

6-Unit 400mA Darlington Transistor Array

T-52-13-07

IR2415

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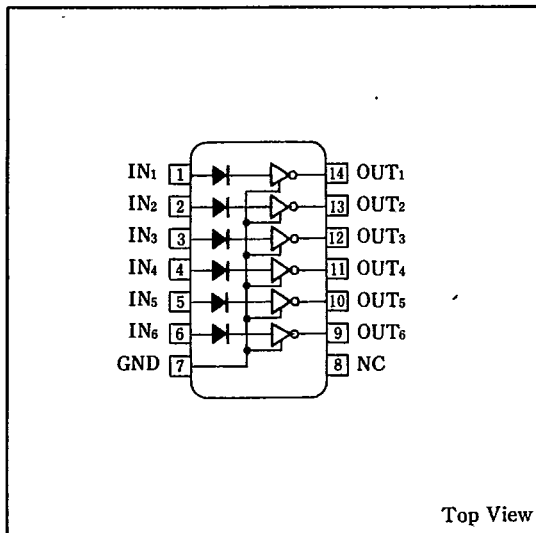
Description

The IR2415 is a 6-circuit driver with an internal negative input voltage protection diode. It is useful when designing circuits for printer calculators which use display tubes.

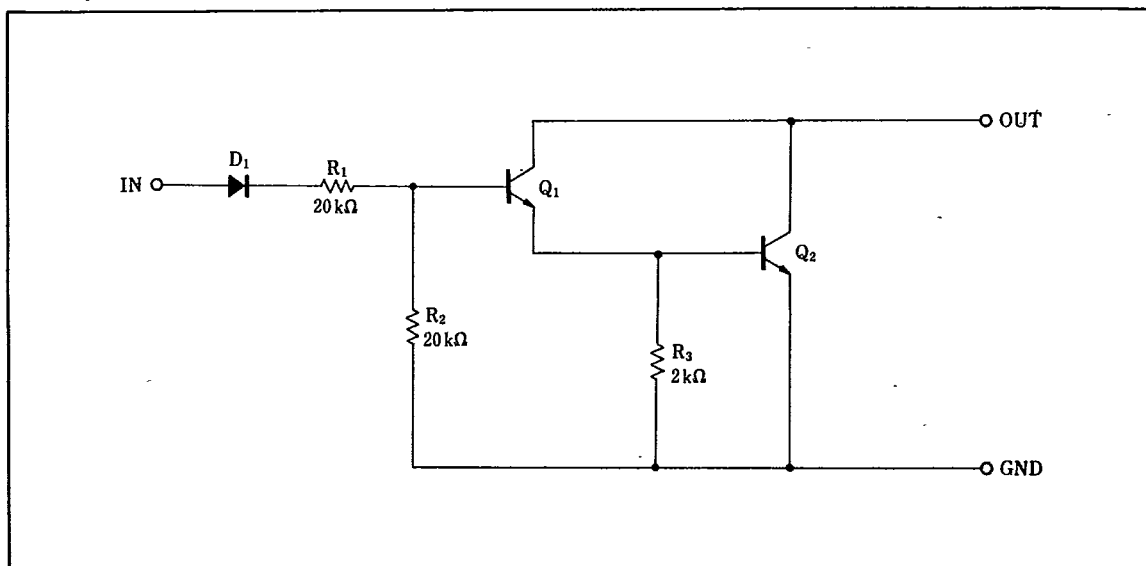
Features

1. High output current, $I_{OUT}=400\text{mA}$ (MAX.)
2. High output breakdown voltage
 $BV_{CEO}=45\text{V}$ (MAX.)
3. Directly driven by MOS output
4. Internal negative input voltage protective diode
5. Darlington construction
6. 14-pin dual-in-line package

Pin Connections



Equivalent Circuit



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■ Absolute Maximum Ratings

Parameter	Symbol	Condition	Rating	Unit
Supply voltage	V_{CC}		45	V
Output current *1	I_{OUT}	Each circuit	400	mA
Input voltage	V_{IN}		-40 ~ +45	V
Breakdown voltage between collector-base	BV_{CBO}		45	V
Breakdown voltage between collector-emitter	BV_{CEO}		45	V
Load inductance	L_L	Protection diode used	100	mH
Power dissipation	P_D	$T_a \leq 25^\circ\text{C}$	600	mW
P_D derating ratio	$\Delta P_D / ^\circ\text{C}$	$T_a > 25^\circ\text{C}$	6	mW/ $^\circ\text{C}$
Operating temperature	T_{opr}		-25 ~ +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 ~ +125	$^\circ\text{C}$

*1 Duty cycle 10% or less, repetitive frequency 10Hz or more.

■ Recommended Operating Conditions

Parameter	Symbol	Condition	Rating	Unit
Max. output voltage	V_{OM}		45	V
Operating temperature	T_{opr}		-20 ~ +75	$^\circ\text{C}$
Output current *2	I_{OUT}	at 10% duty	0 ~ 400	mA
		at 50% duty	0 ~ 150	

*2 Repetitive frequency 10Hz or more.

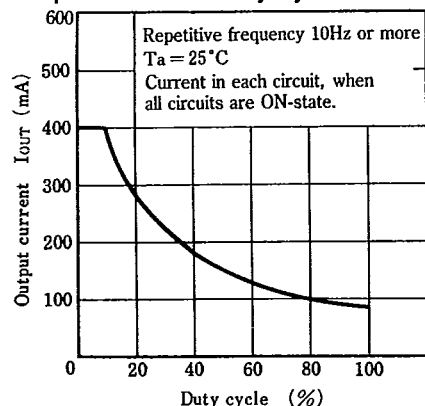
■ Electrical Characteristics

(Ta = -25 ~ +75 $^\circ\text{C}$)

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Supply voltage	V_{CC}				45	V
ON-state input current	$I_{I\ ON}$	$V_{IN} = 17\text{V}$, $I_{OUT} = 0\text{mA}$		1.2	1.5	mA
ON-state output voltage	$V_{O\ ON1}$	$V_{IN} = 14\text{V}$, $I_{OUT} = 400\text{mA}$			2.2	V
	$V_{O\ ON2}$	$V_{IN} = 14\text{V}$, $I_{OUT} = 200\text{mA}$			1.4	
OFF-state output current	$I_{O\ OFF}$	$V_{IN} = 0\text{V}$, $V_{OUT} = 45\text{V}$			100	μA
Input leakage current	I_L	$V_{IN} = -35\text{V}$	-10			μA
DC amplitude	h_{FE}	$V_{CE} = 2.5\text{V}$, $I_{OUT} = 300\text{mA}$	1,000			

■ Electrical Characteristic Curve

Output current—Duty cycle Characteristics



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