

IR2C36 7-Unit 500mA Transistor Array

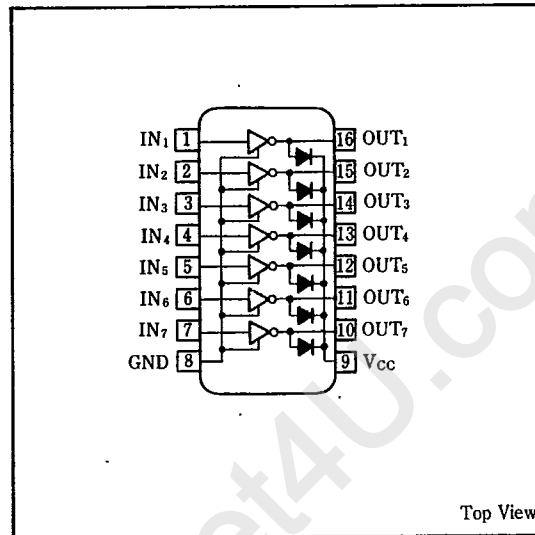
■ Description

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

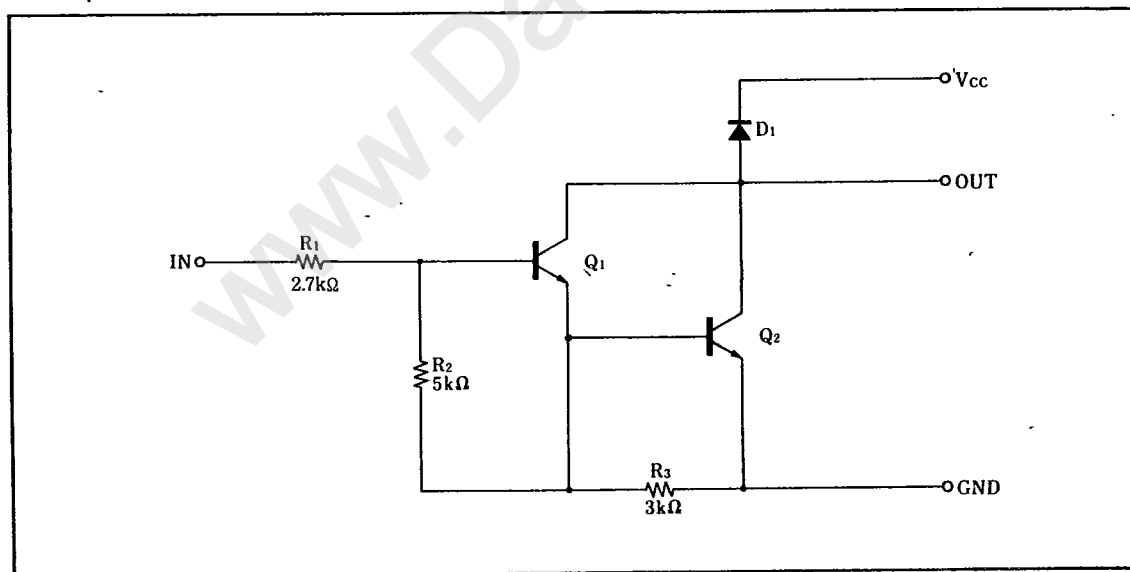
■ Features

1. High output current $I_{OUT} = 500\text{mA}$ (MAX.)
2. High output breakdown voltage $BV_{CEO} = 50\text{V}$ (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 Circuit



SHARP

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, $T_a=25^\circ\text{C}$	500	mA
Input voltage	V_{IN}		30	V
Clamp diode reverse breakdown voltage	BV_R		50	V
Clamp diode forward current	$I_{f\text{ MAX}}$		40	mA
Clamp diode surge current	I_{surge}		400	mA
Load inductance	L_z		100	mH
Power dissipation	P_D	$T_a \leq 25^\circ\text{C}$	1.47	W
P_D derating ratio	$\Delta P_D / ^\circ\text{C}$	$T_a > 25^\circ\text{C}$	11.76	mW/ $^\circ\text{C}$
Operating temperature	T_{opr}		-25 ~ +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 ~ +150	$^\circ\text{C}$

Recommended Operating Conditions

(Ta=25°C)

Parameter	Symbol	Condition	Rating	Unit
Maximum output voltage	V_{CEO}		50	V
Operating temperature	T_{opr}		-20 ~ +75	$^\circ\text{C}$
Output current	I_{OUT}	at 15% duty	0 ~ 400	mA
		at 50% duty	0 ~ 200	mA

