Ordering number : ENA0359A

SANYO Semiconductors

DATA SHEET

N-Channel Silicon MOSFET

# 2SK2625ALS — 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 | $V_{DSS}$ | | 600 | V |
| Gate-to-Source Voltage | $V_{GSS}$ | | ±30 | V |
| Drain Current (DC) | $I_{Dc}$*1 | Limited only by maximum temperature | 5 | A |
| | $I_{Dpack}$*2 | SANYO's ideal heat dissipation condition | 4.4 | A |
| Drain Current (Pulse) | $I_{DP}$ | PW≤10μs, duty cycle≤1% | 16 | A |
| Allowable Power Dissipation | $P_D$ | | 2.0 | W |
| | | Tc=25°C (SANYO's ideal heat dissipation condition) | 30 | W |
| Channel Temperature | Tch | | 150 | °C |
| Storage Temperature | Tstg | | −55 to +150 | °C |
| Avalanche Energy (Single Pulse) *3 | $E_{AS}$ | | 87 | mJ |
| Avalanche Current *4 | $I_{AV}$ | | 4 | A |

*1 Shows chip capability

*2 Package limited

*3 $V_{DD}$=50V, L=10mH, $I_{AV}$=4A

*4 L≤10mH, single pulse

Marking : K2625

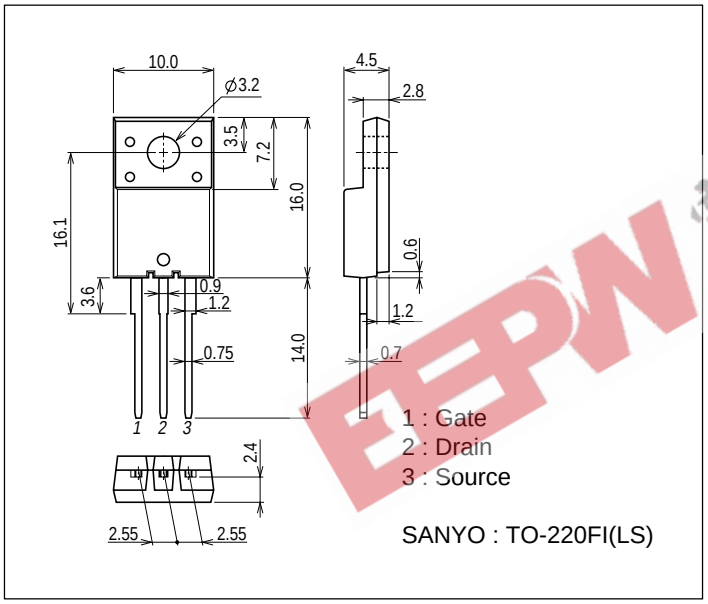
## Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D$=1mA, $V_{GS}$=0V | 600 | | | V |
| Zero-Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=600V, $V_{GS}$=0V | | | 1.0 | mA |
| Gate-to-Source Leakage Current | $I_{GSS}$ | $V_{GS}$=±30V, $V_{DS}$=0V | | | ±100 | nA |
| Cutoff Voltage | $V_{GS}$(off) | $V_{DS}$=10V, $I_D$=1mA | 3.5 | | 5.5 | V |
| Forward Transfer Admittance | \|yfs\| | $V_{DS}$=10V, $I_D$=2.5A | 1.5 | 3.0 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS}$(on) | $I_D$=2.5A, $V_{GS}$=15V | | 1.5 | 2.0 | Ω |
| Input Capacitance | Ciss | $V_{DS}$=20V, f=1MHz | | 700 | | pF |
| Output Capacitance | Coss | $V_{DS}$=20V, f=1MHz | | 220 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}$=20V, f=1MHz | | 110 | | pF |
| Total Gate Charge | Qg | $V_{DS}$=200V, $I_D$=5A, $V_{GS}$=10V | | 20 | | nC |
| Turn-ON Delay Time | $t_d$(on) | See specified Test Circuit. | | 20 | | ns |
| Rise Time | $t_r$ | See specified Test Circuit. | | 20 | | ns |
| Turn-OFF Delay Time | $t_d$(off) | See specified Test Circuit. | | 50 | | ns |
| Fall Time | $t_f$ | See specified Test Circuit. | | 25 | | ns |
| Diode Forward Voltage | $V_{SD}$ | $I_S$=5A, $V_{GS}$=0V | | 0.88 | 1.2 | V |

