

SLA7031M/SLA7032M/SLA7033M

2-Phase/1-2 Phase Excitation

■Absolute Maximum Ratings

(T_a=25°C)

Parameter	Symbol	Ratings			Units
		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

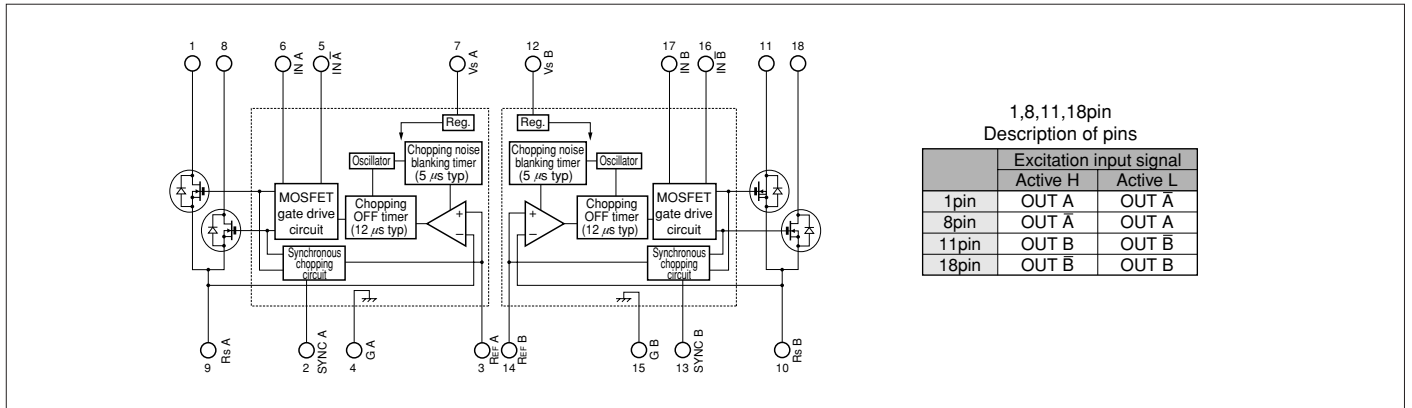
■Recommended Operating Conditions

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)

