1 - MOTOR DRIVER FOR VTR

The DBL2084 is a monolithic integrated circuit designed to perform bi-directional DC Motor driving, braking and speed control for VCRs. Speed of the motor can be controlled by adjusting the external voltage of the motor speed control pin.

FEATURES

o Stable braking characteristics by built-in braking function.

o Stable driving direction change.

o Built-in element to absorb dash current derived from changing motor direction and braking motor driving.

o CMOS logic level compatable input level.

o Built-in external motor speed control pin.

APPLICATION

o VTR   o CDP/VCD   o TOY

MAXIMUM RATINGS (Ta = 25 ℃)

Characteristics	Symbol	Ratings	Unit
Supply Voltage	Vcc	18	V
Input Voltage	Vi	-0.3~Vcc	V
Output Current	Io	1600	mA
Allowable Power Dissipation	Pd	1200	mW
Operating Temperature	Topr	-25~75	℃
Storage Temperature	Tstg	-55~125	℃

OPERATING CONDITIONS (Ta = 25 ℃)

Characteristic	Symbol	Min	Typ	Max	Unit
Supply Voltage	Vcc	6.0	12.0	18.0	V

BLOCK DIAGRAM

1	2	3	4	5	6	7	8	9	10
GND	Vout1	Vz1	Vr	Fin	Rin	Vcc1	Vcc2	Vz2	Vout2
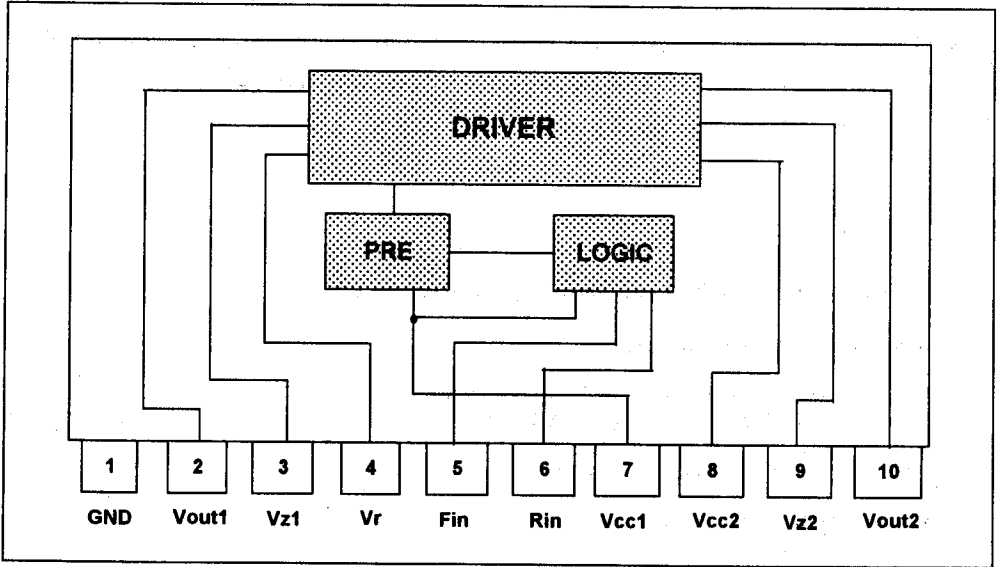
LOGIC TRUTH TABLE

| Input		Output		Motor Mode
IN1	IN2	OUT1	OUT2	
L	L	L	L	Braking
H	L	H	L	Forward (reverse) Derive
L	H	L	H	Reverse (Forward) Derive
H	H	L	L	Braking

* Input Level ; " H " > 2.0V,   " L " < 0.7V

ELECTRICAL CHARACTERISTICS (Vcc = 12V, Ta = 25 ℃)