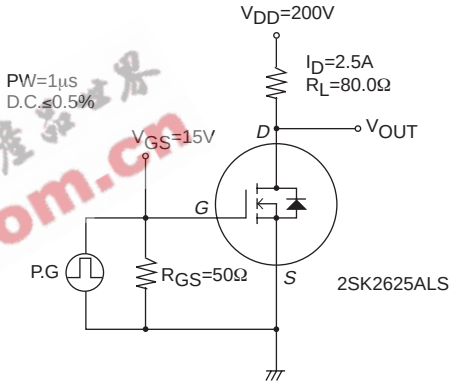
## Package Dimensions

unit : mm (typ)

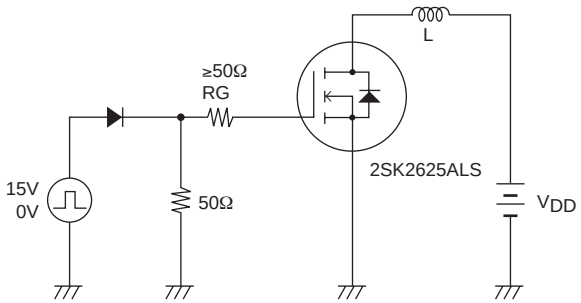
7509-002

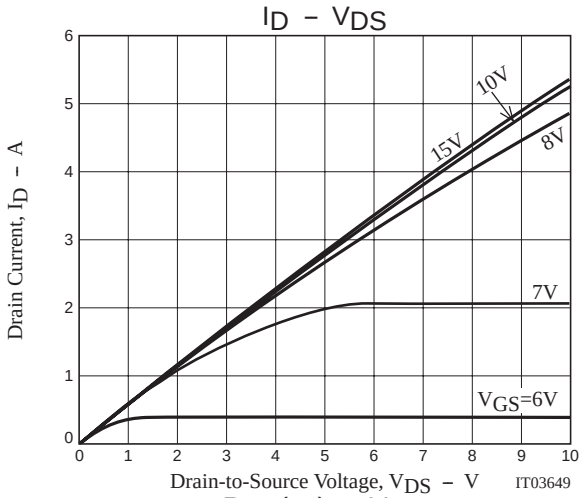


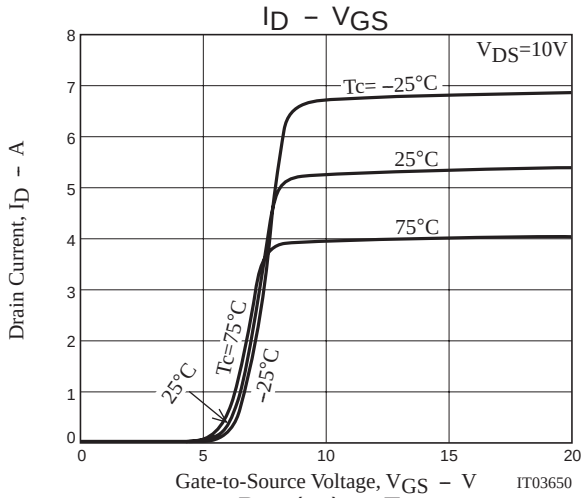

## Switching Time Test Circuit

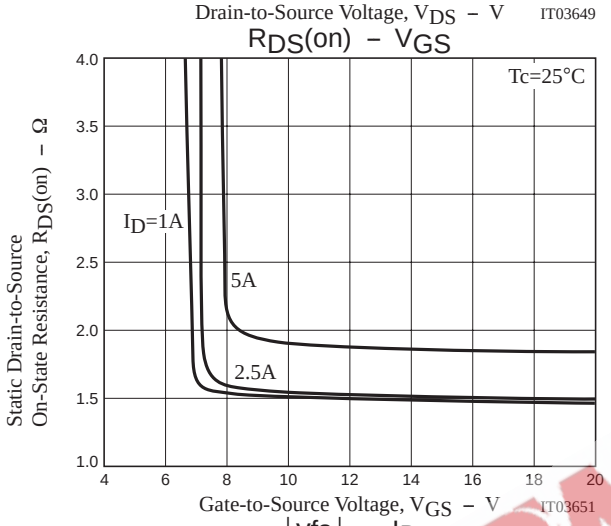


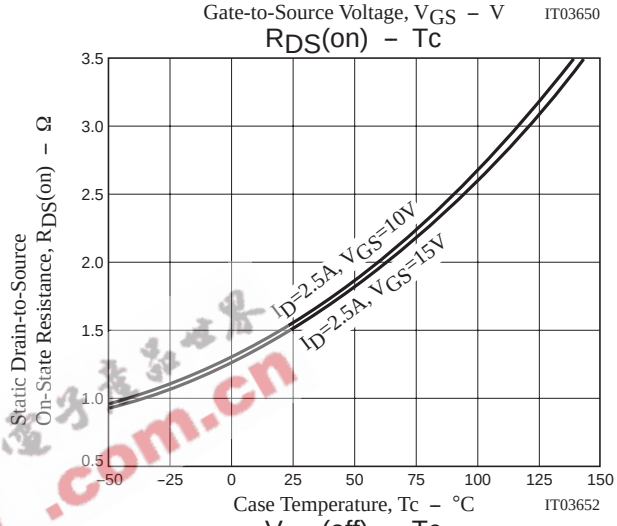

