



SANYO Semiconductors

## DATA SHEET

N-Channel Silicon MOSFET

# 2SK4067 — General-Purpose Switching Device Applications

## Features

- Motor drive applications.
- 4.5V drive.

## Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter                   | Symbol           | Conditions             | Ratings     | Unit |
|-----------------------------|------------------|------------------------|-------------|------|
| Drain-to-Source Voltage     | V <sub>DSS</sub> |                        | 30          | V    |
| Gate-to-Source Voltage      | V <sub>GSS</sub> |                        | ±20         | V    |
| Drain Current (DC)          | I <sub>D</sub>   |                        | 8           | A    |
| Drain Current (Pulse)       | I <sub>DP</sub>  | PW≤10μs, duty cycle≤1% | 32          | A    |
| Allowable Power Dissipation | P <sub>D</sub>   |                        | 1           | W    |
|                             |                  | T <sub>c</sub> =25°C   | 10          | W    |
| Channel Temperature         | T <sub>ch</sub>  |                        | 150         | °C   |
| Storage Temperature         | T <sub>stg</sub> |                        | -55 to +150 | °C   |

Electrical Characteristics at Ta=25°C

| Parameter                                  | Symbol               | Conditions                                | Ratings |     |     | Unit |
|--------------------------------------------|----------------------|-------------------------------------------|---------|-----|-----|------|
|                                            |                      |                                           | min     | typ | max |      |
| Drain-to-Source Breakdown Voltage          | V(BR) <sub>DSS</sub> | I <sub>D</sub> =1mA, V <sub>GS</sub> =0V  | 30      |     |     | V    |
| Zero-Gate Voltage Drain Current            | I <sub>DSS</sub>     | V <sub>D</sub> =30V, V <sub>GS</sub> =0V  |         |     | 1   | μA   |
| Gate-to-Source Leakage Current             | I <sub>GSS</sub>     | V <sub>GS</sub> =±16V, V <sub>D</sub> =0V |         |     | ±10 | μA   |
| Cutoff Voltage                             | V <sub>GS(off)</sub> | V <sub>D</sub> =10V, I <sub>D</sub> =1mA  | 1.5     |     | 2.5 | V    |
| Forward Transfer Admittance                | y <sub>fs</sub>      | V <sub>D</sub> =10V, I <sub>D</sub> =4A   | 2.6     | 4.4 |     | S    |
| Static Drain-to-Source On-State Resistance | R <sub>DS(on)1</sub> | I <sub>D</sub> =8A, V <sub>GS</sub> =10V  |         | 85  | 115 | mΩ   |
|                                            | R <sub>DS(on)2</sub> | I <sub>D</sub> =4A, V <sub>GS</sub> =4.5V |         | 155 | 220 | mΩ   |
| Input Capacitance                          | C <sub>iss</sub>     | V <sub>D</sub> =10V, f=1MHz               |         | 260 |     | pF   |
| Output Capacitance                         | C <sub>oss</sub>     | V <sub>D</sub> =10V, f=1MHz               |         | 65  |     | pF   |
| Reverse Transfer Capacitance               | C <sub>rss</sub>     | V <sub>D</sub> =10V, f=1MHz               |         | 40  |     | pF   |

