

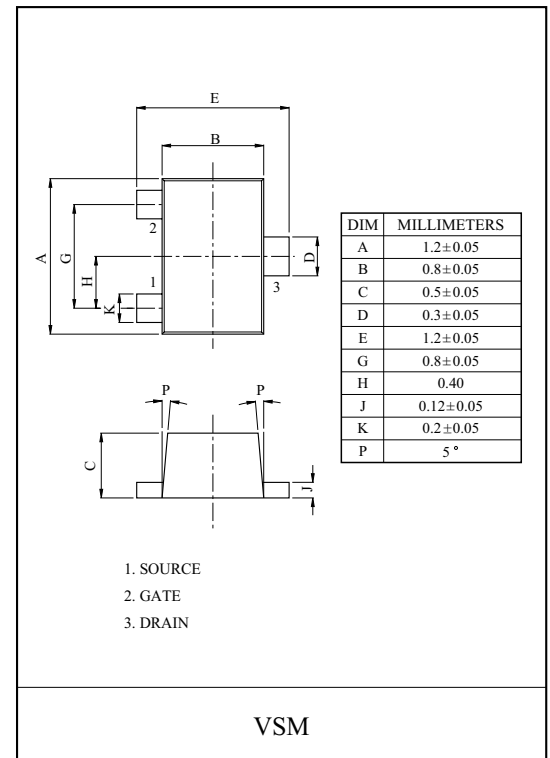
ULTRA-HIGH SPEED SWITCHING APPLICATIONS  
ANALOG SWITCH APPLICATIONS

### FEATURES

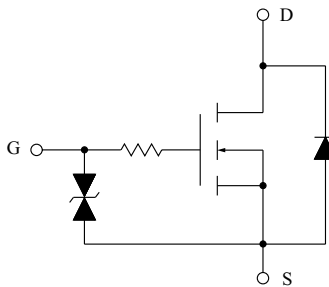
- 2.5 Gate Drive.
- Low Threshold Voltage :  $V_{th}=0.5 \sim 1.5V$ .
- High Speed.
- Small Package.
- Enhancement-Mode.

### MAXIMUM RATING (Ta=25 °C)

| CHARACTERISTIC            | SYMBOL    | RATING    | UNIT |
|---------------------------|-----------|-----------|------|
| Drain-Source Voltage      | $V_{DS}$  | 30        | V    |
| Gate-Source Voltage       | $V_{GSS}$ | $\pm 20$  | V    |
| DC Drain Current          | $I_D$     | 50        | mA   |
| Drain Power Dissipation   | $P_D$     | 100       | mW   |
| Channel Temperature       | $T_{ch}$  | 150       | °C   |
| Storage Temperature Range | $T_{stg}$ | -55 ~ 150 | °C   |

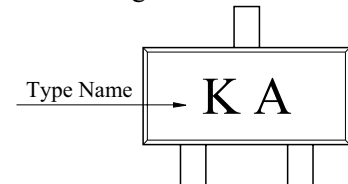


### EQUIVALENT CIRCUIT



THIS TRANSISTOR IS ELECTROSTATIC SENSITIVE DEVICE.  
PLEASE HANDLE WITH CAUTION.

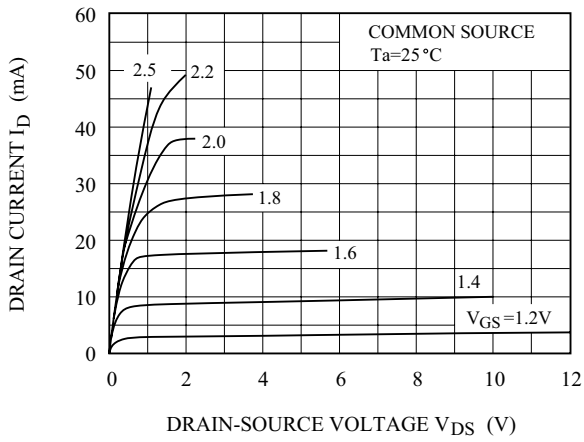
### Marking



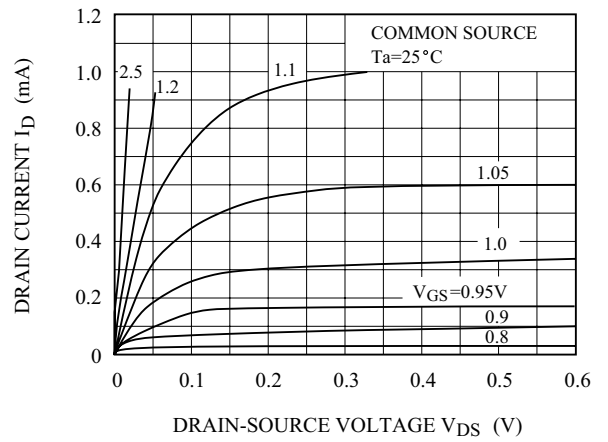
### ELECTRICAL CHARACTERISTICS (Ta=25 °C)

