Ordering number : ENN7432

ExPD (Excellent Power Device)

4AM03MH5

Buffer with Open Drain Output (Low-side Switch)

Features

- Low-side switch. (Inverter input)
- Enable to 25 voltage operation.
- Low power-loss.
- Open drain output.

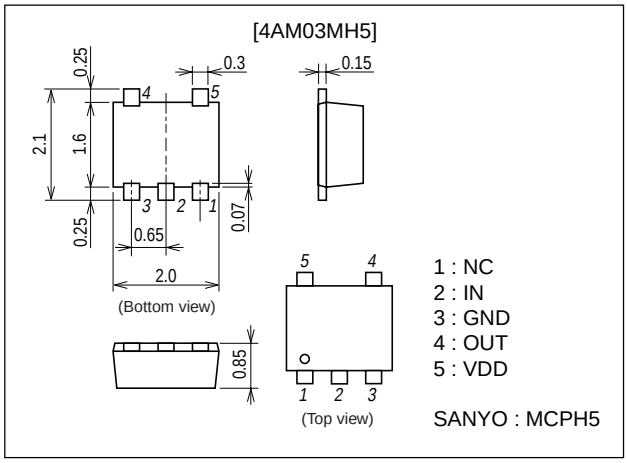
Truth Table

IN	OUT
L	L
H	Z

H : High level voltage
L : Low level voltage
Z : High impedance

Package Dimensions

unit : mm
2217



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
DC Supply Voltage	V_{DD}		-0.3 to +25	V
Input Voltage	V_{IN}		-0.3 to V_{DD}+0.3	V
Output Voltage	V_{OUT}		-0.3 to +25	V
Input Current	I_{IN}		±10	mA
Output Current	I_{OUT}		75	mA
Allowable Power Dissipation	P_D	Mounted on a ceramic board (600mm²×0.8mm)	0.8	W
Storage Temperature	Tstg		-55 to +150	°C

Recommended Operating Conditions at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
DC Supply Voltage	V_{DD}		3 to +25	V
Input Voltage	V_{IN}		0 to V_{DD}	V
Output Voltage	V_{OUT}		0 to +25	V
Input Rise And Fall Time	Δt / Δv	V_{DD}<5V	≤100	ns / V
		V_{DD}≥5V	20	ns / V
Operating Temperature	Topr		-40 to +85	°C

Marking : XJ

SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

DC Characteristics at Ta=25°C

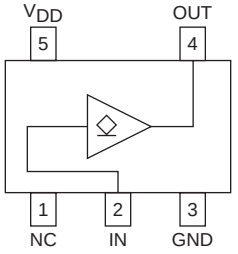
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
High-level Input Voltage	V_{IH}	V_{DD}=5V	3.5			V
		V_{DD}=10V	7.0			V
		V_{DD}=15V	11.0			V
		V_{DD}=25V	18.0			V
Low-level Input Voltage	V_{IL}	V_{DD}=5V			1.5	V
		V_{DD}=10V			3.0	V
		V_{DD}=15V			4.0	V
		V_{DD}=25V			7.0	V
Input Leakage Current	I_{IN}	V_{DD}=25V, V_{IN}=25V			0.1	μA
		V_{DD}=25V, V_{IN}=0			0.1	μA
Low-level Output Voltage	V_{OL}	V_{DD}=5V, I_O=1mA			0.5	V
		V_{DD}=10V, I_O=2.5mA			1.0	V
		V_{DD}=15V, I_O=5.0mA			1.5	V
		V_{DD}=25V, I_O=10mA			2.5	V
Supply Current	I_{DD}	V_{DD}=5V, V_{IN}=V_{DD}, GND			0.25	μA
		V_{DD}=10V, V_{IN}=V_{DD}, GND			0.5	μA
		V_{DD}=15V, V_{IN}=V_{DD}, GND			1.0	μA
		V_{DD}=25V, V_{IN}=V_{DD}, GND			2.0	μA

AC Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Propagation Delay Time	t_{PZL}	V_{DD}=5V, R_L=1.5kΩ		40		ns
		V_{DD}=10V, R_L=1kΩ		20		ns
		V_{DD}=15V, R_L=750Ω		15		ns
		V_{DD}=25V, R_L=500Ω		12		ns
	t_{PLZ}	V_{DD}=5V, R_L=1.5kΩ		30		ns
		V_{DD}=10V, R_L=1kΩ		20		ns
		V_{DD}=15V, R_L=750Ω		15		ns
		V_{DD}=25V, R_L=500Ω		12		ns
Input Capacitance	C_{IN}			8		pF