Marking : K4067

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## 2SK4067

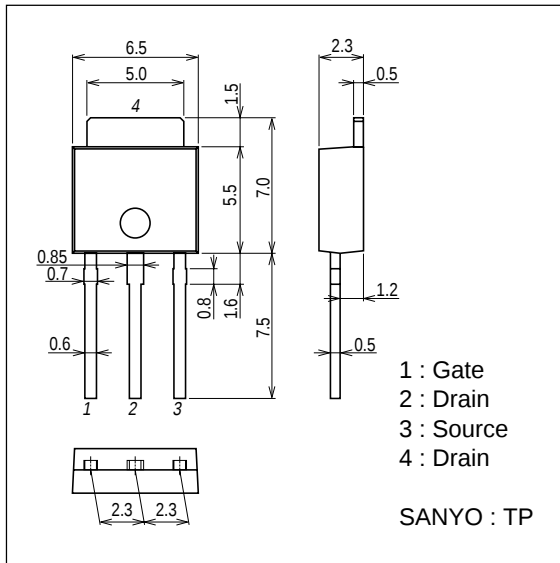
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| Parameter                     | Symbol       | Conditions                       | Ratings |      |     | Unit |
|-------------------------------|--------------|----------------------------------|---------|------|-----|------|
|                               |              |                                  | min     | typ  | max |      |
| Turn-ON Delay Time            | $t_{d(on)}$  | See specified Test Circuit.      |         | 9    |     | ns   |
| Rise Time                     | $t_r$        | See specified Test Circuit.      |         | 8    |     | ns   |
| Turn-OFF Delay Time           | $t_{d(off)}$ | See specified Test Circuit.      |         | 19   |     | ns   |
| Fall Time                     | $t_f$        | See specified Test Circuit.      |         | 8    |     | ns   |
| Total Gate Charge             | $Q_g$        | $V_{DS}=10V, V_{GS}=10V, I_D=8A$ |         | 6    |     | nC   |
| Gate-to-Source Charge         | $Q_{gs}$     | $V_{DS}=10V, V_{GS}=10V, I_D=8A$ |         | 1.2  |     | nC   |
| Gate-to-Drain "Miller" Charge | $Q_{gd}$     | $V_{DS}=10V, V_{GS}=10V, I_D=8A$ |         | 1.0  |     | nC   |
| Diode Forward Voltage         | $V_{SD}$     | $I_S=8A, V_{GS}=0V$              |         | 1.05 | 1.2 | V    |

### Package Dimensions

unit : mm (typ)

