



SANYO Semiconductors

## DATA SHEET

# 2SK2617ALS — N-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- Low Qg.
- Ultrahigh-speed switching.

### Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter                          | Symbol   | Conditions                                         | Ratings     | Unit |
|------------------------------------|----------|----------------------------------------------------|-------------|------|
| Drain-to-Source Voltage            | VDSS     |                                                    | 500         | V    |
| Gate-to-Source Voltage             | VGSS     |                                                    | ±30         | V    |
| Drain Current (DC)                 | IDC*1    | Limited only by maximum temperature                | 5           | A    |
|                                    | IDpack*2 | SANYO's ideal heat dissipation condition           | 4.5         | A    |
| Drain Current (Pulse)              | IDP      | PW≤10μs, duty cycle≤1%                             | 16          | A    |
| Allowable Power Dissipation        | PD       |                                                    | 2.0         | W    |
|                                    |          | Tc=25°C (SANYO's ideal heat dissipation condition) | 25          | W    |
| Channel Temperature                | Tch      |                                                    | 150         | °C   |
| Storage Temperature                | Tstg     |                                                    | -55 to +150 | °C   |
| Avalanche Energy (Single Pulse) *3 | EAS      |                                                    | 88          | mJ   |
| Avalanche Current *4               | IAV      |                                                    | 4           | A    |

\*1 Shows chip capability

\*2 Package limited

\*3 VDD=50V, L=10mH, IAV=4A

\*4 L≤10mH, single pulse

Marking : K2617

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SANYO Semiconductor Co., Ltd.

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

## 2SK2617ALS

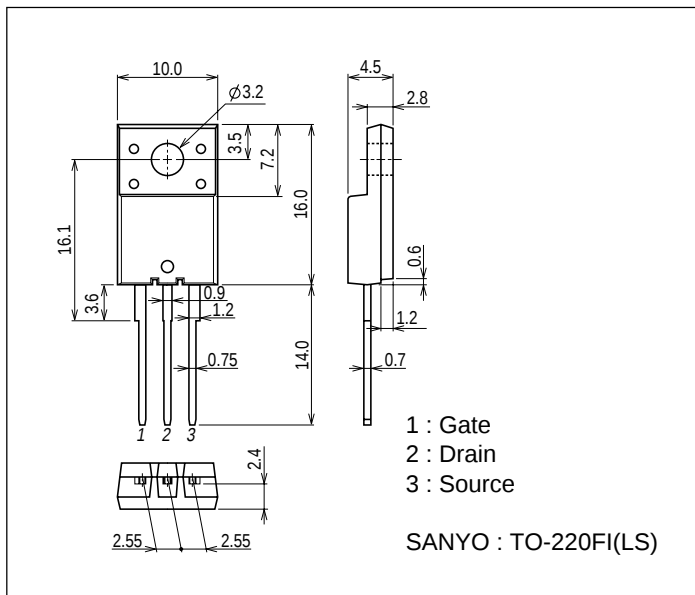
### Electrical Characteristics at Ta=25°C

| Parameter                                  | Symbol        | Conditions                        | Ratings |      |           | Unit     |
|--------------------------------------------|---------------|-----------------------------------|---------|------|-----------|----------|
|                                            |               |                                   | min     | typ  | max       |          |
| Drain-to-Source Breakdown Voltage          | $V_{(BR)DSS}$ | $I_D=1mA, V_{GS}=0V$              | 500     |      |           | V        |
| Zero-Gate Voltage Drain Current            | $I_{DSS}$     | $V_{DS}=500V, V_{GS}=0V$          |         |      | 1.0       | mA       |
| Gate-to-Source Leakage Current             | $I_{GSS}$     | $V_{GS}=\pm 30V, V_{DS}=0V$       |         |      | $\pm 100$ | nA       |
| Cutoff Voltage                             | $V_{GS(off)}$ | $V_{DS}=10V, I_D=1mA$             | 3.5     |      | 5.5       | V        |
| Forward Transfer Admittance                | $ y_{fs} $    | $V_{DS}=10V, I_D=2A$              | 1.1     | 2.2  |           | S        |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)}$  | $I_D=2A, V_{GS}=15V$              |         | 1.2  | 1.6       | $\Omega$ |
| Input Capacitance                          | $C_{iss}$     | $V_{DS}=20V, f=1MHz$              |         | 550  |           | pF       |
| Output Capacitance                         | $C_{oss}$     | $V_{DS}=20V, f=1MHz$              |         | 190  |           | pF       |
| Reverse Transfer Capacitance               | $C_{rss}$     | $V_{DS}=20V, f=1MHz$              |         | 95   |           | pF       |
| Total Gate Charge                          | $Q_g$         | $V_{DS}=200V, I_D=4A, V_{GS}=10V$ |         | 15   |           | nC       |
| Turn-ON Delay Time                         | $t_d(on)$     | See specified Test Circuit.       |         | 15   |           | ns       |
| Rise Time                                  | $t_r$         | See specified Test Circuit.       |         | 15   |           | ns       |
| Turn-OFF Delay Time                        | $t_d(off)$    | See specified Test Circuit.       |         | 45   |           | ns       |
| Fall Time                                  | $t_f$         | See specified Test Circuit.       |         | 25   |           | ns       |
| Diode Forward Voltage                      | $V_{SD}$      | $I_S=4A, V_{GS}=0V$               |         | 0.95 | 1.2       | V        |