## Avalanche Resistance Test Circuit

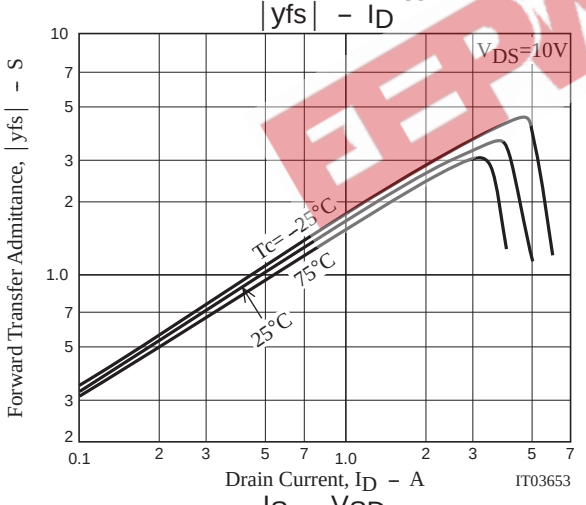


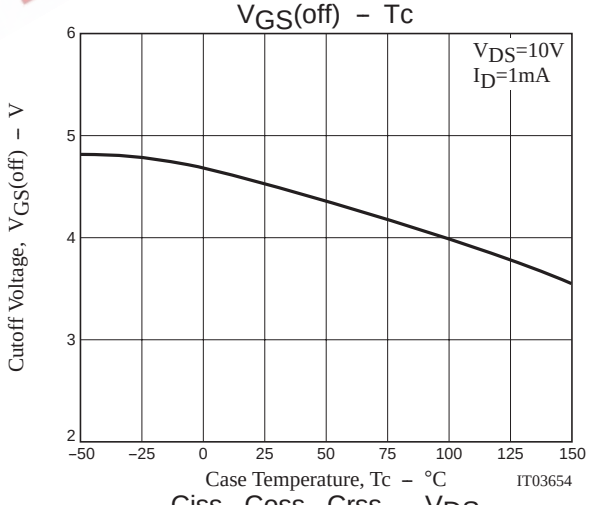

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT03649
10V
15V
8V
7V
VGS=6V

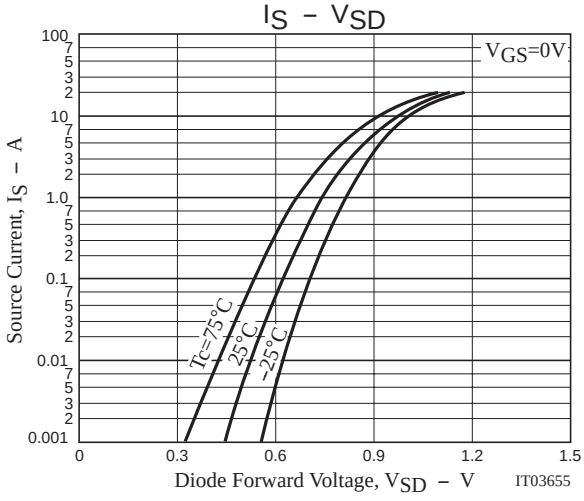

ID – VGS
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT03650
VDS=10V
Tc= –25°C
25°C
75°C
25°C
Tc=75°C
–25°C