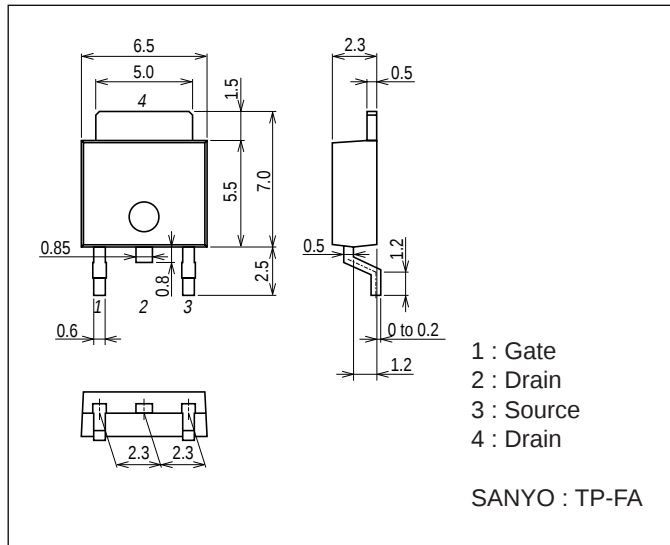
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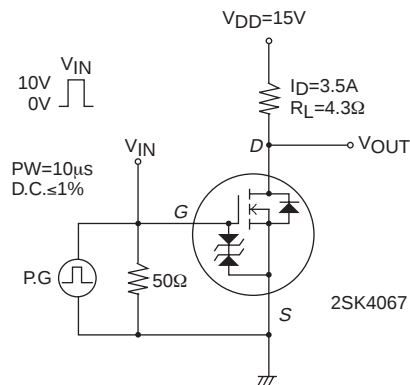
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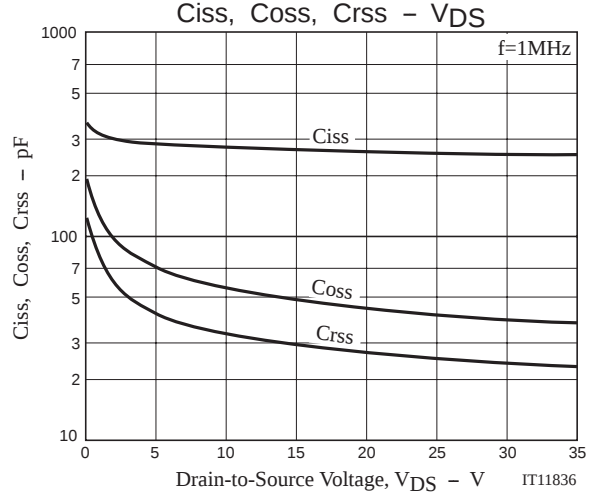
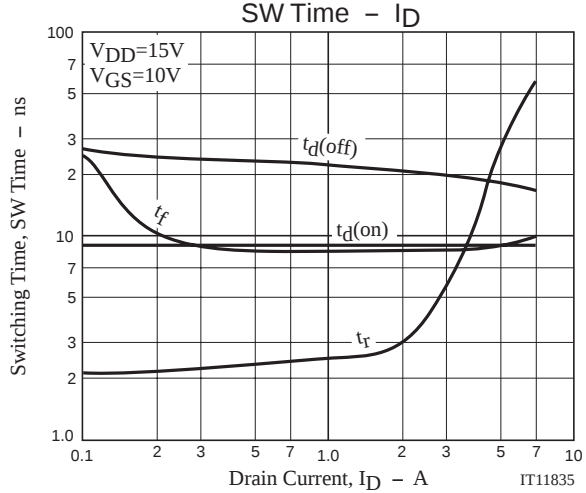
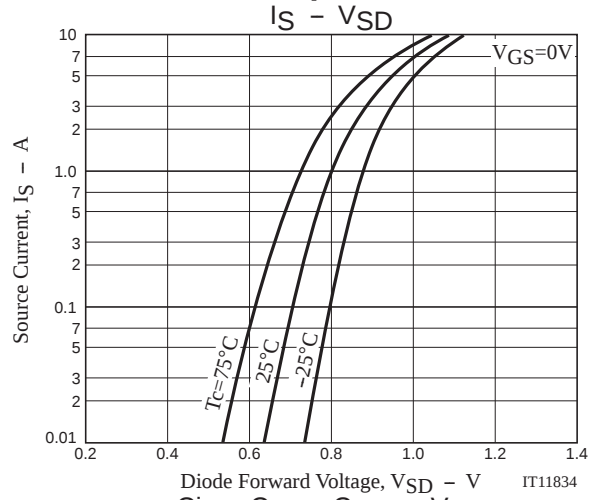
