IR2C36 7-Unit 500mA Transistor Array

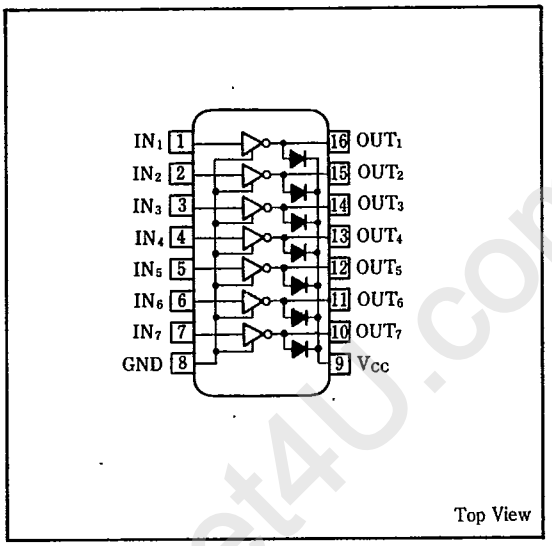
Description

The IR2C36 is a 7-circuit driver IC. Incorporating an overshort preventive clamp diode for output, this transistor array can directly drive an inductive load.

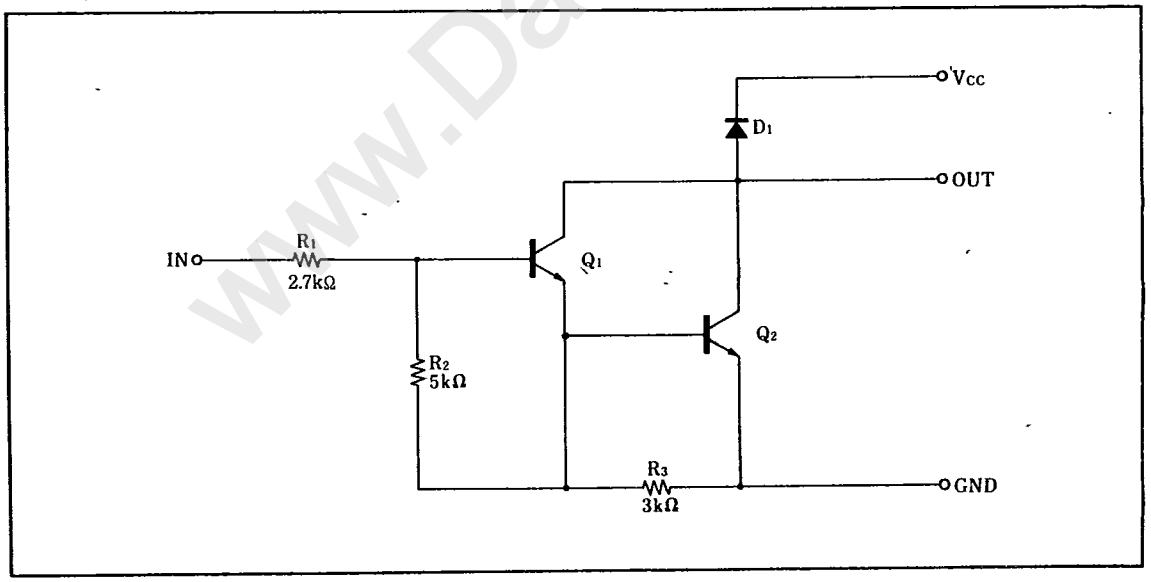
Features

1. High output current I_{OUT}=500mA (MAX.)
2. High output breakdown voltage BV_{CEO} = 50V (MAX.)
3. Built-in output clamp diode
4. Allows for direct drive with TTL or CMOS IC output
5. Darlington structure
6. 16-pin dual-in-line package

Pin Connections



Equivalent Cricuit



■ Absolute Maximum Ratings

Parameter	Symbol	Condition	Rating	Unit
Supply voltage	V_{CC}		50	V
Output breakdown voltage	BV_{CEO}		50	V
Output current	I_{OUT}	each circuit, Ta=25℃	500	mA
Input voltage	V_{IN}		30	V
Clamp diode reverse breakdown voltage	BV_R		50	V
Clamp diode forward current	$I_{f\ MAX}$		40	mA
Clamp diode surge current	I_{surge}		400	mA
Load inductance	L_Z		100	mH
Power dissipation	P_D	Ta≦25℃	1.47	W
P_D derating ratio	ΔP_D/℃	Ta>25℃	11.76	mW/℃
Operating temperature	T_{opr}		−25～+75	℃
Storage temperature	T_{stg}		−55～+150	℃

■ Recommended Operating Conditions

(Ta=25℃)

Parameter	Symbol	Condition	Rating	Unit
Maximum output voltage	V_{CEO}		50	V
Operating temperature	T_{opr}		−20～+75	℃
Output current	I_{OUT}	at 15% duty	0～400	mA
		at 50% duty	0～200	mA

