

Unipolar Driver ICs

SLA7022MU SLA7029M

WITH MOSFETs

■ Ratings

Type No.	Absolute maximum ratings	Motor supply Voltage	FET output breakdown voltage	Control voltage	TTL input voltage	Reference voltage	Output current	Power dissipation	Channel temperature	Storage temperature
	(V)	(V)	(V)	(V)	(V)	(V)	(A)	(W)	(°C)	(°C)
SLA7022MU	V_{CC}	V_{DS}	V_S	V_{IN}	V_{REF}	I_O	P_D	T_{ch}	T_{stg}	
SLA7029M	46	100	46	7	2	1	4.5 (No Fin)	150	-40 to +150	
						1.5				

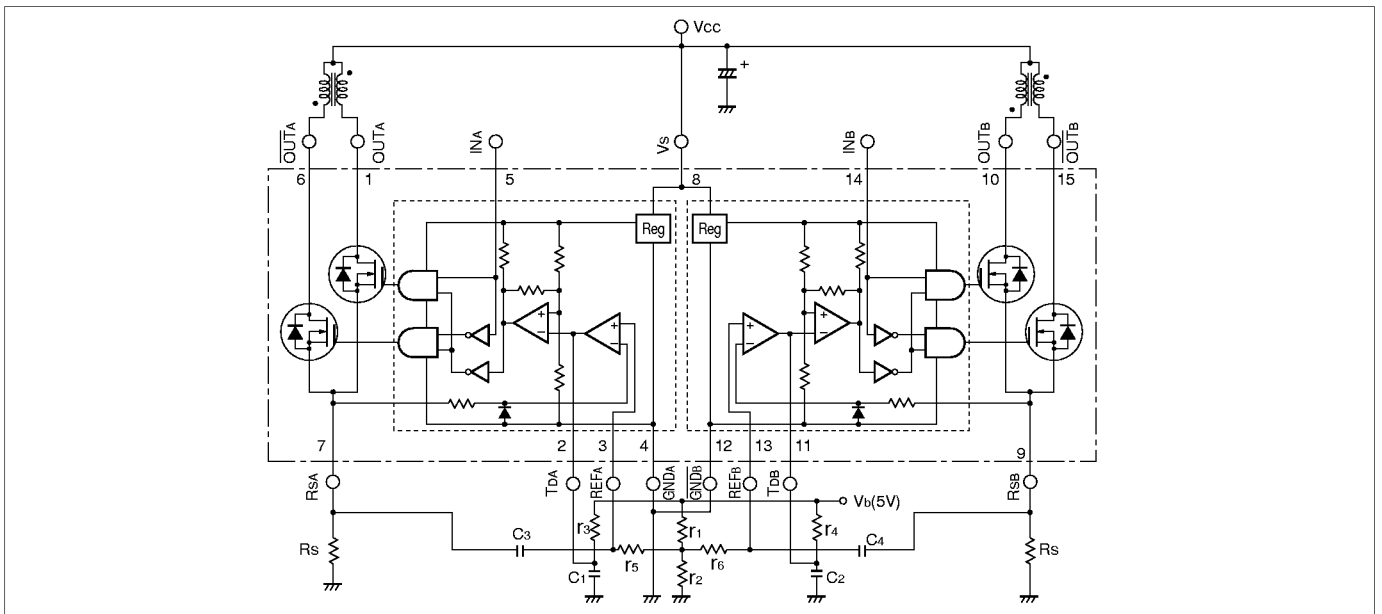
■ Characteristics (1) DC Characteristics

Type No.	Control current (mA)			Control voltage (V)			FET turn-on voltage (V)			FET drain leak current (mA)			TTL input current (μ A)			TTL input current (mA)			TTL input voltage (OUT) (V)			TTL input voltage (V)			TTL input voltage (OUT) (V)			TTL input voltage (V)				
	$V_S = 44V$			V_S			$I_D = 1A, V_S = 14V$			$V_{DSS} = 100V, V_S = 44V$			$V_{IH} = 2.4V, V_S = 44V$			$V_{IL} = 0.4V, V_S = 44V$			$I_D = 1A$			$V_{DSS} = 100V$			$V_{DSS} = 100V$			$I_D = 1A$				
	I_S			V_S			V_{DS}			I_{DSS}			I_{IH}			I_{IL}			V_{IH}			V_{IL}			V_{IH}			V_{IL}				
	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ
SLA7022MU	10	15	10	24	44			0.85			4			40			-0.8	2.0					0.8	2.0							0.8	
SLA7029M								0.6																								

(2) AC Characteristics

Type No.	FET diode forward voltage (V)			Switching time (μ s)								
	$I_{SD} = 1A$			$V_S = 24V$ (7022MU) $I_D = 0.8A$ (7029M) $I_D = 1A$								
	V_{SD}			T_r			T_{stg}			T_f		
min	typ	max	min	typ	max	min	typ	max	min	typ	max	
SLA7022MU			1.2	0.5			0.7			0.1		
SLA7029M			1.1									

■ Internal circuit diagram (enclosed with chain line)



SLA7022MU and SLA7029M

Diagram of standard external circuit (Recommended circuit constants)

The diagram shows the internal and external components of the SLA7022MU and SLA7029M. Key components include:

- Power Supply:** Vcc (46V max) connected to pins 8, 1, 6, 10, and 15.
- Reference Voltage:** VREF (5V) connected to pin 2 through resistors r3, r4, and r1.
- Feedback Network:** Resistors r2, r5, r6, and capacitors C1, C2, C3, C4 connected to pins 11, 7, 13, and 9.
- Output Drivers:** Transistors with resistors r5, r6, and capacitors C3, C4 connected to pins 3, 13, and 9.
- Control Signals:** TdA and TdB signals connected to pins 2 and 11.

Excitation signal time chart
2-phase excitation

clock	0	1	2	3	0	1
INA	H	H	L	L	H	H
INB	L	H	H	L	L	H

1-2 phase excitation

clock	0	1	2	3	4	5	6	7	0	1	2	3
INA	H	H	H	H	L	L	L	L	H	H	H	H
tdA	L	L	L	H	L	L	L	H	L	L	L	L
INB	L	L	H	H	H	H	L	L	L	L	L	H
tdB	L	H	L	L	L	H	L	L	L	H	L	L

• tda and tdb are signals before the inverter stage.

r1 510Ω
 r2 100Ω (VR)
 r3 47kΩ
 r4 47kΩ
 r5 2.4kΩ
 r6 2.4kΩ
 C1 330~500pF
 C2 330~500pF
 C3 2200pF
 C4 2200pF
 Rs 1.8Ω(typ)1~2W(7022MU)
 1Ω(typ)1~2W(7029M)

External dimensions

(Unit: mm)

The diagram shows the external dimensions of the epoxy resin package. Key dimensions include:

- Top View:** Overall width 31.3±0.2 mm, pin pitch 2.03±0.7 mm (14 pins), and mounting hole diameter 3.2±0.15 mm.
- Side View:** Package height 4.8±0.2 mm, lead height 1.7±0.1 mm, and lead thickness 0.65±0.2 mm.
- Bottom View:** Pin pitch 2.03±0.7 mm (14 pins) and overall width 31.3±0.2 mm.

Epoxy resin package

Forming number No. 853

Forming number No. 855