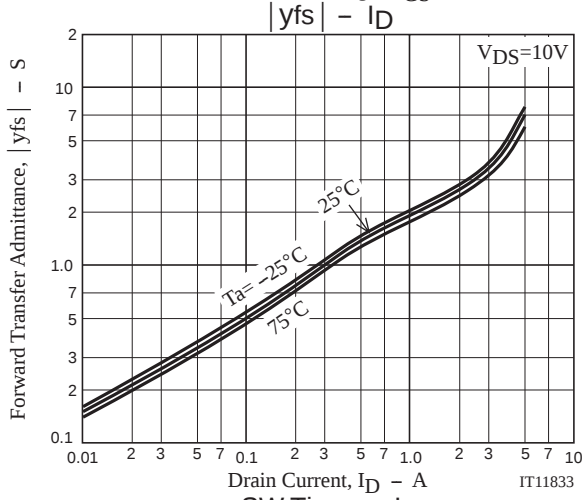
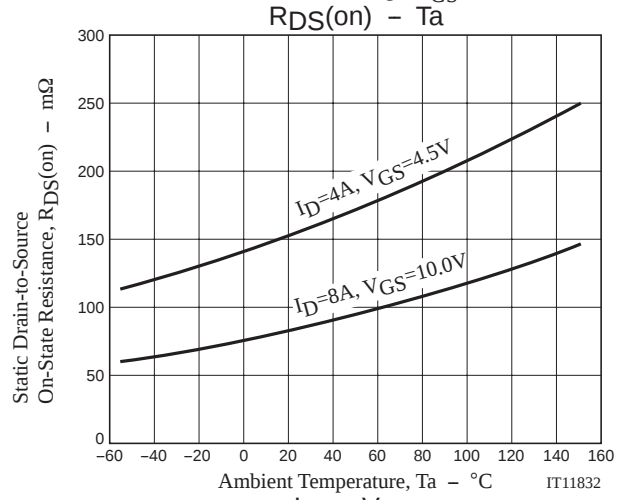
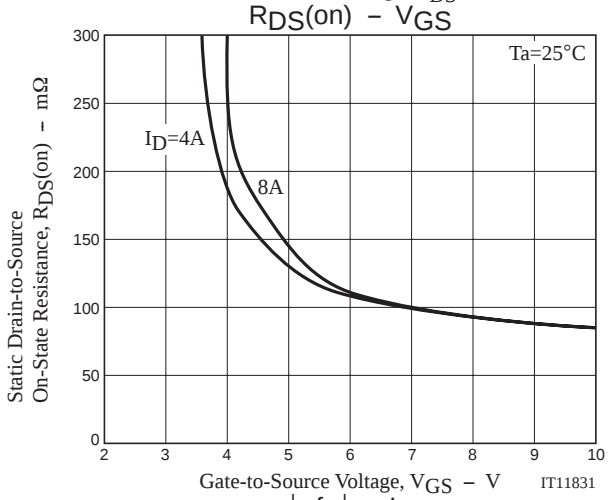
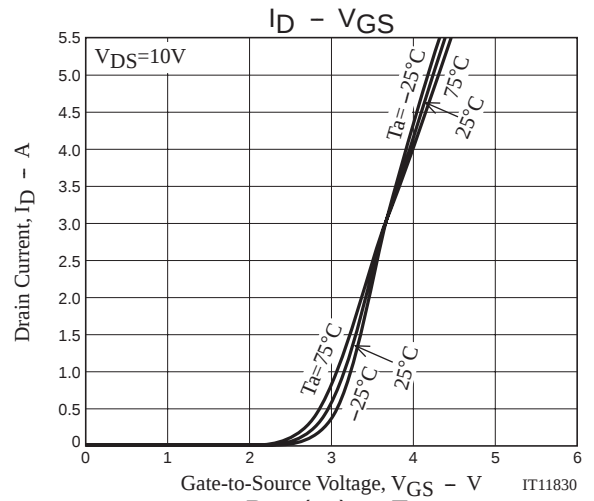
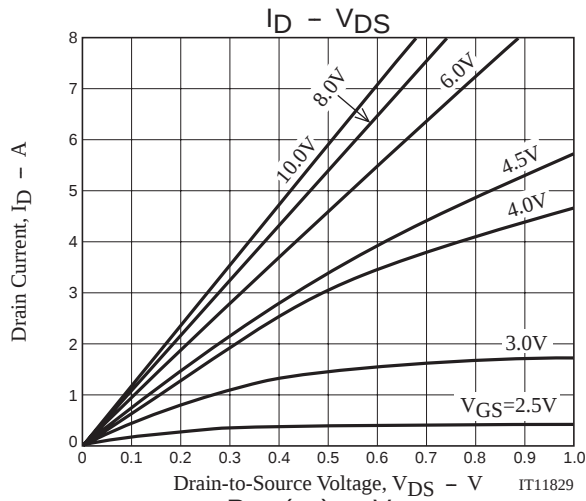
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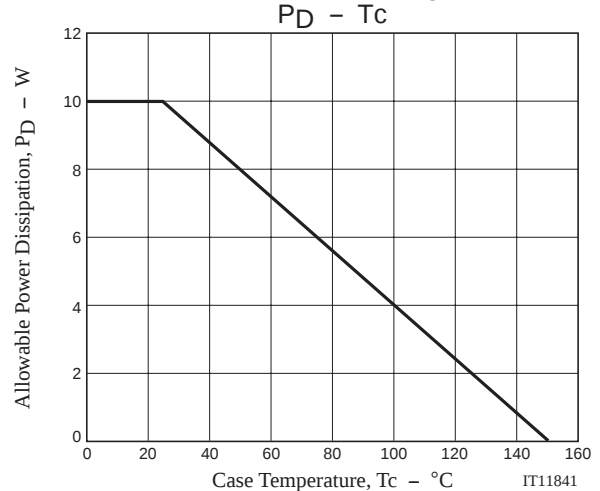
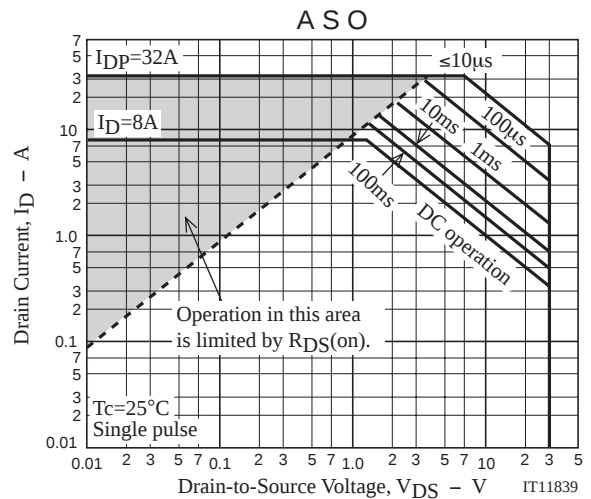
