

SLA7031M/SLA7032M/SLA7033M

2-Phase/1-2 Phase Excitation

Absolute Maximum Ratings

(T_a=25°C)

Parameter	Symbol	Ratings			Unit
		SLA7031M	SLA7032M	SLA7033M	
Motor Supply Voltage	V _{CC}	46			V
Control Supply Voltage	V _S	46			V
FET Drain-Source Voltage	V _{DSS}	100			V
Input Voltage	V _{IN}	-0.3 to +7			V
	V _{SYNC}	-0.3 to +7			
Reference Voltage	V _{REF}	-0.3 to +7			V
Sense Voltage	V _{RS}	-5 to +7			V
Output Current	I _O	1	1.5	3	A
	P _{D1}	4.5(Without Heatsink)			W
Power Dissipation	P _{D2}	35(T _c =25°C)			W
Channel Temperature	T _{ch}	+150			°C
Operating Ambient Temperature	T _a	-20 to +85			°C
Storage Temperature	T _{stg}	-40 to +150			°C

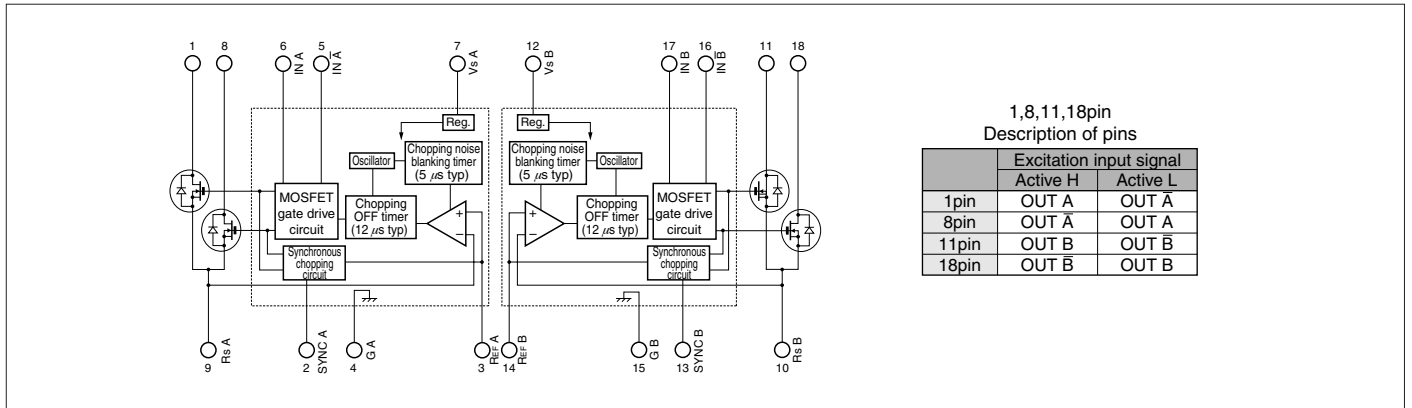
Recommended Operating Conditions

Parameter	Symbol	Ratings		Unit	Remarks
		min.	max.		
Motor Supply Voltage	V _M		44	V	
Control Supply Voltage	V _S	10	44	V	
REF Input Voltage	V _{REF}	0.1	1.0	V	The control current precision is degraded at 0.1V or lower.
	V _{REF(dis)}	4.0	5.5	V	Output MOS FET OFF
Case Temperature	T _C		100	°C	Temperature of 4(15)-Pin Lead(without heatsink)