Electrical Characteristics

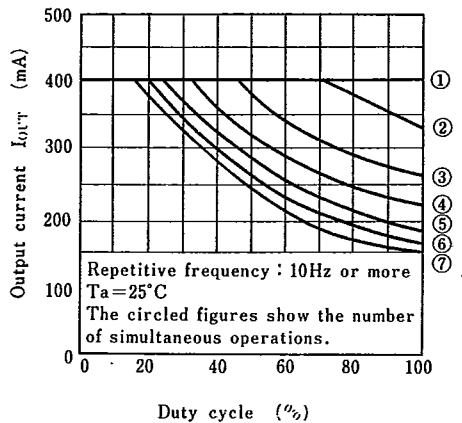
Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Supply voltage	V_{CC}				50	V
Input current at ON	$I_{IN\ ON}$	$V_{IN}=3.85\text{V}, I_{OUT}=0$		0.95	1.8	mA
		$V_{IN}=25\text{V}, I_{OUT}=0$		9	18	mA
Output voltage at ON	$V_{OUT\ ON}$	$V_{IN}=3.85\text{V}, I_{OUT}=400\text{mA}$			2.2	V
		$V_{IN}=3.85\text{V},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

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

Electrical Characteristic Curves

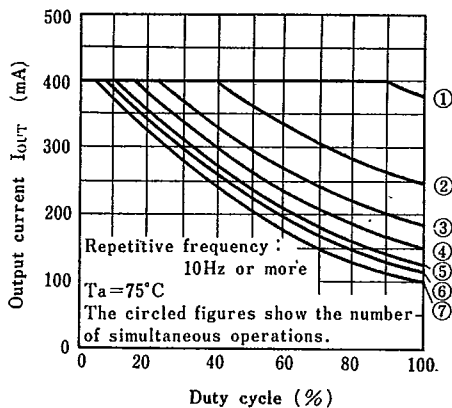
Output current—Duty cycle

Characteristics (1)



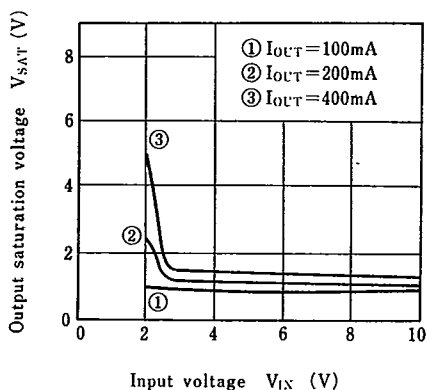
Output current—Duty cycle

Characteristics (2)

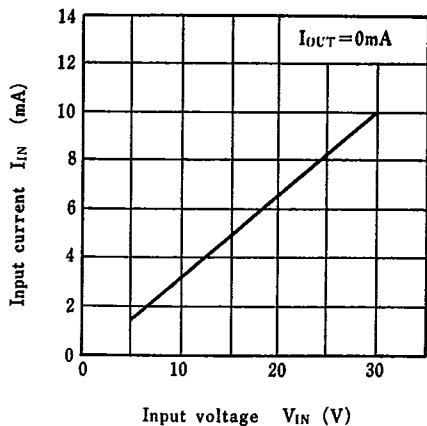


Output saturation voltage (VSAT)—Input voltage

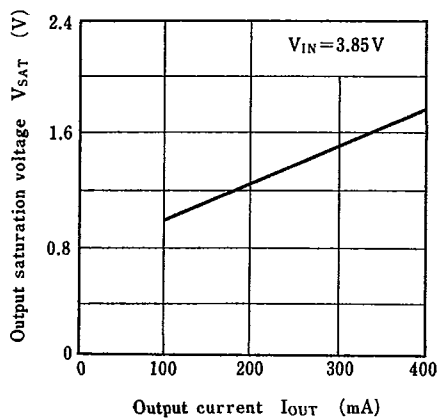
Characteristics (VIN)



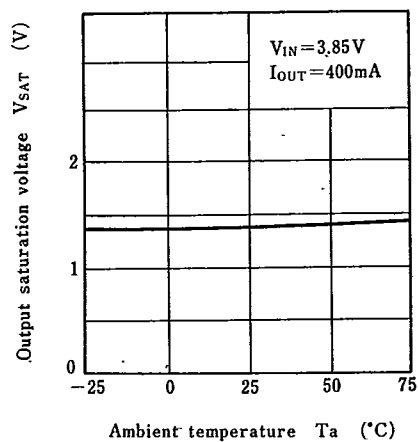
Input current—Input voltage Characteristics



Output saturation voltage—Output current Characteristics



Output saturation voltage
— Ambient temperature Characteristics



Input current— Ambient temperature
Characteristics