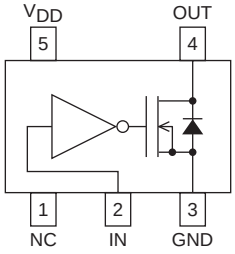
Block Diagram

・Buffer (Open Drain)

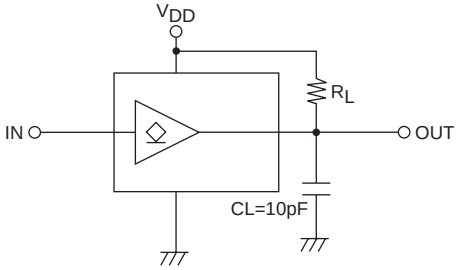


Equivalent Circuit

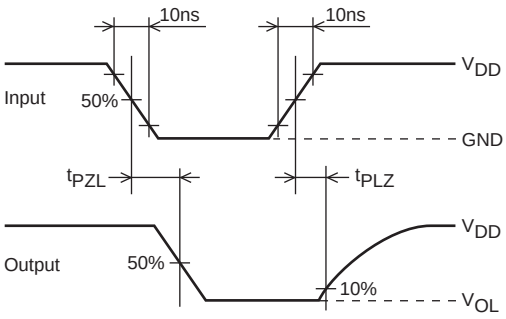
・Low-side Switch (Inverter input)

