

HN1K02FU

High Speed Switching Applications
 Analog Switch Applications

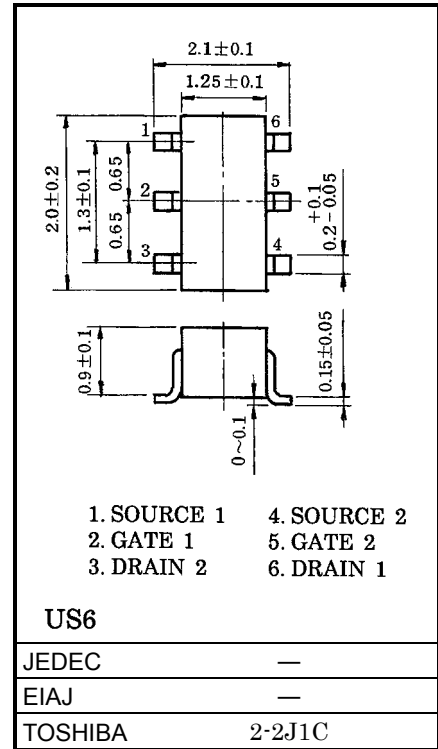
Unit in mm

- 2.5 V gate drive.
- Low threshold voltage: $V_{th} = 0.5V \sim 1.5V$
- High speed
- Enhancement-mode
- Small package

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

Characteristic	Symbol	Rating	Unit
Drain-Source voltage	V_{DS}	20	V
Gate-Source voltage	V_{GSS}	10	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

* Total rating



Weight: 6.8mg

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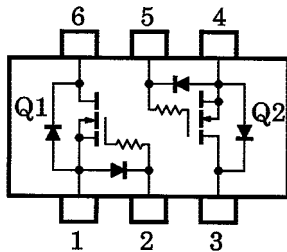
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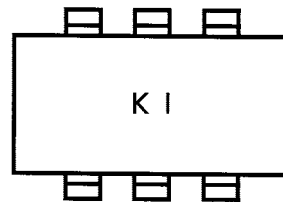
Electrical Characteristics (Ta = 25°C) (Q1, Q2 Common)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Gate leakage current	I_{GSS}	$V_{GS} = 10V, V_{DS} = 0$	—	—	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} $	$V_{DS} = 3V, I_D = 10mA$	20	—	—	mS	
Drain-Source ON resistance	$R_{DS(ON)}$	$I_D = 10mA, V_{GS} = 2.5V$	—	20	40	Ω	
Input capacitance	C_{iss}	$V_{DS} = 3V, V_{GS} = 0, f = 1MHz$	—	5.5	—	pF	
Reverse transfer capacitance	C_{rss}	$V_{DS} = 3V, V_{GS} = 0, f = 1MHz$	—	1.6	—	pF	
Output capacitance	C_{oss}	$V_{DS} = 3V, V_{GS} = 0, f = 1MHz$	—	6.5	—	pF	
Switching time	Turn-on time	t_{on}	$V_{DD} = 3V, I_D = 10mA, V_{GS} = 0 \sim 2.5V$	—	0.14	—	μs
	Turn-off time	t_{off}	$V_{DD} = 3V, I_D = 10mA, V_{GS} = 0 \sim 2.5V$	—	0.14	—	μs

Equivalent Circuit (Top View)