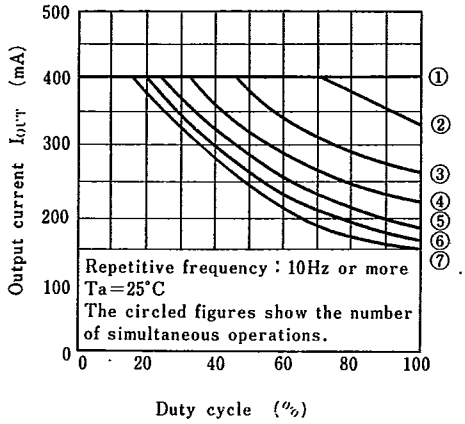
■ Electrical Characteristics

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Supply voltage	V_{CC}				50	V
Input current at ON	$I_{IN\ ON}$	V_{IN}=3.85V, I_{OUT}=0		0.95	1.8	mA
		V_{IN}=25V, I_{OUT}=0		9	18	mA
Output voltage at ON	$V_{OUT\ ON}$	V_{IN}=3.85V, I_{OUT}=400mA			2.2	V
		V_{IN}=3.85V, I_{OUT}=200mA			1.4	V
Output current at OFF	$I_{OUT\ OFF}$	V_{IN}=0V, V_{OUT}=50V			100	μA
Diode forward voltage	V_F	I_F=400mA			22	V
Diode leakage current	I_R	V_R=50V			100	μA
Input "High" voltage	$V_{IN\ ON}$	I_{OUT}=400mA	3.85			V
		I_{OUT}=100mA	3.4			V
Input "Low" voltage	$V_{IN\ LOW}$				0.6	V
DC current amplification	h_{FE}	V_{CE}=4V, I_{OUT}=350mA, Ta=25℃	1000			

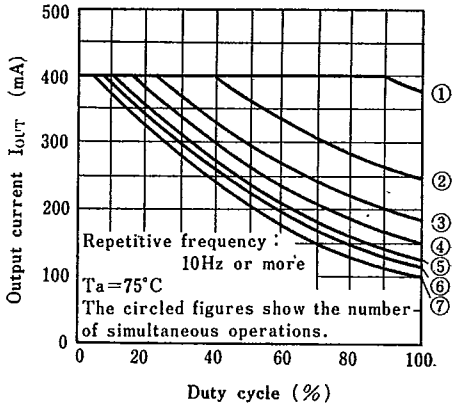
Duty cycle: 15% or less, repetitive frequency: 10Hz or more

■ Electrical Characteristic Curves

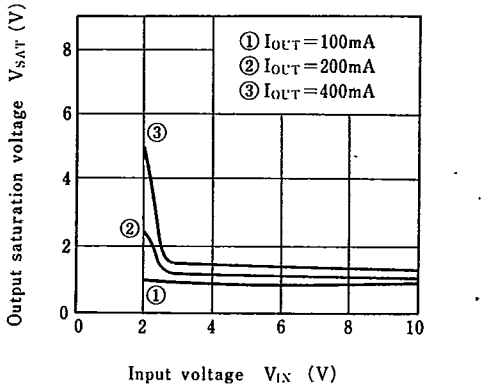
Output current—Duty cycle Characteristics (1)



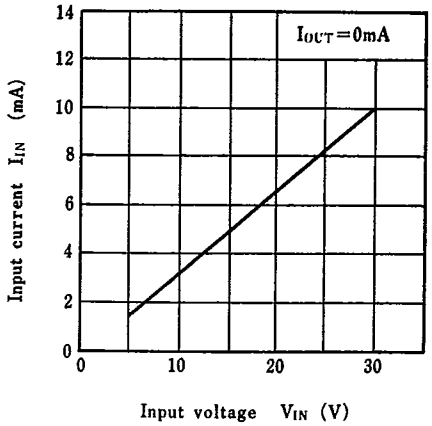
Output current—Duty cycle Characteristics (2)



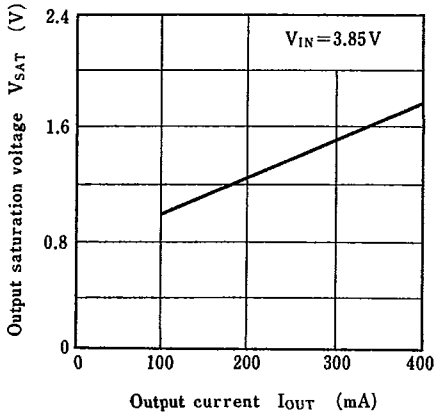
Output staturation voltage (V_{SAT})—Input voltage Characteristics (V_{IN})



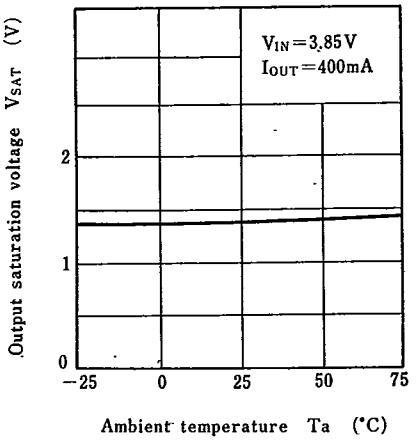
Input current—Input voltage Characteristics



Output staturation voltage—Output current Characteristics



Output saturation voltage —Ambient temperature Characteristics



Input current—Ambient temperature Characteristics