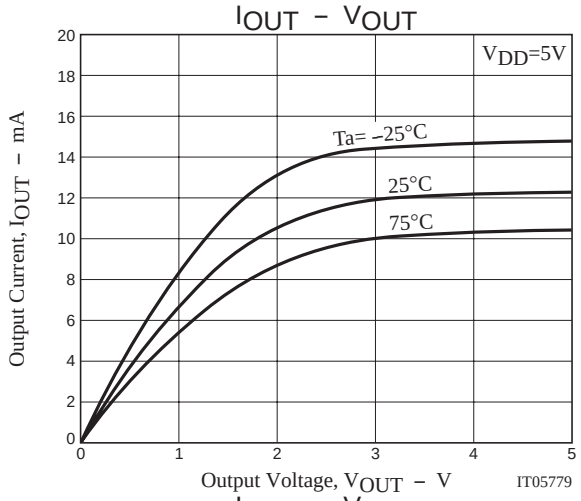


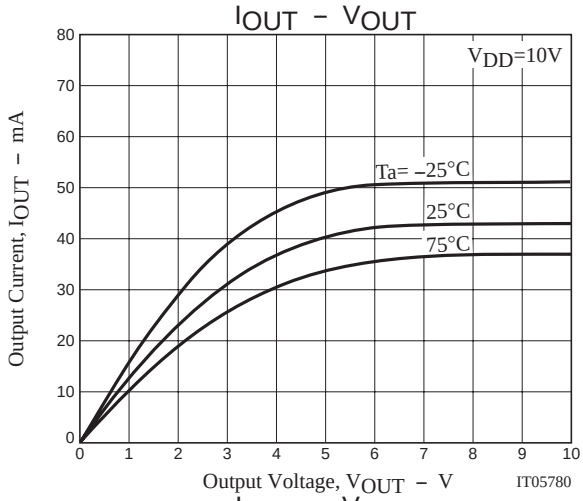
Switching Time Test Circuit

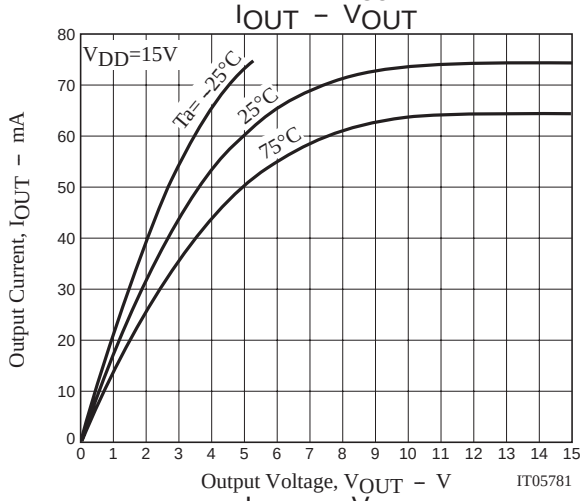


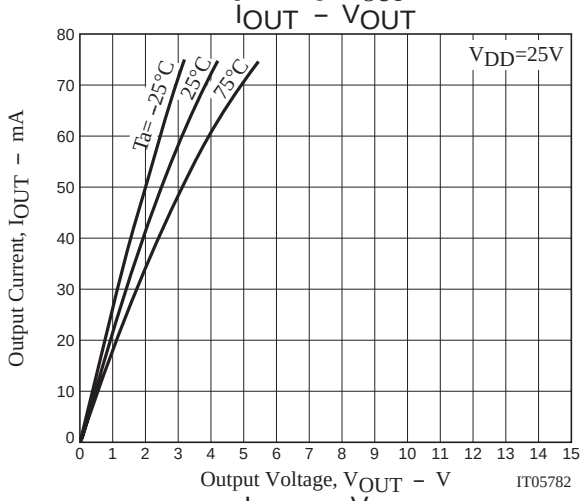
Switching Time Wave Form

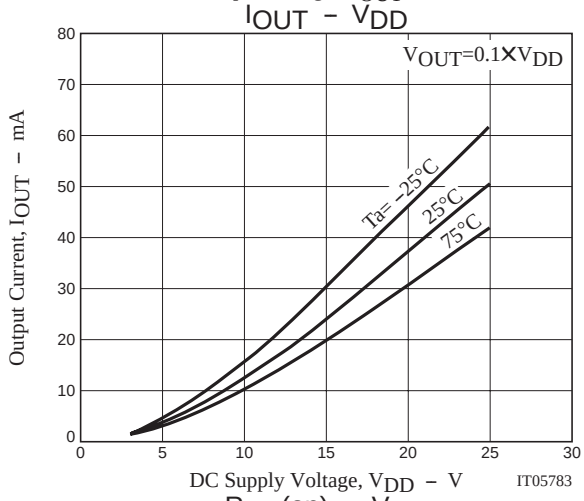


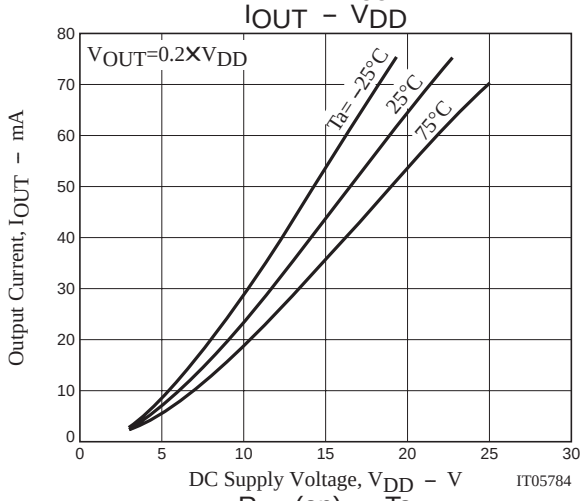

IOUT – VOUT
VDD=5V
Ta= –25°C
25°C
75°C
Output Current, IOUT – mA
Output Voltage, VOUT – V
IT05779

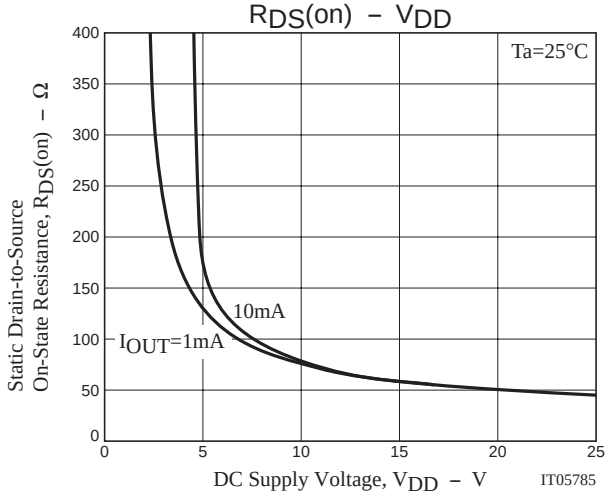

IOUT – VOUT
VDD=10V
Ta= –25°C
25°C
75°C
Output Current, IOUT – mA
Output Voltage, VOUT – V
IT05780

