

Low Saturation Motor Driver Monolithic IC MM1097

Outline

This is a motor driver IC for video movie use, developed as the low saturation type of MM1036. MM1036 maximum saturation voltage is 1.35V, while MM1097 is only 0.55V.

Features

1. Operating voltage range 4~9V
2. Saturation voltage 0.55V max.
3. Current consumption during standby 2 μ A max.
4. Built-in 2.2V stable power supply
5. Can operate on single power supply
6. Control pins D0 and D1 have TTL interface
7. Built-in thermal shutdown
8. Built-in counter-electromotive clamp diode

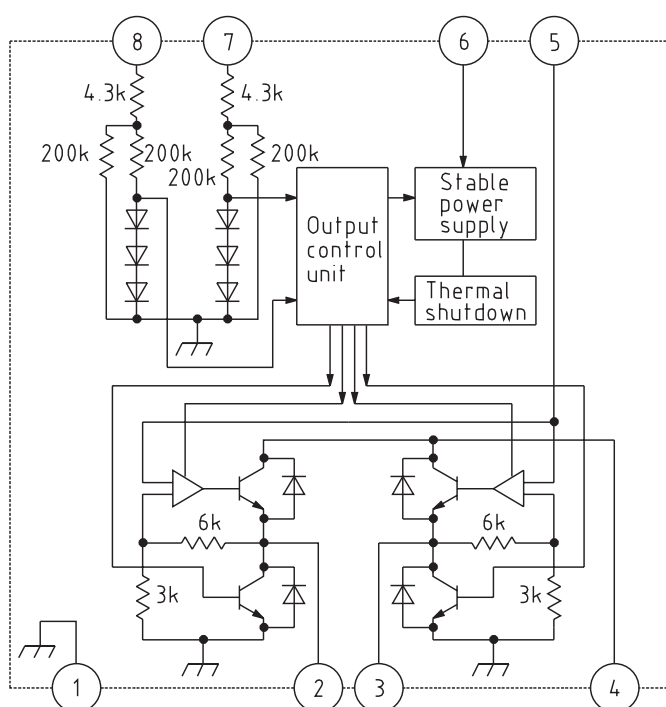
Package

SOP-8B (MM1097XF)

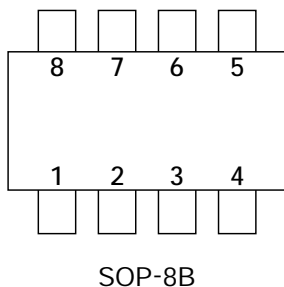
Applications

Video movies (auto-focus, zoom)

Block Diagram



Pin Description



Pin no.	Pin name	Function
1	GND	GND
2	M0	M0 output pin
3	M1	M1 output pin
4	V _{CC}	V _{CC}
5	V _C	Output voltage control
6	V _{REF}	Stable power supply
7	D0	D0 control pin
8	D1	D1 control pin

Mode Settings

D0	D1	Mode	M0	M1
L	L	Open	L	L
H	L	Forward	H	L
L	H	Reverse	L	H
H	H	Brake	L	L

Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Ratings	Units
Storage temperature	T _{STG}	-40~+125	°C
Operating temperature	T _{OPR}	-15~+75	°C
Power supply voltage	V _{CC}	10	V
Allowable loss	P _d	350 *1	mW
		470 *2	
Output current	I _o	80 *3	mA

Notes :

*1 Unit : IC

*2 Loss tolerance when mounted on 20×38×1 [mm] glass epoxy board

*3 Within 100ms

Electrical Characteristics (Except where noted otherwise, $T_a=25^{\circ}\text{C}$, $V_{CC}=6.0\text{V}$, $V_M=4.5\text{V}$)

Item	Symbol	Measurement conditions	Min.	Typ.	Max.	Units
Operating voltage	V_{CC}		4.0		9	V
Consumption current 1	I_{CC1}	V_{DO} , $V_{D1}=0\text{V}$, $V_{CC}=9\text{V}$			2.0	μA
Consumption current 2	I_{CC2}	V_{DO} , $V_{D1}=2.4\text{V}$, $V_{CC}=9\text{V}$		9.5	15	mA
Output saturation voltage (L)	V_{sat}	$I_M=60\text{mA}$			250	mV
Output voltage (L) Load fluctuation 1	L_{reg1} (L)	$I_M=10\sim 60\text{mA}$			200	mV
Output voltage (L) Load fluctuation 2	L_{reg2} (L)	$I_M=10\sim 80\text{mA}$			350	mV
M0, M1 I/O ratio	K	$K=V_M/V_C$, $I_M=0\text{mA}$	2.85	3.00	3.15	
Output voltage range	V_M	$I_M=-60\text{mA}$	2.0		$V_{CC}-0.3$	V
Output voltage (H) Load fluctuation 1	L_{reg1} (H)	$I_M=0\sim 65\text{mA}$			100	mV
Output voltage (H) Load fluctuation 2	L_{reg2} (H)	$I_M=-10\sim 80\text{mA}$			200	mV
Reference voltage	V_{ref}	$I_{ref}=1\text{mA}$	2.03	2.20	2.30	V
D0, D1 threshold voltages	V_{TH}		0.6		2.4	V
D0, D1 input currents	I_D	V_{DO} , $V_{D1}=5\text{V}$		40	100	μA
Thermal shutdown operating temperature				150		$^{\circ}\text{C}$
Thermal shutdown hysteresis temperature				50		$^{\circ}\text{C}$

Measuring Circuit