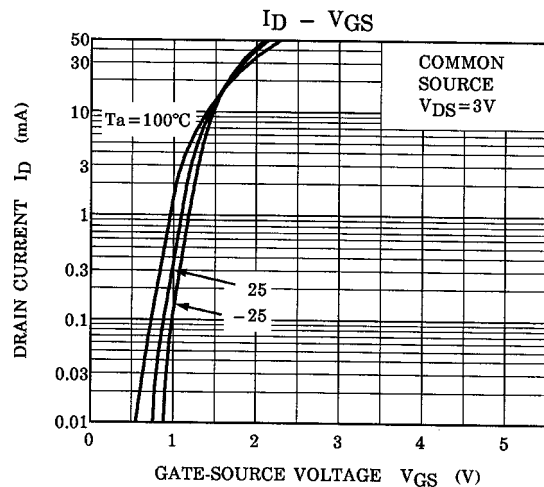
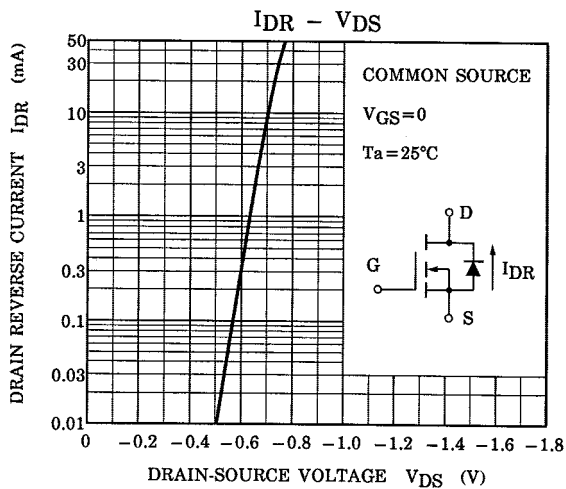
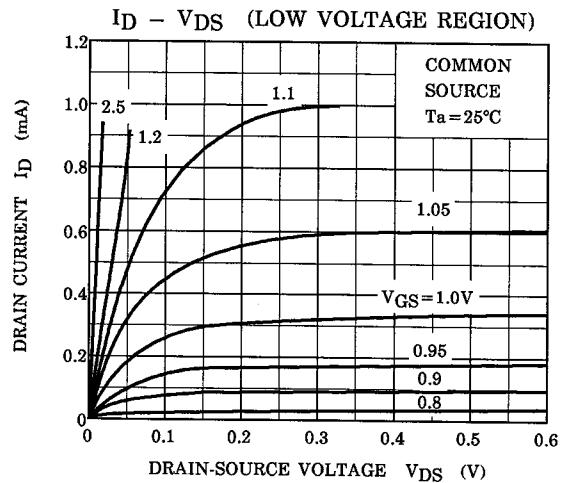
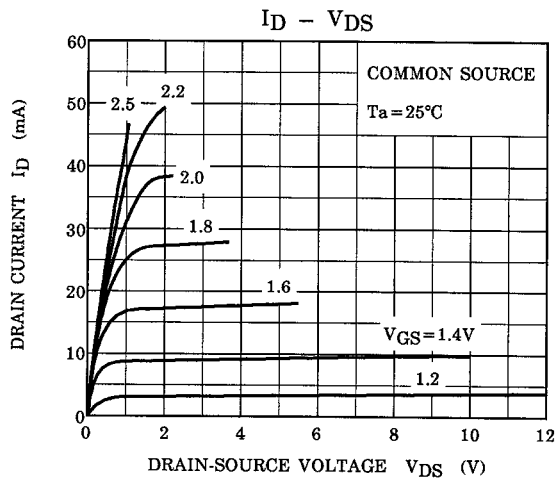
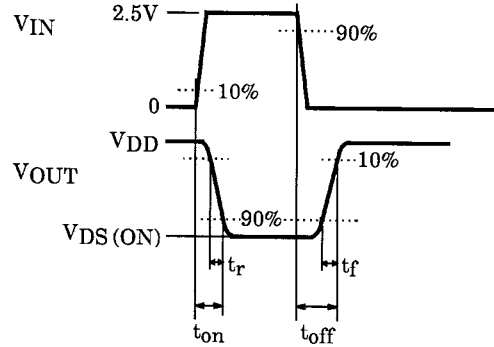
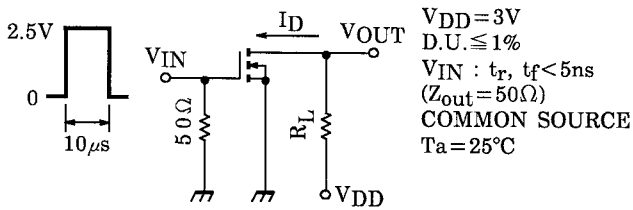