Charateristic	Symbol	Condition	MIN	TYP	MAX	UNIT
Quiescent Current	Iccq	Pin5,6:GND, RI = ∞	3	5.5	10	mA
Output Operat Current 1	IL1	Pin5,6:H,L Current at Vcc2	130	-	160	mA
Output Operat Current 2	IL2	Pin5,6:L,H Current at Vcc2	120	-	150	mA
Output Operat Current 3	IL3	Pin5,6:H,H Current at Vcc2	0	-	1	mA
Output Operat Current 4	IL4	Pin5,6:L,L Current at Vcc2	0	-	1	mA
Minimum Input on Current 1	Iin1	RL= ∞ ,Pin5:Iin1,Pin6:L	-	10	50	uA
Minimum Input on Current 2	Iin2	RL= ∞ ,Pin5:L,Pin6:Iin2	-	10	50	uA
Input Threshold Voltage 1	Vinth1	RL= ∞ ,Pin5:Vinth1, Pin6:L	0.7	1.3	2.0	V
Input Threshold Voltage 2	Vinth2	RL= ∞ ,Pin5:L, Pin6:Vinth2	0.7	1.3	2.0	V
Output Leakage Current 1	ILU1	Current Between Vcc2 & Out1	-	-	50	uA
Output Leakage Current 2	ILU2	Current Between Vcc2 & Out2	-	-	50	uA
Output Leakage Current 3	ILL1	Current Between Out1 & GND	-	-	50	uA
Output Leakage Current 4	ILL2	Current Between Out2 & GND	-	-	100	uA
Zener Current 1	Iz1	Pin5:H, Pin6:L,RL= ∞	-	0.85	1.5	mA
Zener Current 2	Iz2	Pin5:L, Pin6:H,RL= ∞	-	0.85	1.5	mA
Output Voltage 1	Vo1	Pin5:H,Pin6:L,RL=60ohm	6.6	-	7.6	V
Output Voltage 2	Vo2	Pin5:L,Pin6:H,RL=60ohm	6.6	-	7.6	V
Output Voltage Low 1	Voll1	Pin5:L,Pin6:L,RL=60ohm	0.3	-	0.7	V
Output Voltage Low 2	Voll2	Pin5:L,Pin6:L,RL=60ohm	0.3	-	0.7	V
Output Voltage High 1	Vohh1	Pin5:H,Pin6:H,RL=60ohm	0.3	-	0.7	V
Output Voltage High 2	Vohh2	Pin5:H,Pin6:H,RL=60ohm	0.3	-	0.7	V
Saturation Voltage Pin10-1	Vce10-1	ISINK=100mA Pin5:H,Pin6:L,RL,RC= ∞	-	0.83	1.5	V
Saturation Voltage Pin2-1	Vce2-1	ISINK=100mA Pin5:L,Pin6:H,RL,RC= ∞	-	0.83	1.5	V
Saturation Voltage Pin8-2	Vce8-2	ISOURCE=100mA Pin5:H,Pin6:L,RL,RC= ∞	-	0.83	1.5	V
Saturation Voltage Pin8-10	Vce8-10	ISOURCE=100mA Pin5:L,Pin6:H,RL,RC= ∞	-	0.83	1.5	V
Saturation Voltage Pin10-1	Vce510	ISINK=500mA Pin5:H,Pin6:L,RL,RC= ∞	0.85	-	1.15	V
Saturation Voltage Pin2-1	Vce521	ISINK=500mA Pin5:L,Pin6:H,RL,RC= ∞	0.85	-	1.15	V
Saturation Voltage Pin8-2	Vce582	ISOURCE=500mA Pin5:H,Pin6:L,RL,RC= ∞	1.4	-	1.7	V
Saturation Voltage Pin8-10	Vce581	ISOURCE=500mA Pin5:L,Pin6:H,RL,RC= ∞	1.4	-	1.7	V

TEST CIRCUIT

DBL2084
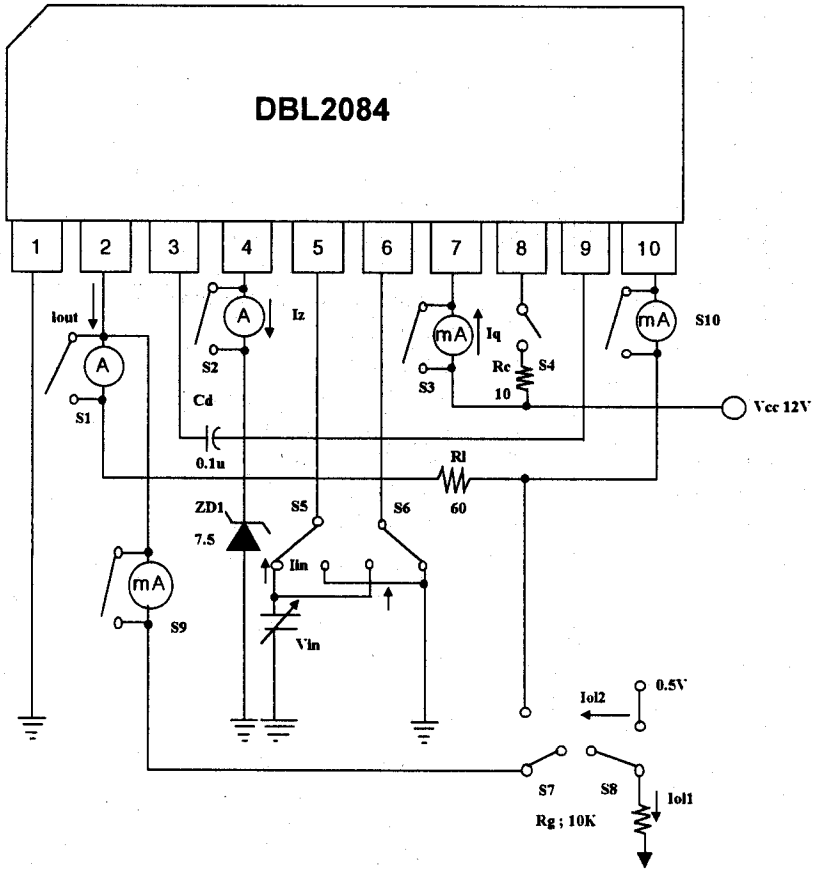
Iout : Output current
Iz : Zener current
Iq : Quiescent current
Iol1,Iol2 : Output Leakage current

APPLICATION CIRCUIT