

2-367

BI-DIRECTIONAL MOTOR DRIVER WITH MOTOR SPEED CONTROL

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V_{CC}	Supply voltage	With an external heat sink (3000mm ² ×1.5mmt)	-0.5~+20	V
V_1	Input voltage	4Pin, 5Pin	-0.5~+14 or V_{CC}	V
		Inputs pin other than the above	-0.5~ V_{CC}	
V_O	Output voltage		-2.0~ $V_{CC}+2.5$	V
$I_{O(max)}$	Peak output current	top=10ms ; repetitive cycle 0.2Hz max	±3.0	A
$I_{O(1)}$	Continuous output current (1)		±300	mA
$I_{O(2)}$	Continuous output current (2)	With an external hbat sink (3000mm ² ×1.5mmt)	±800	mA
P_d	Power dissipation	$T_a=75^\circ\text{C}$	0.8	W
T_{opr}	Operating temperature		-10~+75	°C
T_{stg}	Storage temperature		-55~+125	°C

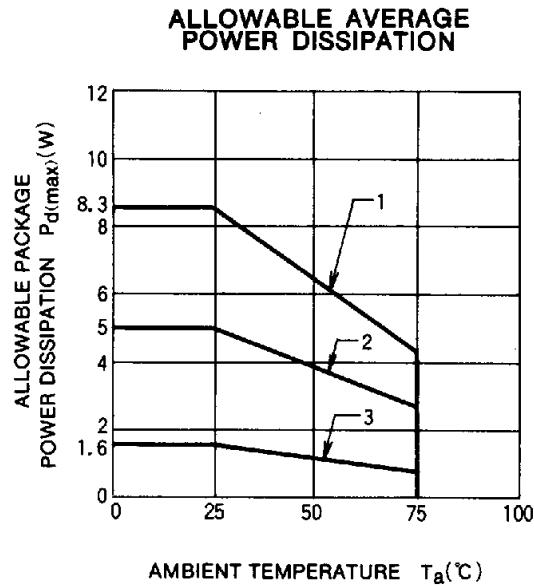
RECOMMENDED OPERATING CONDITIONS ($T_a=25^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Limits			Unit
			Min	Typ	Max	
V_{CC}	Supply voltage		4	12	18	V
I_O	Output current				±300	mA
V_{IH}	High-level input voltage		3		V_{CC}	V
V_{IL}	Low-level input voltage		0		1	V
t_B	Motor braking interval		100			ms
$t_{j(shut)}$	Thermal shutdown temperature		125	150		°C

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$, unless otherwise noted)

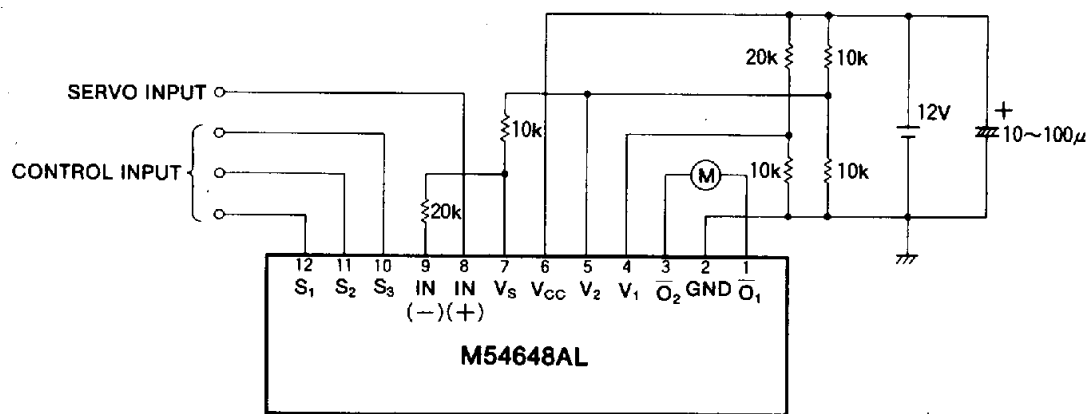
Symbol	Parameter	Test conditions		Limits			Unit
				Min	Typ	Max	
$I_{O(leak)}$	Output leakage current	$V_{S1}=0V$	$V_O=0V$			-100	μA
		$S_{S2}=0V$	$V_{CC}=V_S=20V$				
		$V_{S3}=0V$	$V_O=14V$ $V_{CC}=V_S=14V$			+100	
$V_{OH(1)}$	High-level output voltage (1)	$V_{CC}=16V$ $V_{IN(-)}=0V$ $V_{IN(+)}=3V$	$V_{S1}=V_{S2}=0V$ $V_{S3}=3V$	$I_{OH}=-200\text{mA}$	13		V
				$I_{OH}=-500\text{mA}$	12.8		
$V_{OH(2)}$	High-level output voltage (2)	$V_{CC}=16V$ $V_{IN(-)}=0V$ $V_{IN(+)}=3V$	$V_{S1}=V_{S3}=0V$ $V_{S2}=3V$	$I_{OH}=-200\text{mA}$	13		V
				$I_{OH}=-500\text{mA}$	12.8		
$V_{OL(1)}$	Low-level output voltage (1)	$V_{CC}=16V$ $V_{IN(-)}=0V$ $V_{IN(+)}=3V$	$V_{S1}=V_{S3}=0V$ $V_{S2}=3V$	$I_{OL}=200\text{mA}$		1.1	V
				$I_{OL}=500\text{mA}$		1.2	
$V_{OL(2)}$	Low-level output voltage (2)	$V_{CC}=16V$ $V_{IN(-)}=0V$ $V_{IN(+)}=3V$	$V_{S1}=V_{S2}=0V$ $V_{S3}=3V$	$I_{OL}=200\text{mA}$		1.1	V
				$I_{OL}=500\text{mA}$		1.2	
I_{IH}	High-level input current	$V_{CC}=16V, V_S=3V(S_1, S_2, S_3)$				10	μA
I_{IL}	Low-level input current	$V_{CC}=16V, V_S=0V(S_1, S_2, S_3)$				-20	μA
I_{CC}	Supply current	$V_{CC}=16V, V_{S1}=V_{S2}=V_{S3}=3V$				30	mA
A	Op amp open-loop-gain			50			dB

TYPICAL CHARACTERISTICS



- 1) WITH HEAT SINK OF INFINITE SIZE
- 2) 25cm²×1.5mm ALUMINUM HEAT SINK
- 3) FREE AIR

APPLICATION EXAMPLE



Unit : Ω