

HN1J02FU

High Speed Switching Applications

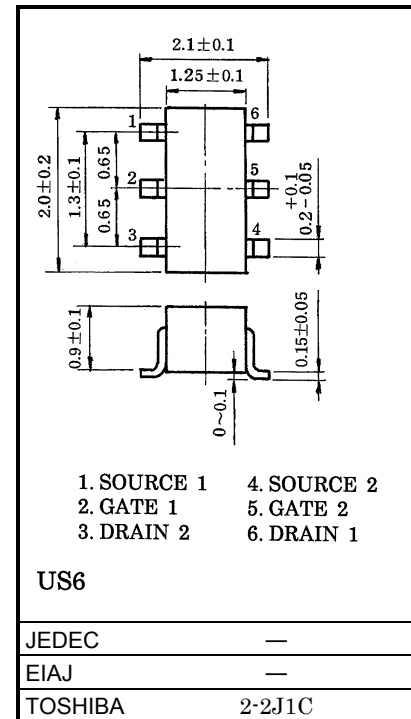
Analog Switch Applications

Unit in mm

- High input impedance
- Low threshold voltage: $V_{th} = -0.5V \sim -1.5V$
- High speed
- Small package

Absolute Maximum Ratings (Ta = 25°C) (Q1, Q2 Common)

Characteristic	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	-20	V
Gate-source voltage	V_{GSS}	-7	V
DC drain current	I_D	-50	mA
Drain power dissipation	P_D^*	200	mW
Channel temperature	T_{ch}	150	°C
Storage temperature range	T_{stg}	-55~150	°C



Weight: 6.8mg

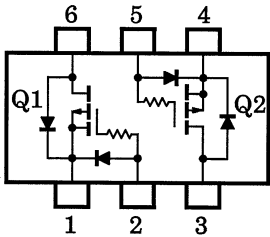
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

* Total rating

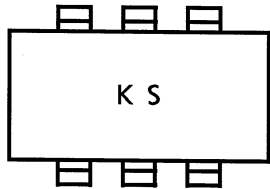
Electrical Characteristics (Ta = 25°C) (Q1, Q2 Common)

Characteristic		Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GSS}	—	$V_{GS} = -7V, V_{DS} = 0$	—	—	-1	μA
Drain-source breakdown voltage		$V_{(BR) DSS}$	—	$I_D = -100\mu A, V_{GS} = 0$	-20	—	—	V
Drain cut-off current		I_{DSS}	—	$V_{DS} = -20V, V_{GS} = 0$	—	—	-1	μA
Gate threshold voltage		V_{th}	—	$V_{DS} = -3V, I_D = -0.1mA$	-0.5	—	-1.5	V
Forward transfer admittance		$ Y_{fs} $	—	$V_{DS} = -3V, I_D = -10mA$	15	—	—	mS
Drain-source ON resistance		$R_{DS (ON)}$	—	$I_D = -10mA, V_{GS} = -2.5V$	—	20	40	Ω
Input capacitance		C_{iss}	—	$V_{DS} = -3V, V_{GS} = 0, f = 1MHz$	—	10.4	—	pF
Reverse transfer capacitance		C_{rss}	—	$V_{DS} = -3V, V_{GS} = 0, f = 1MHz$	—	2.8	—	pF
Output capacitance		C_{oss}	—	$V_{DS} = -3V, V_{GS} = 0, f = 1MHz$	—	8.4	—	pF
Switching time	Turn-on time	t_{on}	—	$V_{DD} = -3V, I_D = -10mA, V_{GS} = 0 \sim -2.5V$	—	0.15	—	μs
	Turn-off time	t_{off}	—	$V_{DD} = -3V, I_D = -10mA, V_{GS} = 0 \sim -2.5V$	—	0.13	—	μs

Equivalent Circuit (Top View)