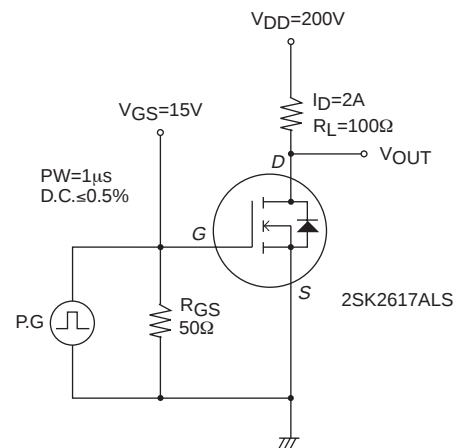
### Package Dimensions

unit : mm (typ)

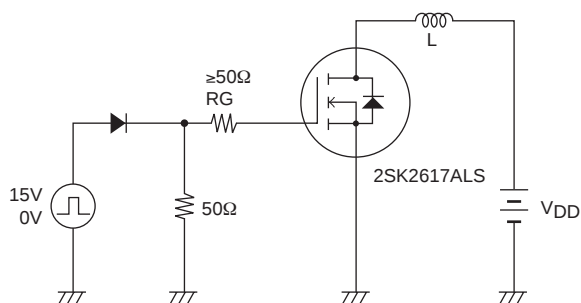
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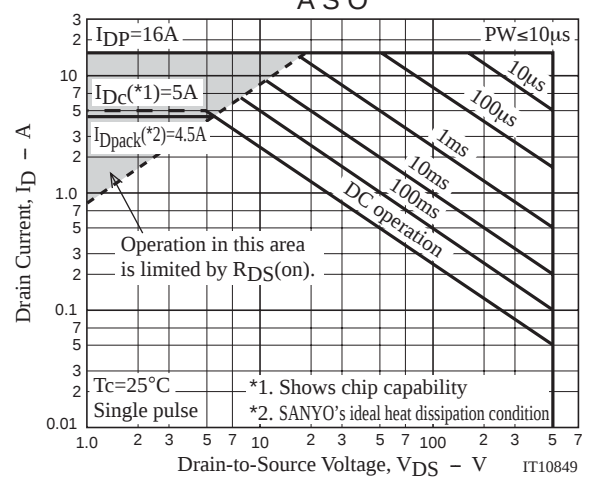
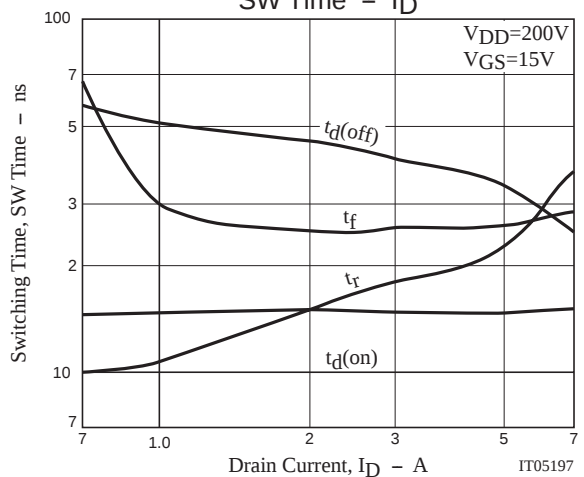