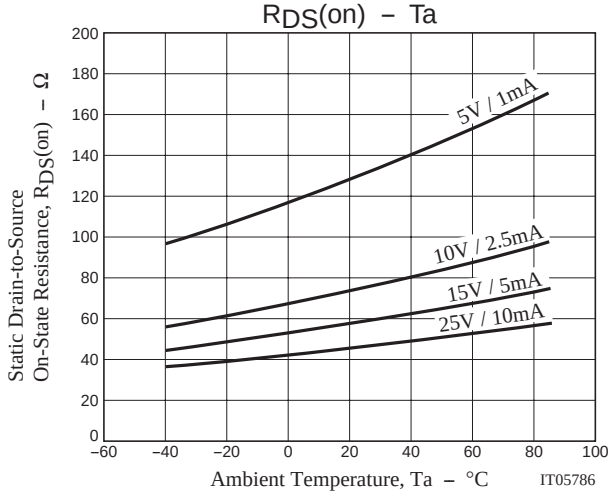

IOUT – VOUT
VDD=15V
Ta= –25°C
25°C
75°C
Output Current, IOUT – mA
Output Voltage, VOUT – V
IT05781

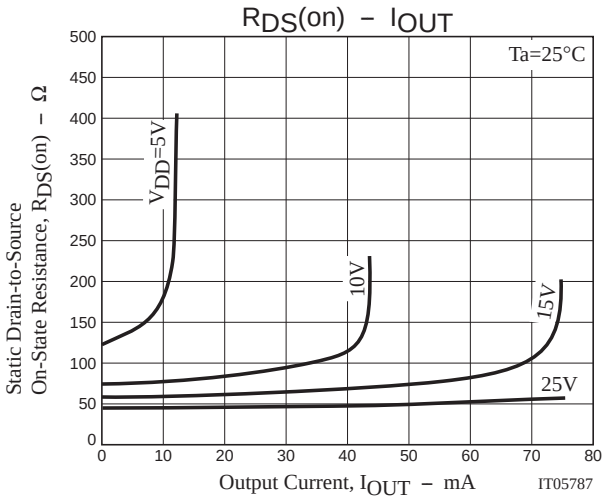

IOUT – VOUT
VDD=25V
Ta= –25°C
25°C
75°C
Output Current, IOUT – mA
Output Voltage, VOUT – V
IT05782

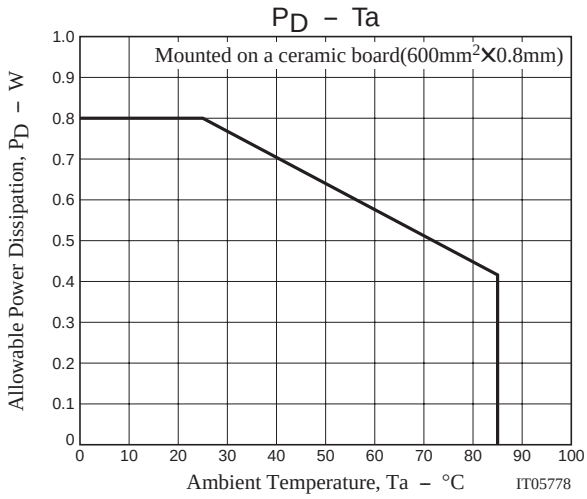

IOUT – VDD
VOUT=0.1×VDD
Ta= –25°C
25°C
75°C
Output Current, IOUT – mA
DC Supply Voltage, VDD – V
IT05783


IOUT – VDD
VOUT=0.2×VDD
Ta= –25°C
25°C
75°C
Output Current, IOUT – mA
DC Supply Voltage, VDD – V
IT05784


RDS(on) – VDD
Ta=25°C
10mA
IOUT=1mA
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
DC Supply Voltage, VDD – V
IT05785


RDS(on) – Ta
5V / 1mA
10V / 2.5mA
15V / 5mA
25V / 10mA
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Ambient Temperature, Ta – °C
IT05786





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