Electrical Characteristics at Ta = 25°C, V_{CC} = 1.9V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Source current	$I_{CCO}1$	V_{CC} = 1.9V,IN1 to IN4 = Low level		0.01	1	μA
	$I_{CCO}2$	V_{CC} = 3V,IN1 to IN4 = Low level		0.01	1	μA
	$I_{CC}1$	IN1 = High level,IN2 to IN4 = Low level		18	25	mA
	$I_{CC}2$	IN1 = High level,IN2 to IN4 = Low level, V_{CC} = 3V		19	27.5	mA
Output saturation voltage1 (single connection)	$V_{OUT}11$	I_{OUT} = 270mA,V_{CC} = 1.9V to 3.6V, Ta = -20 to 85°C V_{OUT} = Upper Tr and Under Tr IN1 = High level, IN2 to IN4 = Low level Supplementation: Standard similar as for IN2 to IN4 = High level		0.2	0.3	V
	$V_{OUT}12$	I_{OUT} = 350mA,V_{CC} = 1.9V to 3.6V, Ta = -20 to 85°C V_{OUT} = Upper Tr and Under Tr IN1 = High level, IN2 to IN4 = Low level Supplementation: Standard similar as for IN2 to IN4 = High level		0.25	0.4	V
Output saturation voltage2 (parallel connection)	$V_{OUT}21$	I_{OUT} = 270mA,V_{CC} = 1.9V to 3.6V, Ta = -20 to 85°C V_{OUT} = Upper Tr and Under Tr OUT1-3,OUT2-4 short. IN1 and IN3 = High level, IN2 and IN4 = Low level Supplementation: Standard similar as for IN2 and IN4 = High level		0.12	0.2	V
	$V_{OUT}22$	I_{OUT} = 500mA,V_{CC} = 1.9V to 3.6V, Ta = -20 to 85°C V_{OUT} = Upper Tr and Under Tr OUT1-3,OUT2-4 short. IN1 and IN3 = High level,IN2 and IN4 = Low level Supplementation: Standard similar as for IN2 and IN4 = High level		0.2	0.35	V
Output electric current with the parasitic element	I_{PA}	V_{IN} = 1.9 to 3.6V, Ta = -20 to 85°C *1			9	mA
Input current	I_{IN}	V_{IN} = 1.9V		32	70	μA
Themal shutdown operation temperature	Ttsd	*2: Design guarantee		140		°C
Temperature hysteresis width	ΔT	*2: Design guarantee		20		°C
Spark killer Diode						
Reverse current	I_S(leak)	V_{CC}-OUT = 8V, V_{IN} = Low level			10	μA
Forword voltage	V_{SF}	I_{SF} = 400mA, V_{IN} = Low level			1.7	V

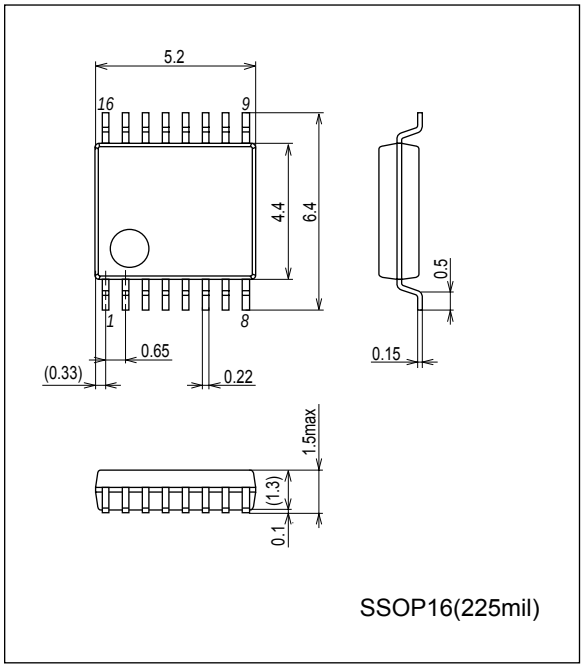
*1: Output electric current with the parasitic element_I_{PA}: The current value that the off ch(-free) output is pulled at the time of one side ch drive by a parasitic element

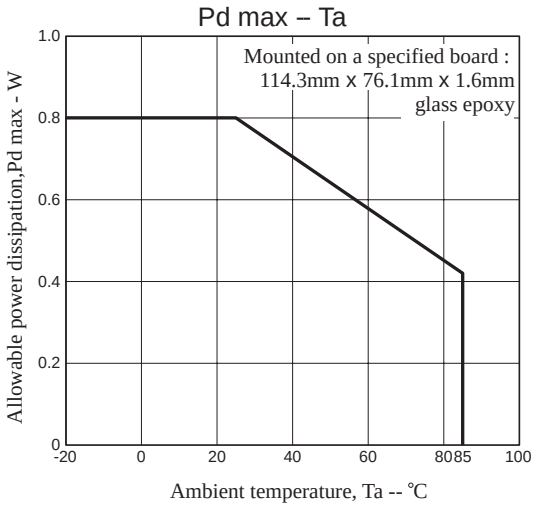
*2: Design guarantee value and does not measure

