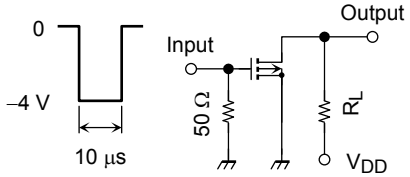
Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current		I_{GSS}	V_{GS} = ±16 V, V_{DS} = 0	—	—	±1	μA
Drain-Source breakdown voltage		$V_{(BR)\ DSS}$	I_D = −1 mA, V_{GS} = 0	−30	—	—	V
Drain cut-off current		I_{DSS}	V_{DS} = −30 V, V_{GS} = 0	—	—	−1	μA
Gate threshold voltage		V_{th}	V_{DS} = −5 V, I_D = −0.1 mA	−1.1	—	−1.8	V
Forward transfer admittance		$\|Y_{fs}\|$	V_{DS} = −5 V, I_D = −100 mA (Note2)	115	—	—	mS
Drain-Source ON resistance		$R_{DS\ (ON)}$	I_D = −100 mA, V_{GS} = −10 V (Note2)	—	2.1	2.7	Ω
			I_D = −100 mA, V_{GS} = −4 V (Note2)	—	3.3	4.2	
			I_D = −100 mA, V_{GS} = −3.3 V (Note2)	—	4.0	6.0	
Input capacitance		C_{iss}	V_{DS} = −5 V, V_{GS} = 0, f = 1 MHz	—	22	—	pF
Reverse transfer capacitance		C_{rss}	V_{DS} = −5 V, V_{GS} = 0, f = 1 MHz	—	5	—	pF
Output capacitance		C_{oss}	V_{DS} = −5 V, V_{GS} = 0, f = 1 MHz	—	14	—	pF
Switching time	Turn-on time	t_{on}	V_{DD} = −5 V, I_D = −100 mA, V_{GS} = 0 to −4 V	—	85	—	ns
	Turn-off time	t_{off}		—	85	—	ns

Note 2: Pulse test

Switching Time Test Circuit

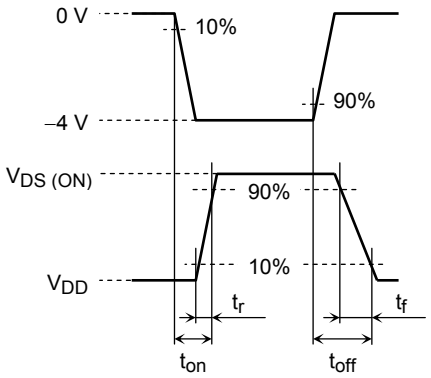
(a) Test circuit



V_{DD} = −5 V
D.U.≤ 1%
Input: t_r, t_f < 5 ns
(Z_{out} = 50 Ω)
Common Source
Ta = 25°C

(b) V_{IN}

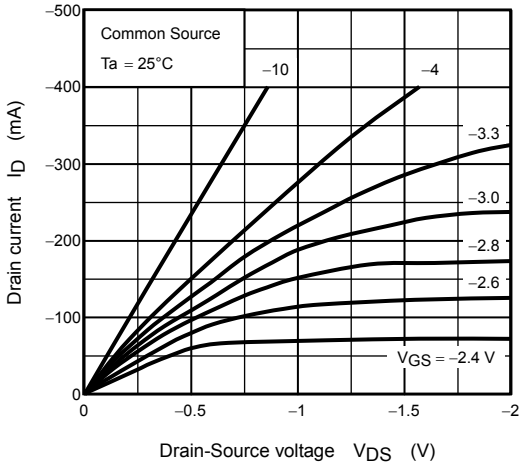
(c) V_{OUT}



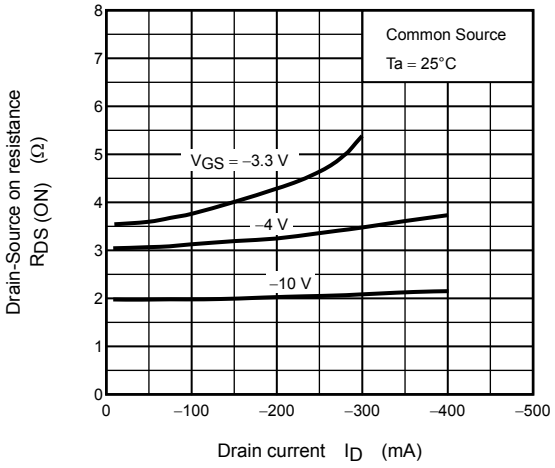
Precaution

V_{th} can be expressed as voltage between gate and source when low operating current value is I_D = −100 μA for this product. For normal switching operation, $V_{GS\ (on)}$ requires higher voltage than V_{th} and $V_{GS\ (off)}$ requires lower voltage than V_{th}.
(relationship can be established as follows: $V_{GS\ (off)} < V_{th} < V_{GS\ (on)}$)
Please take this into consideration for using the device.