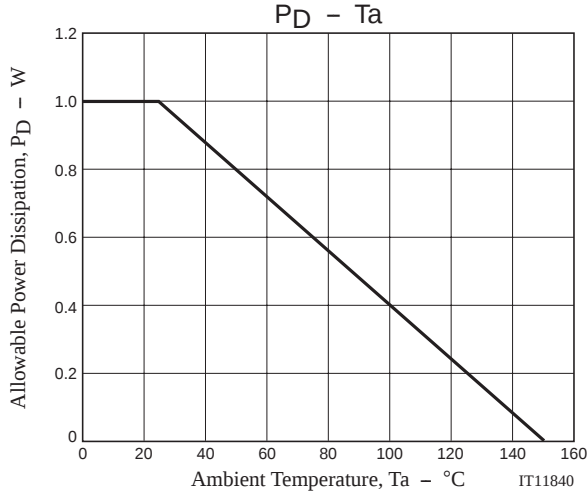
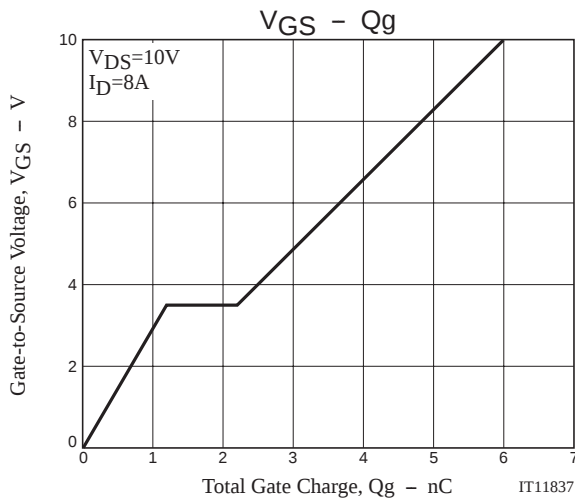
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### Switching Time Test Circuit







Note on usage : Since the 2SK4067 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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