| CHARACTERISTIC                 |               | SYMBOL        | TEST CONDITION                                  | MIN. | TYP. | MAX.    | UNIT     |
|--------------------------------|---------------|---------------|-------------------------------------------------|------|------|---------|----------|
| Gate Leakage Current           |               | $I_{GSS}$     | $V_{GS} = \pm 16V, V_{DS} = 0V$                 | -    | -    | $\pm 1$ | $\mu A$  |
| Drain-Source Breakdown Voltage |               | $V_{(BR)DSS}$ | $I_D = 100 \mu A, V_{GS} = 0V$                  | 30   | -    | -       | V        |
| Drain Cut-off Current          |               | $I_{DSS}$     | $V_{DS} = 30V, V_{GS} = 0V$                     | -    | -    | 1       | $\mu A$  |
| 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     |               | $R_{DS(ON)}$  | $I_D = 10mA, V_{GS} = 2.5V$                     | -    | 15   | 40      | $\Omega$ |
| Input Capacitance              |               | $C_{iss}$     | $V_{DS} = 3V, V_{GS} = 0V, f = 1MHz$            | -    | 5.5  | -       | pF       |
| Reverse Transfer Capacitance   |               | $C_{rss}$     | $V_{DS} = 3V, V_{GS} = 0V, f = 1MHz$            | -    | 1.6  | -       | pF       |
| Output Capacitance             |               | $C_{oss}$     | $V_{DS} = 3V, V_{GS} = 0V, f = 1MHz$            | -    | 6.5  | -       | pF       |
| Switching Time                 | Turn-on Time  | $t_{on}$      | $V_{DD} = 3V, I_D = 10mA, V_{GS} = 0 \sim 2.5V$ | -    | 140  | -       | nS       |
|                                | Turn-off Time | $t_{off}$     |                                                 | -    | 140  | -       | nS       |

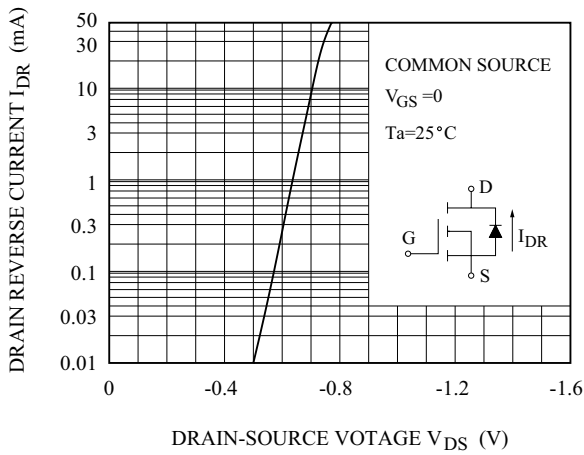
$I_D - V_{DS}$



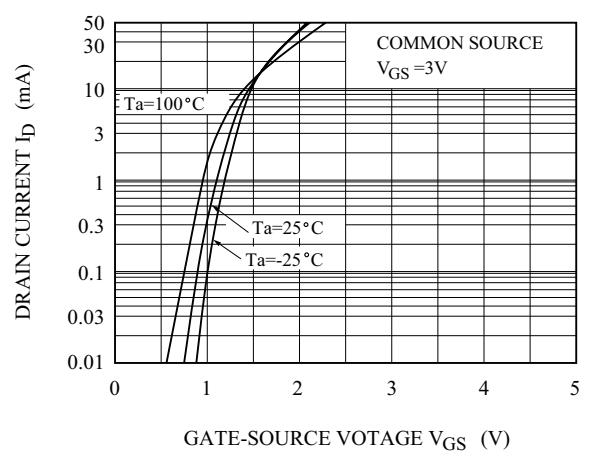
$I_D - V_{DS}$   
(LOW VOLTAGE REGION)