Marking

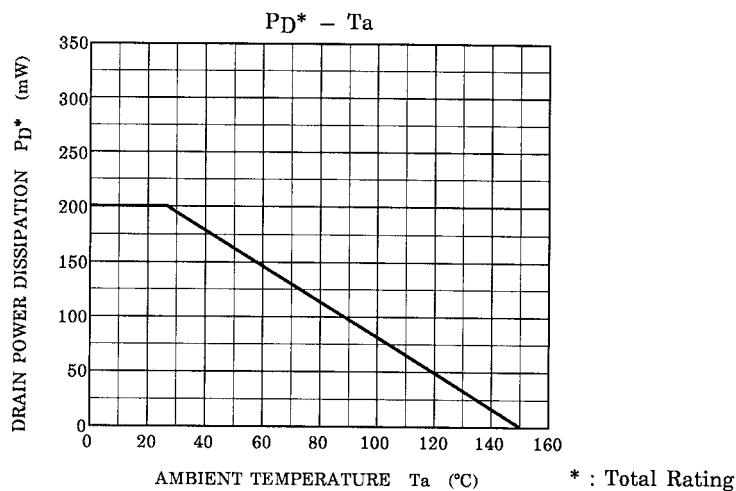
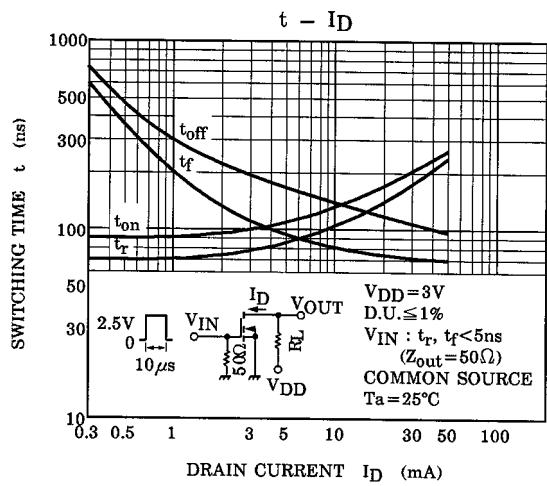
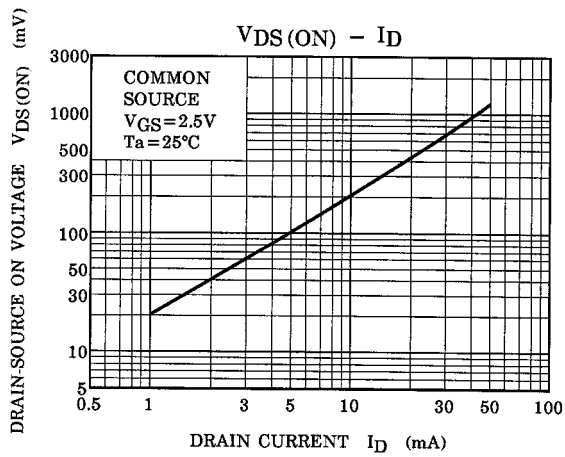
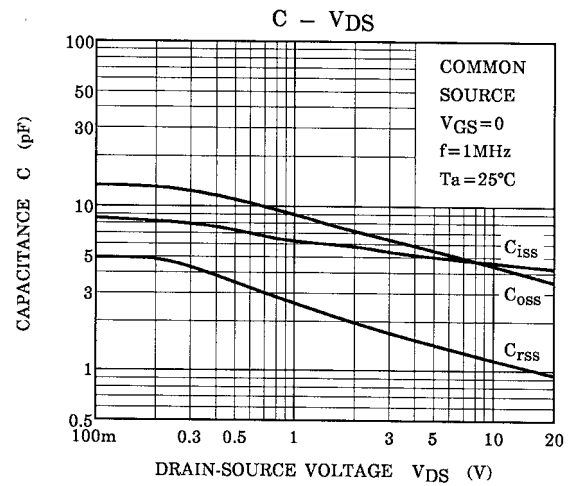
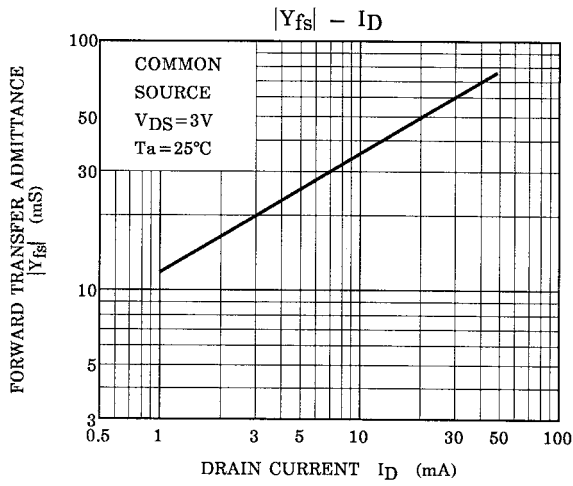


(Q1,Q2 Common)

Switching Time Test Circuit



(Q1,Q2 Common)





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