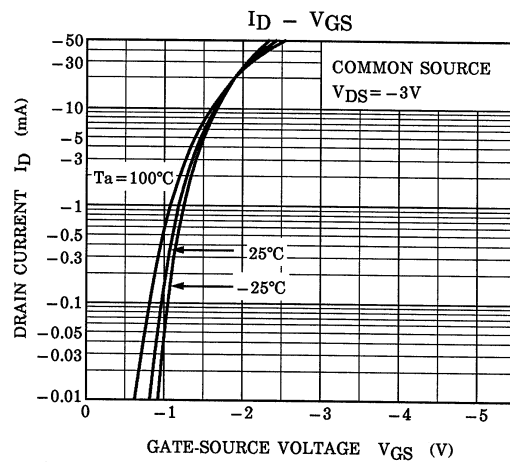
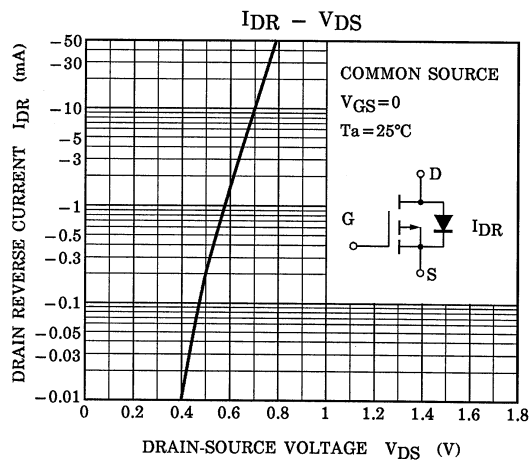
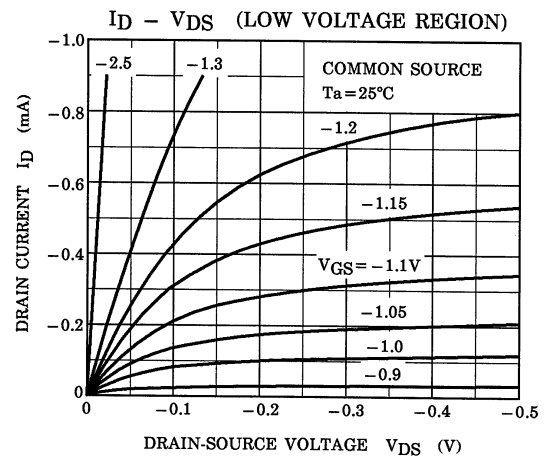
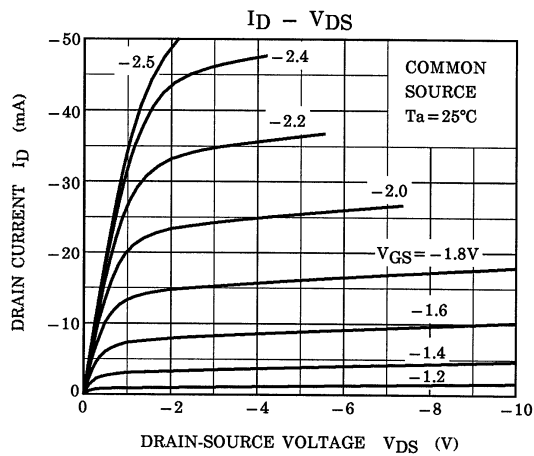
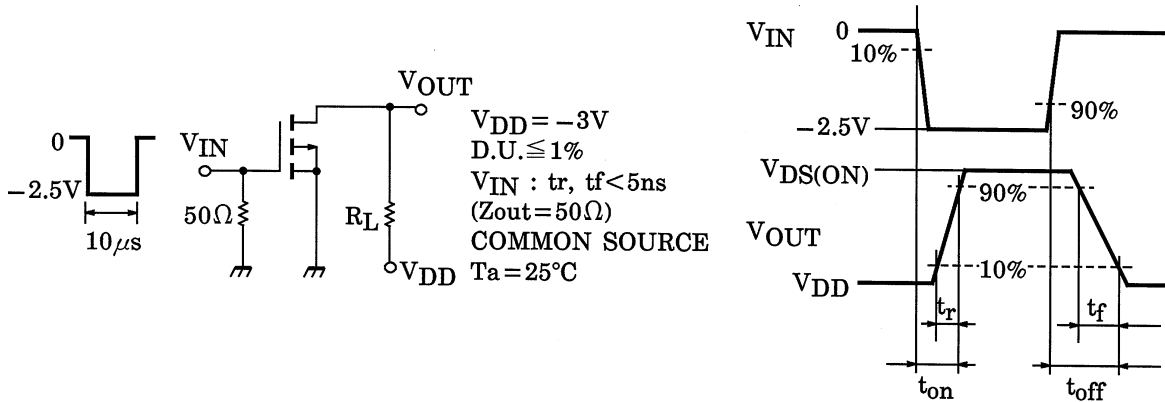