* VSF: The current order direction voltage true in a time

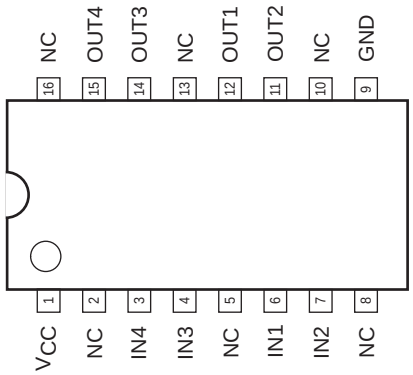
Package Dimensions

unit : mm (typ)
3178B





Pin Assignment



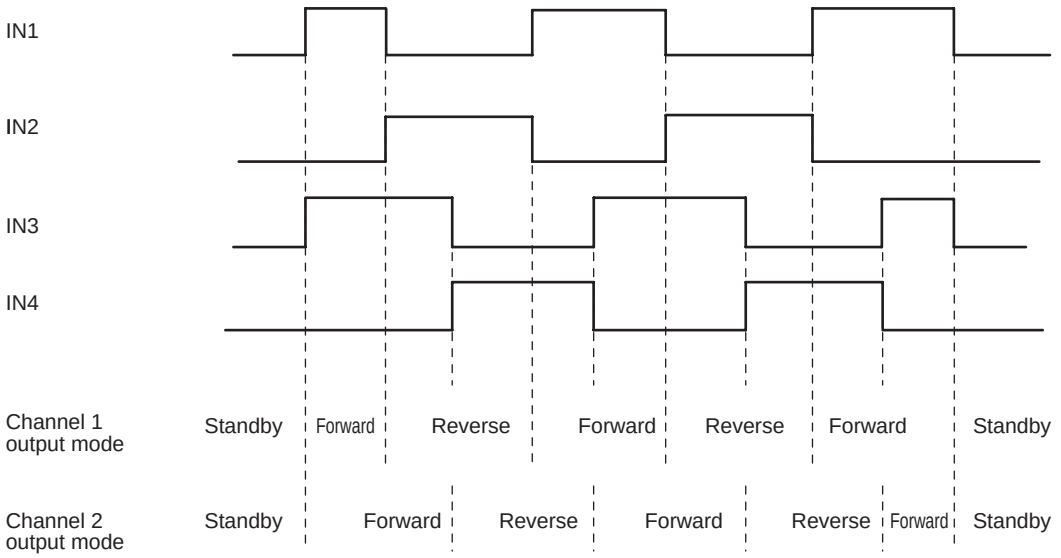
(Top View)

Truth Table

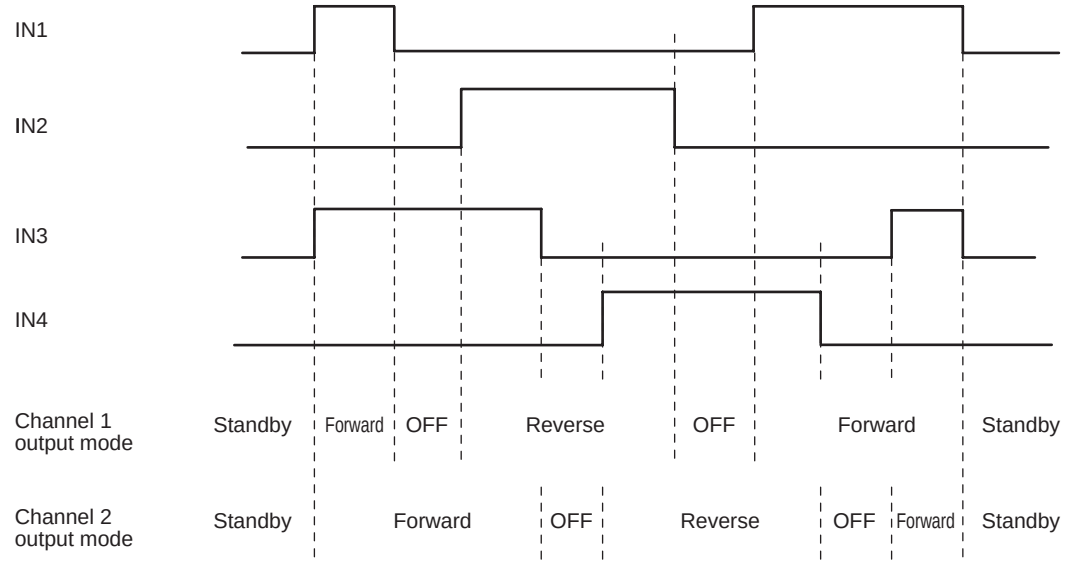
Input				Output				Mode
IN1	IN2	IN3	IN4	OUT1	OUT2	OUT3	OUT4	
Low	Low	Low	Low	Off	Off	Off	Off	Standby mode
High	Low	-	-	High	Low	-	-	Channel 1, forward
Low	High			Low	High			Channel 1, reverse
-	-	High	Low	-	-	High	Low	Channel 2, forward
		Low	High			Low	High	Channel 2, reverse
High	High	-	-	The logic output for the first high-level input is produced.				
-	-	High	High					

Stepping motor control example

(1) Timing chart for 2-phase drive



(2) Timing chart for 1-2 phase drive



Block Diagram