

SLA7027MU/SLA7024M/SLA7026M 2-Phase/1-2 Phase Excitation

Absolute Maximum Ratings

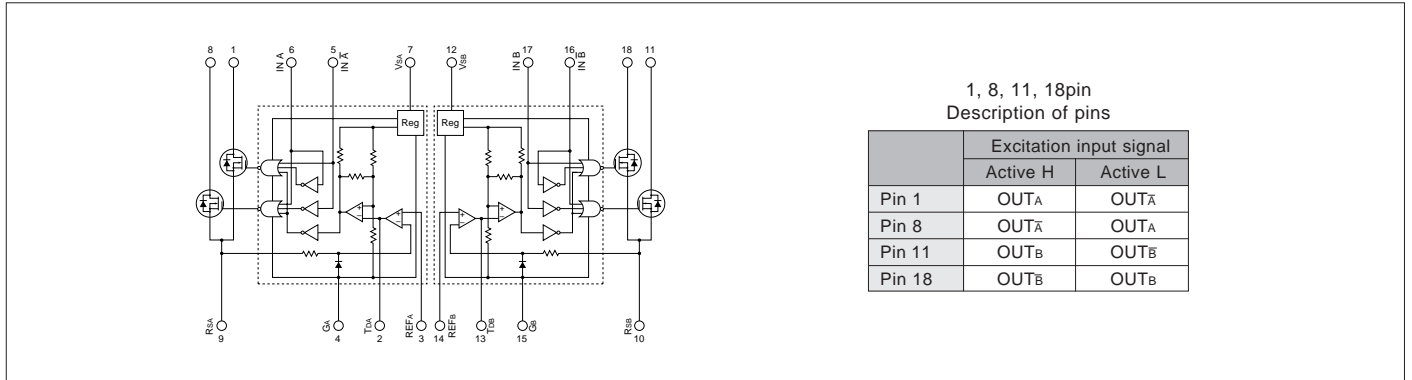
(T_a=25°C)

Parameter	Symbol	Ratings			Unit
		SLA7027MU	SLA7024M	SLA7026M	
Motor Supply Voltage	V _{CC}	46			V
FET Drain-Source Voltage	V _{DSS}	100			V
Control Supply Voltage	V _S	46			V
Input Voltage	V _{IN}	7			V
Reference Voltage	V _{REF}	2			V
Output Current	I _O	1	1.5	3	A
Power Dissipation	P _{D1}	4.5 (Without Heatsink)			W
	P _{D2}	35 (T _c =25°C)			W
Channel Temperature	T _{ch}	+150			°C
Storage Temperature	T _{stg}	-40 to +150			°C

Electrical Characteristics

Parameter	Symbol	Ratings									Unit
		SLA7027MU			SLA7024M			SLA7026M			
		min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	
Control Supply Current	I _S		10	15		10	15		10	15	mA
	Condition	V _S =44V			V _S =44V			V _S =44V			
Control Supply Voltage	V _S	10	24	44	10	24	44	10	24	44	V
	V _{DSS}	100			100			100			
FET Drain-Source Voltage	Condition	V _S =44V, I _{loss} =250μA			V _S =44V, I _{loss} =250μA			V _S =44V, I _{loss} =250μA			
	V _{DS}			0.85			0.6			0.85	V
FET ON Voltage	Condition	I _D =1A, V _S =14V			I _D =1A, V _S =14V			I _D =3A, V _S =14V			
	I _{DSS}			4			4			4	mA
FET Drain Leakage Current	Condition	V _{DSS} =100V, V _S =44V			V _{DSS} =100V, V _S =44V			V _{DSS} =100V, V _S =44V			
	FET Diode Forward Voltage	V _{SD}			1.2			1.1			2.3
Condition		I _D =1A			I _D =1A			I _D =3A			
TTL Input Current	I _{IH}			40			40			40	μA
	Condition	V _{IH} =2.4V, V _S =44V			V _{IH} =2.4V, V _S =44V			V _{IH} =2.4V, V _S =44V			
	I _{IL}			-0.8			-0.8			-0.8	mA
	Condition	V _{IL} =0.4V, V _S =44V			V _{IL} =0.4V, V _S =44V			V _{IL} =0.4V, V _S =44V			
TTL Input Voltage (Active High)	V _{IH}	2			2			2			V
	Condition	I _D =1A			I _D =1A			I _D =3A			
	V _{IL}			0.8			0.8			0.8	
	Condition	V _{DSS} =100V			V _{DSS} =100V			V _{DSS} =100V			
TTL Input Voltage (Active Low)	V _{IH}	2			2			2			V
	Condition	V _{DSS} =100V			V _{DSS} =100V			V _{DSS} =100V			
	V _{IL}			0.8			0.8			0.8	
	Condition	I _D =1A			I _D =1A			I _D =3A			
Switching Time	T _r		0.5			0.5			0.5		μs
	Condition	V _S =24V, I _D =0.8A			V _S =24V, I _D =1A			V _S =24V, I _D =1A			
	T _{stg}		0.7			0.7			0.7		
	Condition	V _S =24V, I _D =0.8A			V _S =24V, I _D =1A			V _S =24V, I _D =1A			
	T _f		0.1			0.1			0.1		
	Condition	V _S =24V, I _D =0.8A			V _S =24V, I _D =1A			V _S =24V, I _D =1A			

Internal Block Diagram



Typical Connection Diagram (Recommended component values)

Active High

Excitation signal time chart
2-phase excitation

clock	0	1	2	3	0	1
IN _A	H	L	L	H	H	L
IN _A	L	H	H	L	L	H
IN _B	H	H	L	L	H	H
IN _B	L	L	H	H	L	L

1-2 phase excitation

clock	0	1	2	3	4	5	6	7	0	1	2	3
IN _A	H	H	L	L	L	L	H	H	L	L	L	L
IN _A	L	L	L	H	H	H	L	L	L	L	L	H
IN _B	L	H	H	H	L	L	L	L	L	H	H	H
IN _B	L	L	L	L	L	H	H	H	L	L	L	L

Active Low

Excitation signal time chart
2-phase excitation

clock	0	1	2	3	0	1
IN _A	L	H	H	L	L	H
IN _A	H	L	L	H	H	L
IN _B	L	L	H	H	L	L
IN _B	H	H	L	L	H	H

1-2 phase excitation

clock	0	1	2	3	4	5	6	7	0	1	2	3
IN _A	L	L	H	H	H	H	L	L	L	H	H	H
IN _A	H	H	H	L	L	L	H	H	H	H	L	L
IN _B	H	L	L	L	H	H	H	H	L	L	L	L
IN _B	H	H	H	H	L	L	L	L	H	H	H	H

Component values:

- r1 : 510Ω
- r2 : 100Ω (VR)
- r3 : 47kΩ
- r4 : 47kΩ
- r5 : 2.4kΩ
- r6 : 2.4kΩ
- C1 : 470pF
- C2 : 470pF
- C3 : 2200pF
- C4 : 2200pF
- R_s : 1Ω typ (7024M)
- (1 to 2W) 0.68Ω typ (7026M)
- 1.8Ω typ (7027MU)

External Dimensions (ZIP18 with Fin [SLA18Pin])

(Unit : mm)