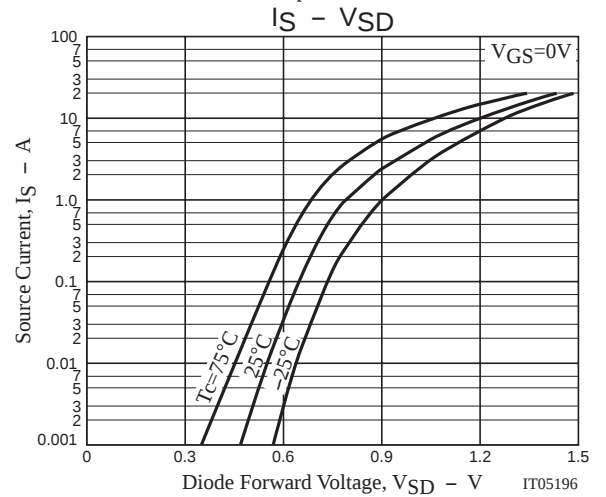
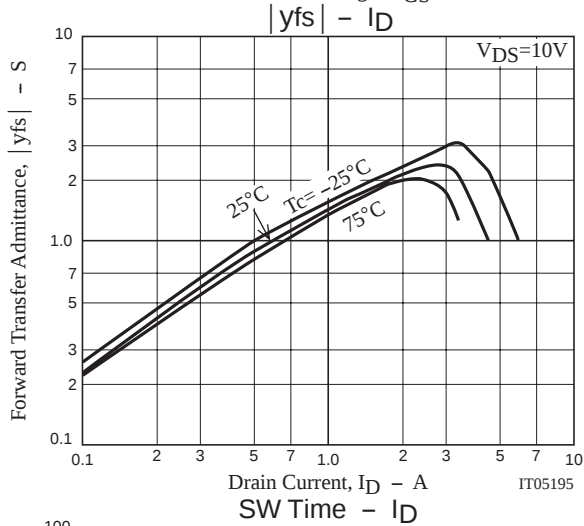
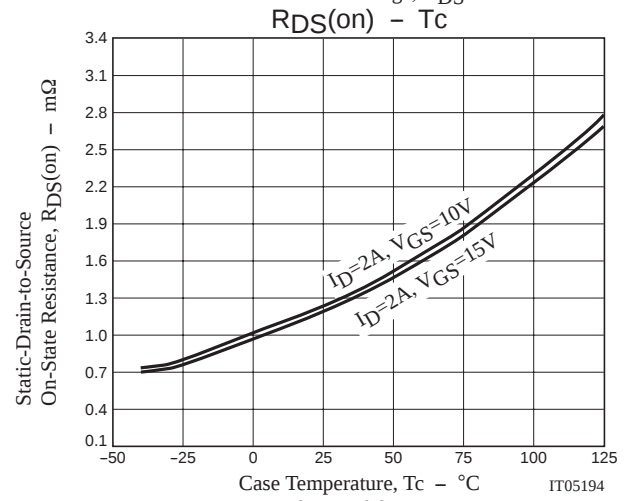
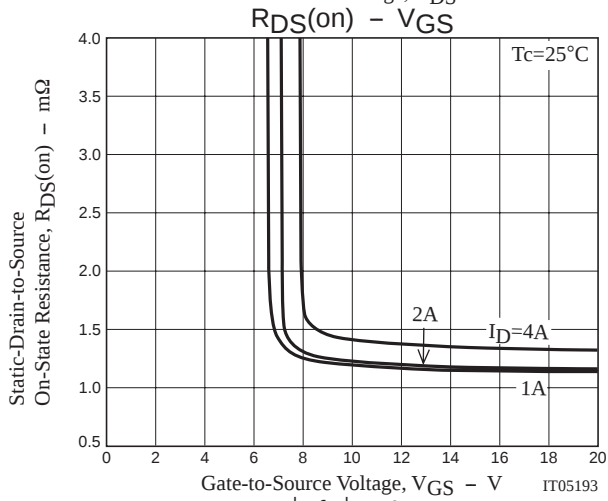
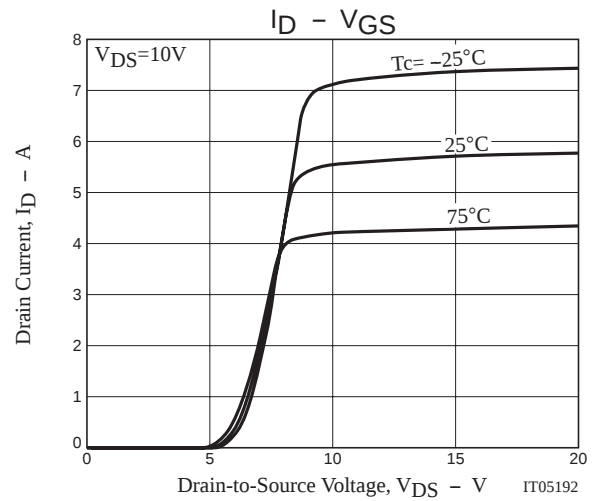
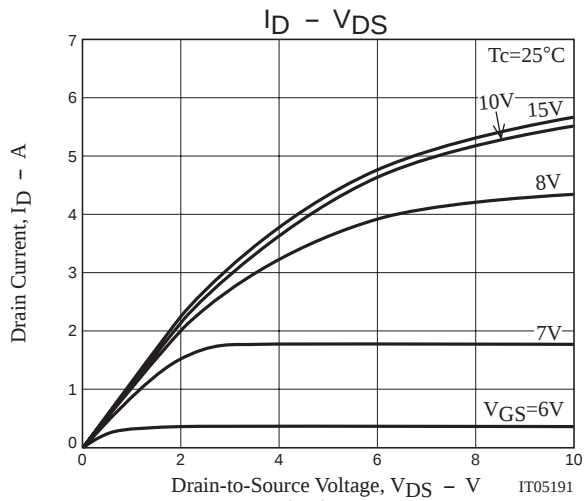
### Switching Time Test Circuit