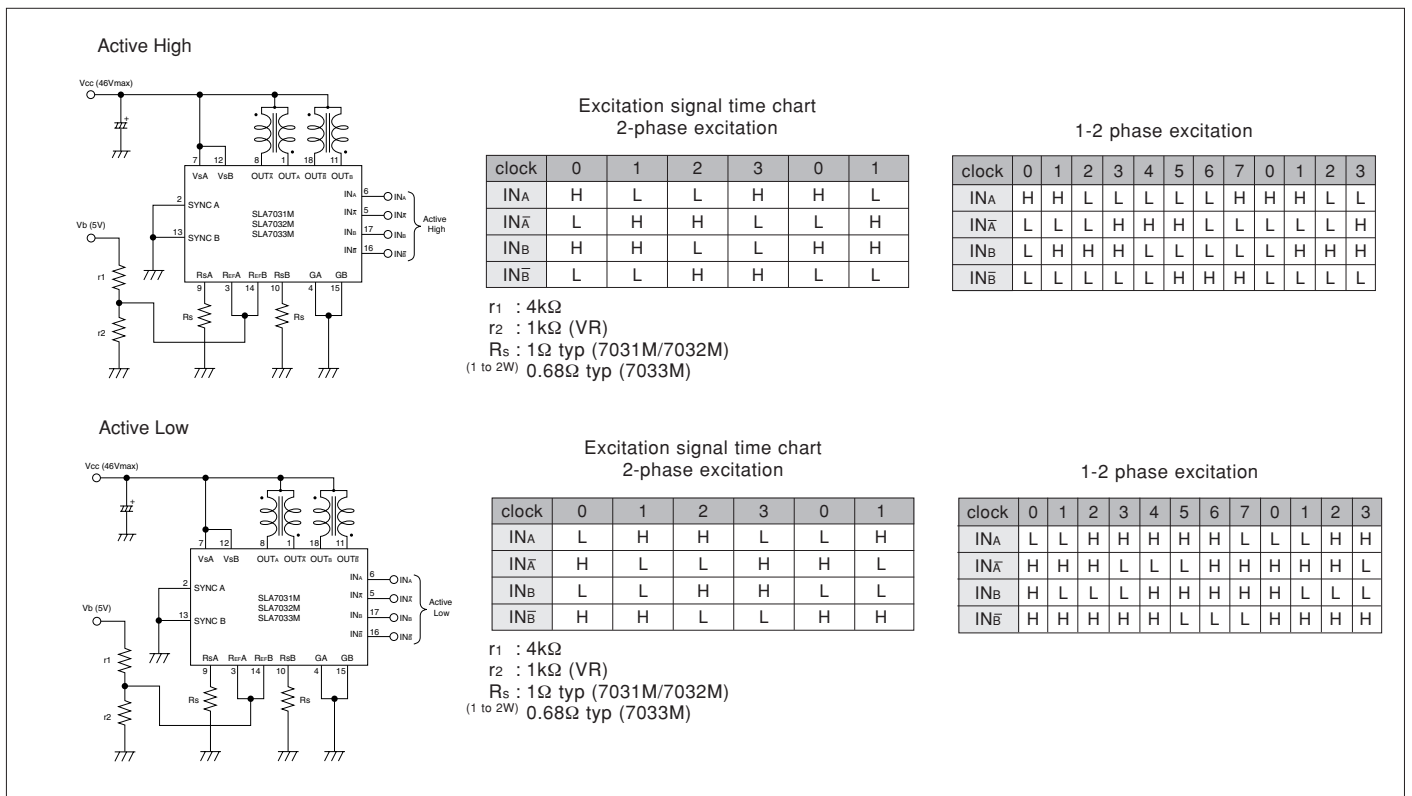
Electrical Characteristics

Parameter	Symbol	Ratings									Unit				
		SLA7031M			SLA7032M			SLA7033M							
		min.	typ.	max.	min.	typ.	max.	min.	typ.	max.					
Control Supply Current	I _S	10			15			10			15			mA	
	Condition	V _S =44V													
Control Supply Voltage	V _S	10	24	44	10	24	44	10	24	44	V				
FET Drain-Source Voltage	V _{DSS}	100									V				
	Condition	V _S =44V, I _{DSS} =250μA													
FET ON Voltage	V _{DS}				0.85						0.85			V	
	Condition	I _D =1A, V _S =10V													
FET Diode Forward Voltage	V _{SD}				1.2						2.3			V	
	Condition	I _{SD} =1A													
FET Drain Leakage Current	I _{DSS}				250						250			μA	
	Condition	V _{DSS} =100V, V _S =44V													
IN Terminal	Input Voltage (Active High)	V _{IH}	2.0									V			
		Condition	I _D =1A												
		V _{IL}				0.8							0.8		
	Input Voltage (Active Low)	V _{IH}	2.0									V			
		Condition	V _{DSS} =100V												
		V _{IL}				0.8							0.8		
Input Current	I _I				±1						±1			μA	
	Condition	V _S =44V, V _I =0 or 5V													
SYNC Terminal	Input Voltage	V _{SYNC}	4.0									V			
		Condition	Synchronous chopping mode												
	V _{SYNC}				0.8						0.8				
	Condition	Asynchronous chopping mode													
Input Current	I _{SYNC}				0.1						0.1			mA	
	Condition	V _S =44V, V _{SYNC} =5V													
	I _{SYNC}				-0.1						-0.1				
	Condition	V _S =44V, V _{SYNC} =0V													
REF Terminal	Input Current	V _{REF}	0			2.0			0			2.0			V
		Condition	Reference Voltage input												
	V _{REF}	4.0			5.5			4.0			5.5				
	Condition	Output FET OFF													
Input Current	I _{REF}				±1						±1			μA	
	Condition	No synchronous trigger													
Internal Resistance	R _{REF}	40									Ω				
	Condition	Resistance between GND and REF terminal at synchronous trigger													
Sense Voltage	V _{RS}	V _{REF}			V _{REF}			V _{REF}			V _{REF}			V	
Switching Time	T _r	0.5									μs				
	T _{stg}	0.7													
	T _f	0.1													
	Condition	V _S =24V, I _D =0.8A													
Chopping OFF Time	T _{OFF}	12									μs				
	Condition	V _S =24V													

Internal Block Diagram



Typical Connection Diagram (Recommended component values)



External Dimensions (ZIP18 with Fin [SLA18Pin])

(Unit : mm)