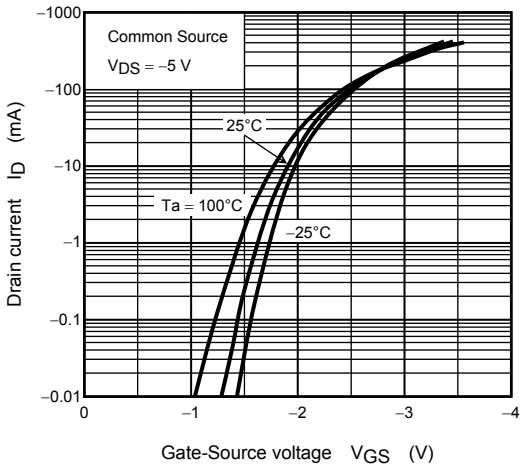
$I_D - V_{DS}$



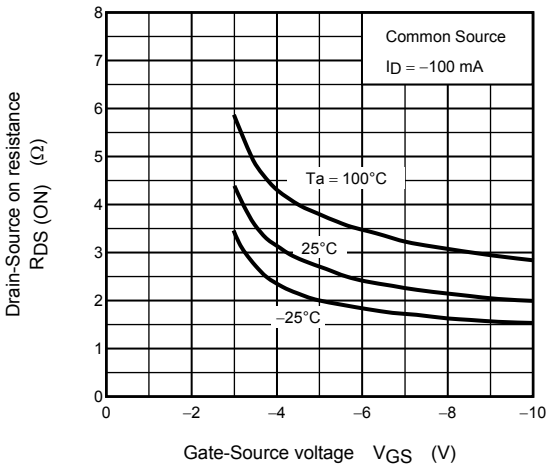
$R_{DS\ (ON)} - I_D$



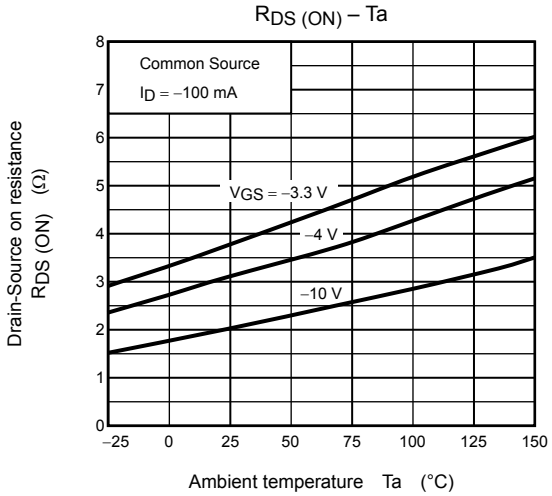
$I_D - V_{GS}$



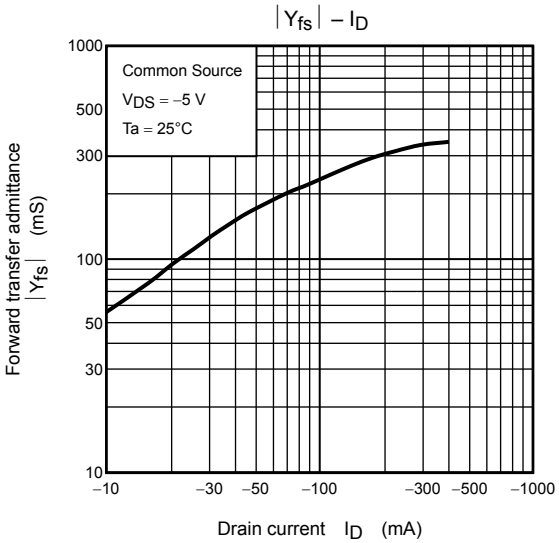
$R_{DS\ (ON)} - V_{GS}$



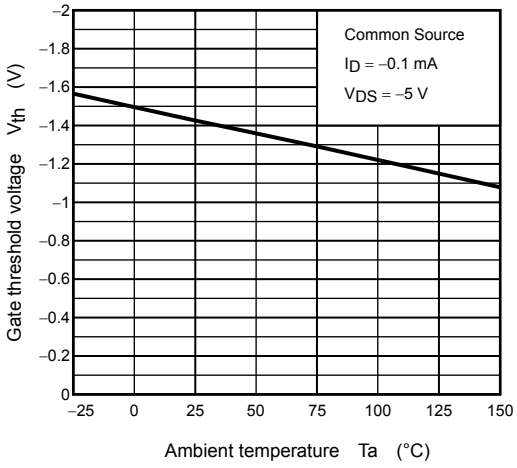
$R_{DS\ (ON)} - Ta$