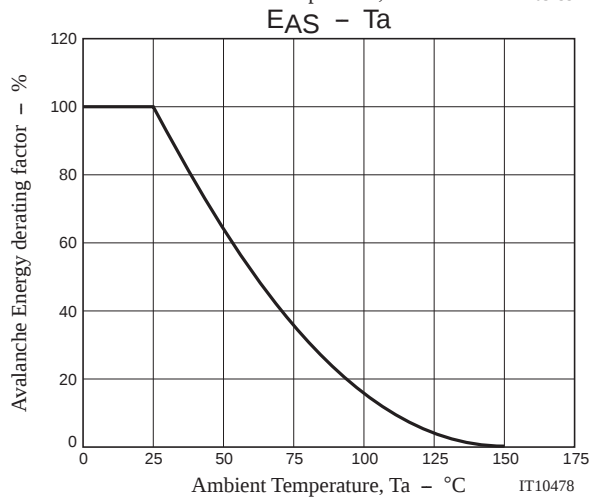
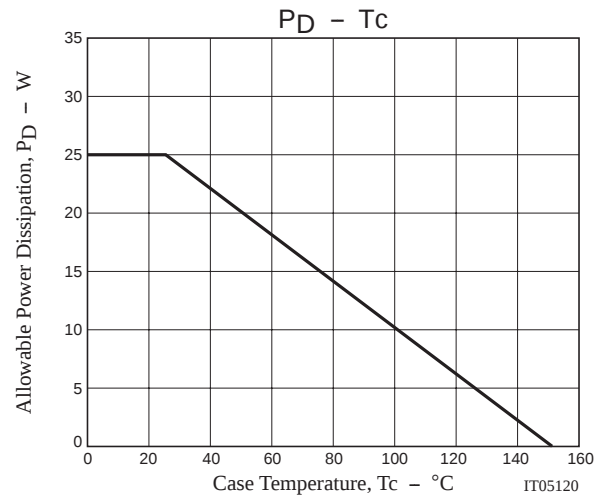
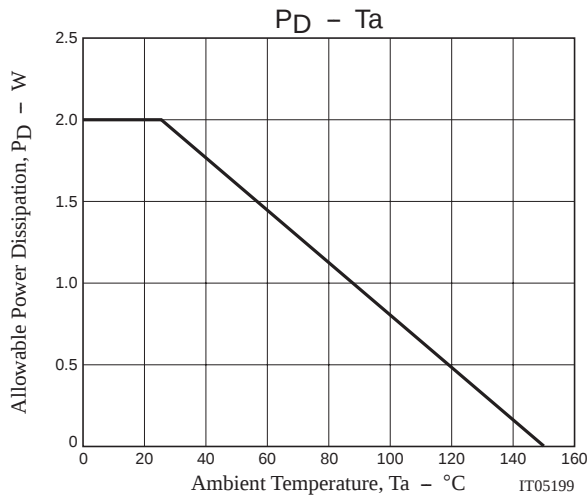


### Avalanche Resistance Test Circuit



## 2SK2617ALS





Note on usage : Since the 2SK2617ALS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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