Marking

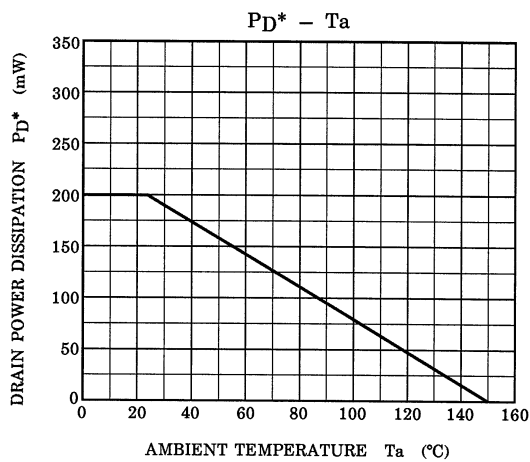
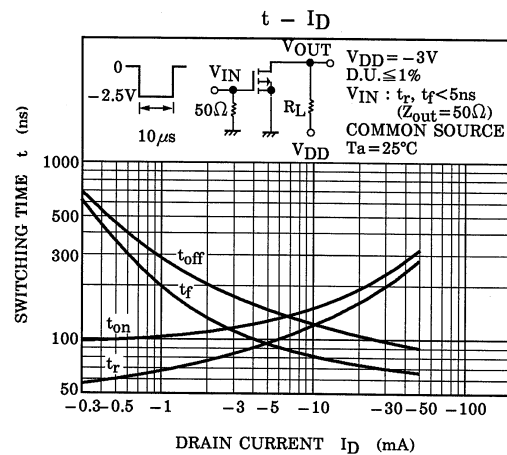
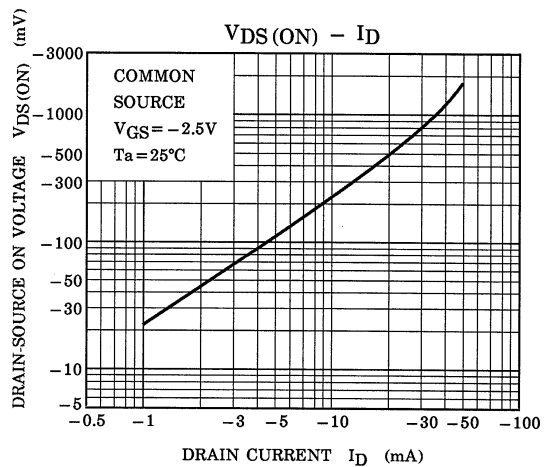
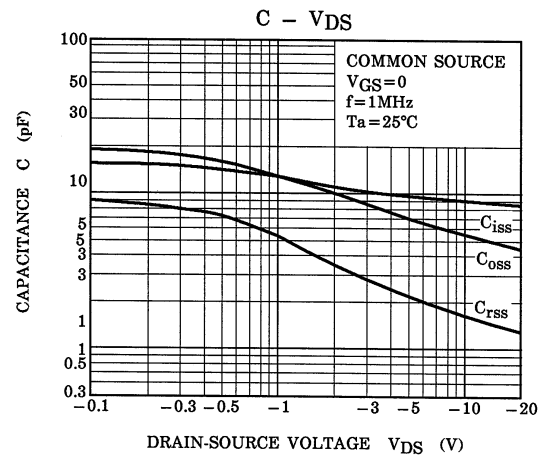
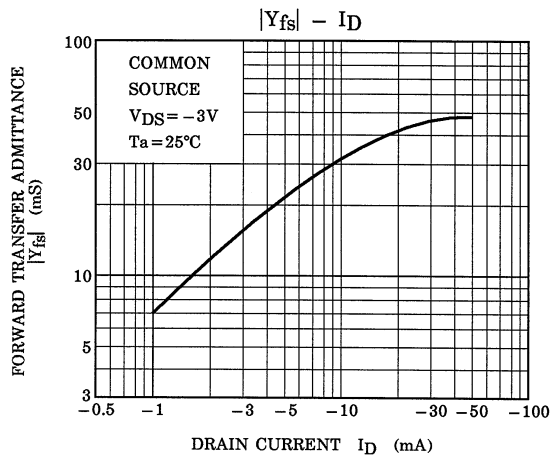


(Q1,Q2 Common)

Switching Time Test Circuit



(Q1,Q2 Common)



* : Total Rating

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20070701-EN GENERAL

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