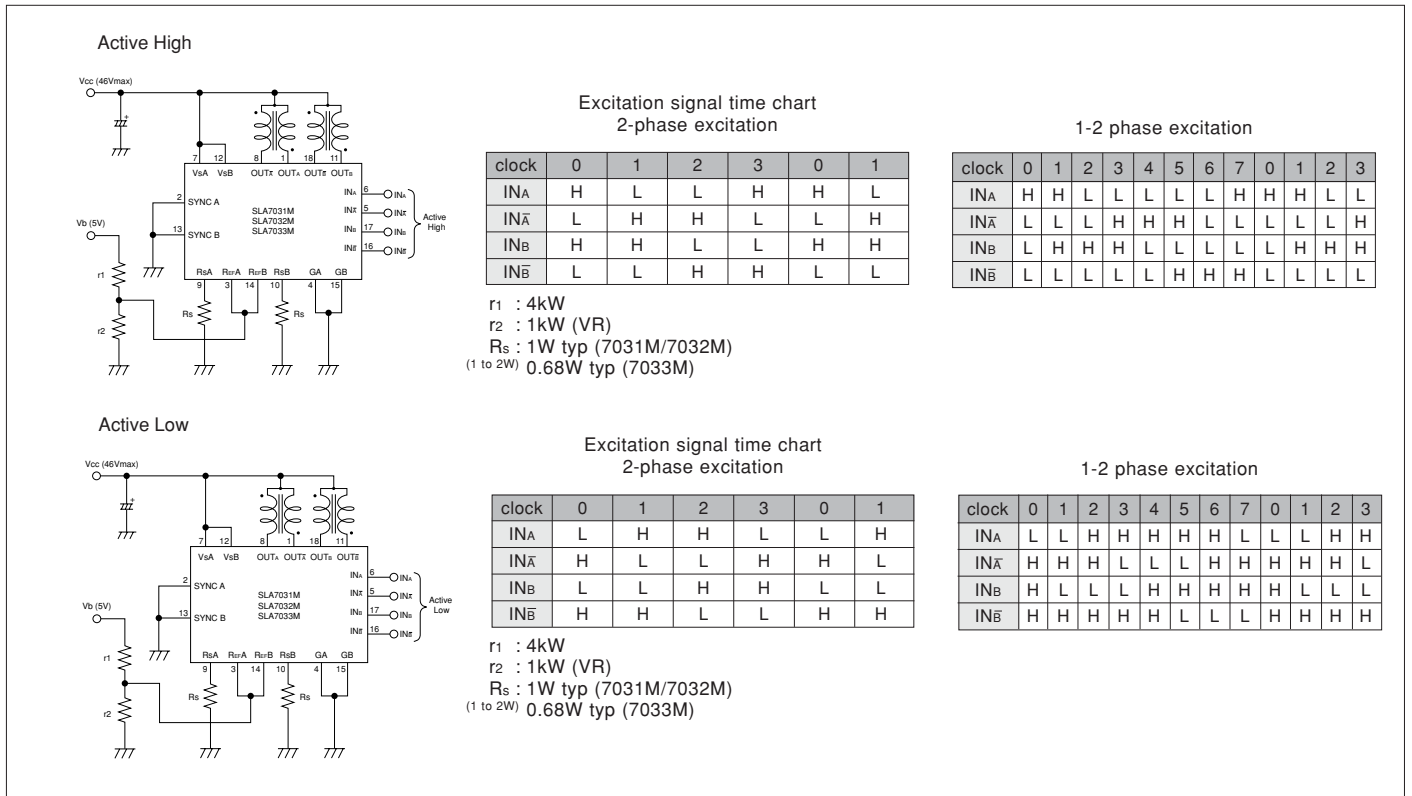
■Electrical Characteristics

Parameter	Symbol	Ratings									Units				
		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 _{OSS} =250μA													
FET ON voltage	V _{DS}	0.85			0.6			0.85			V				
	Condition	I _D =1A, V _S =10V													
FET diode forward voltage	V _{SD}	1.2			1.1			2.3			V				
	Condition	I _{SD} =1A													
FET drain leakage current	I _{DSS}	250			250			250			μA				
	Condition	V _{DSS} =100V, V _S =44V													
IN terminal	Input voltage (Active High)	V _{IH}	2.0			2.0			2.0			V			
		Condition	I _D =1A												
		V _{IL}	0.8			0.8			0.8						
	Input voltage (Active Low)	V _{IH}	2.0			2.0			2.0			V			
		Condition	V _{DSS} =100V												
		V _{IL}	0.8			0.8			0.8						
Input current	I _I	±1			±1			±1			μA				
	Condition	V _S =44V, V _I =0 or 5V													
SYNC terminal	Input voltage	V _{SYNC}	4.0			4.0			4.0			V			
		Condition	Synchronous chopping mode												
	Input current	V _{SYNC}	0.8			0.8			0.8			mA			
		Condition	Asynchronous chopping mode												
REF terminal	Input current	I _{SYNC}	0.1			0.1			0.1			mA			
		Condition	V _S =44V, V _{SYNC} =5V												
	Input current	I _{SYNC}	-0.1			-0.1			-0.1			mA			
		Condition	V _S =44V, V _{SYNC} =0V												
Sense Voltage	Input current	V _{REF}	0			2.0			0			2.0			V
		Condition	Reference voltage input												
	Internal resistance	V _{REF}	4.0			5.5			4.0			5.5			μA
		Condition	Output FET OFF												
Switching time	Input current	I _{REF}	±1			±1			±1			μA			
		Condition	No synchronous trigger												
	Chopping OFF time	R _{REF}	40			40			40			Ω			
		Condition	Resistance between GND and REF terminal at synchronous trigger												
Chopping OFF time	V _{RS}	V _{REF}	0.5			0.5			0.5			V			
		Condition	Resistance between GND and REF terminal at synchronous trigger												
	T _{rs}	T _{rs}	0.7			0.7			0.7			μs			
		Condition	V _S =24V, I _D =0.8A												
T _{isg}	T _{isg}	0.1			0.1			0.1			μs				
	Condition	V _S =24V, I _D =1A													
T _{off}	T _{off}	12			12			12			μs				
	Condition	V _S =24V													

Internal Block Diagram



Typical Connection Diagram (Recommended component values)



External Dimensions

(Unit : mm)

