_{IN}=18\text{V}$, $V_{IN\ STB}=2.4\text{V}$		0.8	1.8	mA
Input reverse leakage current	I_{IR}	$V_{IN}=-25\text{V}$			-20	μA
Strobe input current	$I_{IN\ STB}$	For strobe pin, $V_{IN}=18\text{V}(\text{All input})$, $V_{IN\ STB}=0.2\text{V}$		-4		mA
Strobe input reverse leakage current	$I_{IR\ STB}$	For strobe pin, $V_{IN}=0\text{V}$, $V_{IN\ STB}=20\text{V}$			20	μA
Clamp diode forward voltage	V_F	For clamp diode, $I_{FM}=320\text{mA}$		1.4	2.4	V
Clamp diode reverse voltage	V_R	For clamp diode, $I_R=100\ \mu\text{A}$	20			V
Supply current	I_{CC}	$V_{IN}=7\text{V}(\text{All input})$, $V_{IN\ STB}=2.4\text{V}$			200	mA
DC current amplitude	h_{FE}	$V_{CC}=6.5\text{V}$, $V_{CEO}=4\text{V}$, $I_{OUT}=300\text{mA}$, $T_a=25^\circ\text{C}$	1,000			