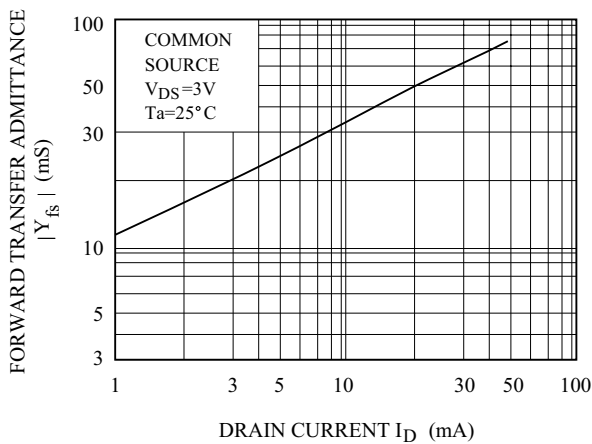
$I_{DR} - V_{DS}$



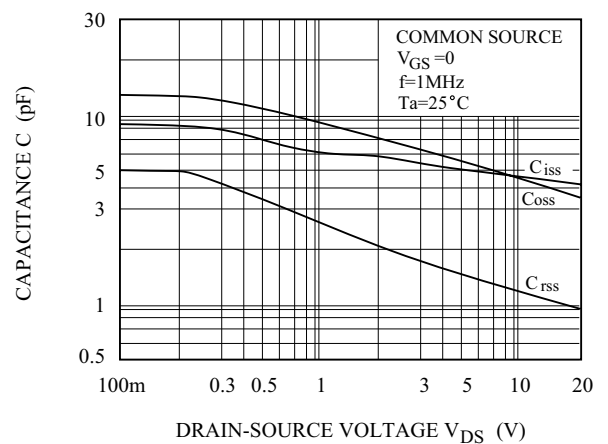
$I_D - V_{GS}$

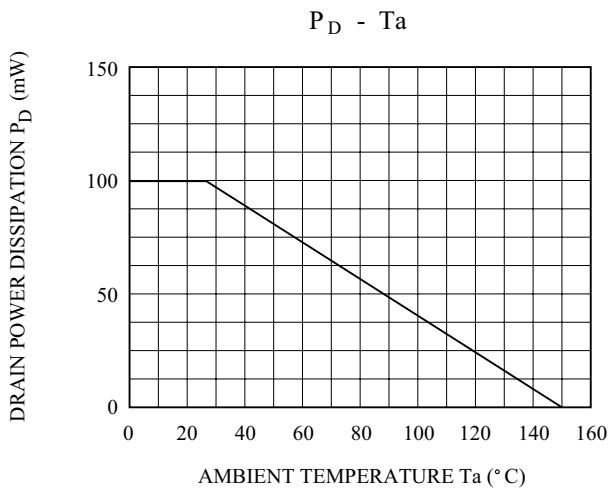
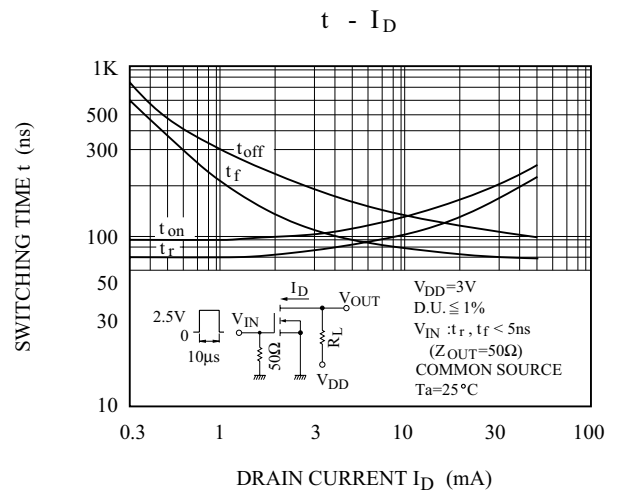
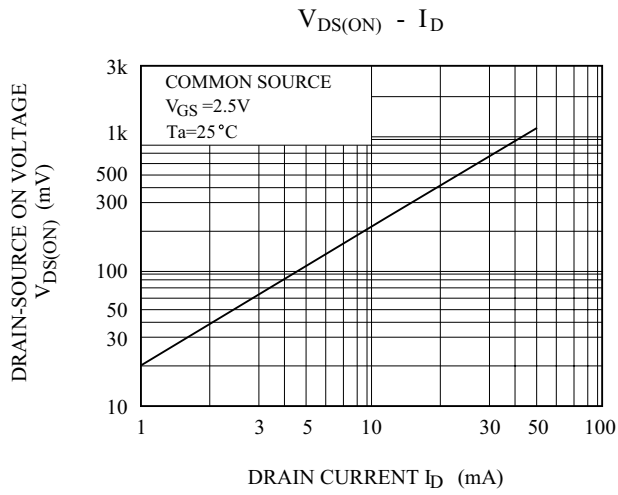


$|Y_{fs}| - I_D$



$C - V_{DS}$





## SWITCHING TIME TEST CIRCUIT