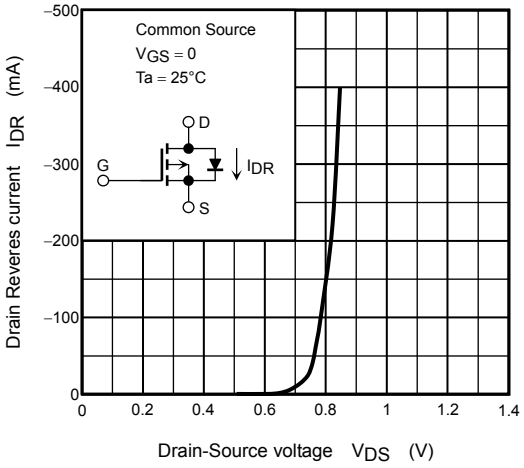
$|Y_{fs}| - I_D$



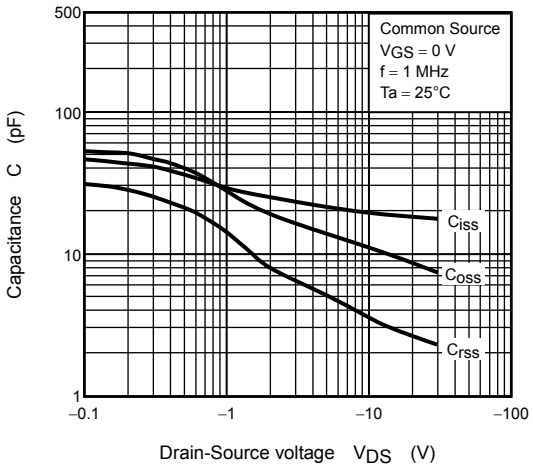
V_{th} – Ta



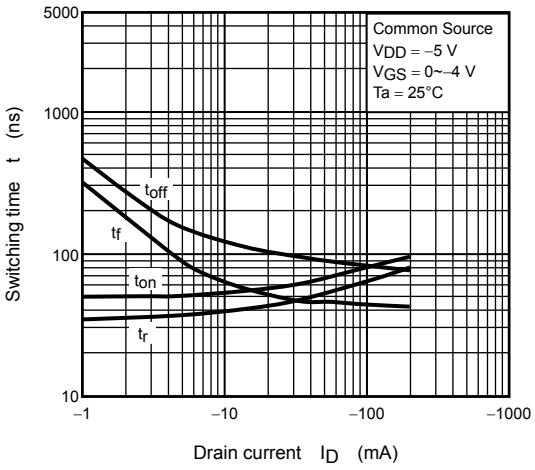
I_{DR} – V_{DS}



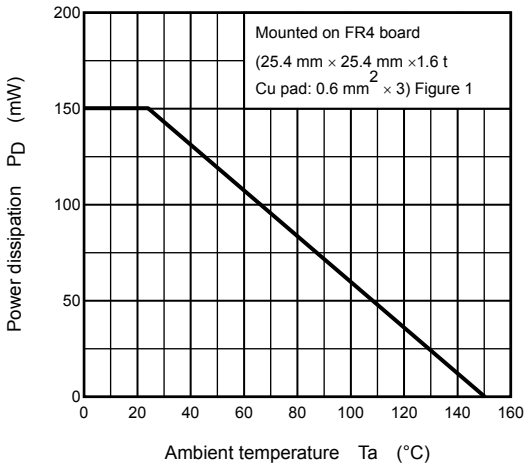
C – V_{DS}



t – I_D



P_D – Ta



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