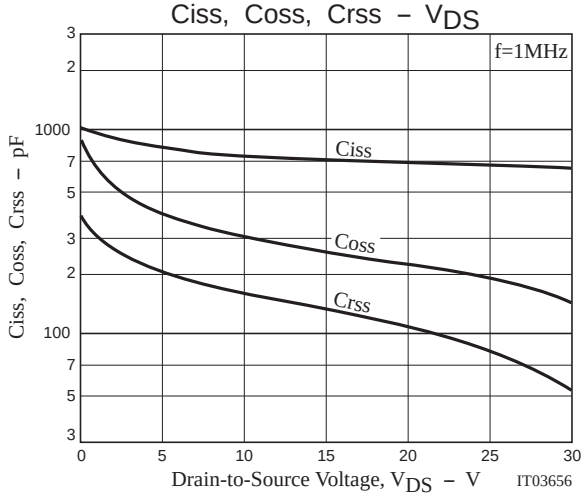

RDS(on) – VGS
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Gate-to-Source Voltage, VGS – V
IT03651
Tc=25°C
ID=1A
5A
2.5A


RDS(on) – Tc
Static Drain-to-Source On-State Resistance, RDS(on) – Ω
Case Temperature, Tc – °C
IT03652
ID=2.5A, VGS=10V
ID=2.5A, VGS=15V

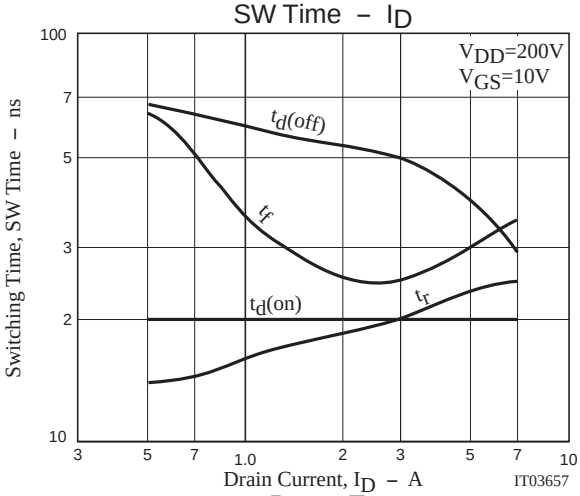

|yfs| – ID
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT03653
VDS=10V
Tc= –25°C
75°C
25°C


VGS(off) – Tc
Cutoff Voltage, VGS(off) – V
Case Temperature, Tc – °C
IT03654
VDS=10V
ID=1mA

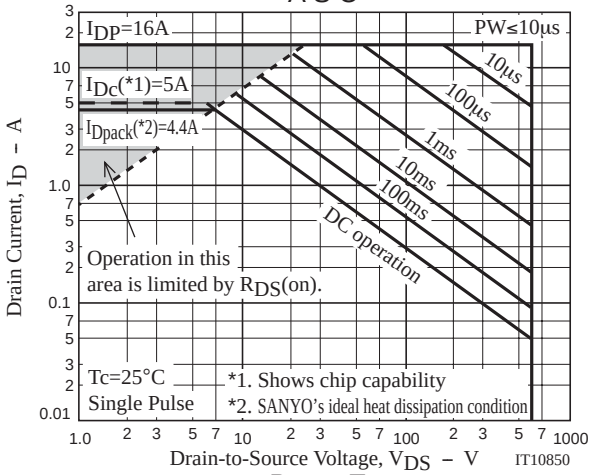

IS – VSD
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT03655
VGS=0V
Tc=75°C
25°C
–25°C


Ciss, Coss, Crss – VDS
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT03656
f=1MHz
Ciss
Coss
Crss

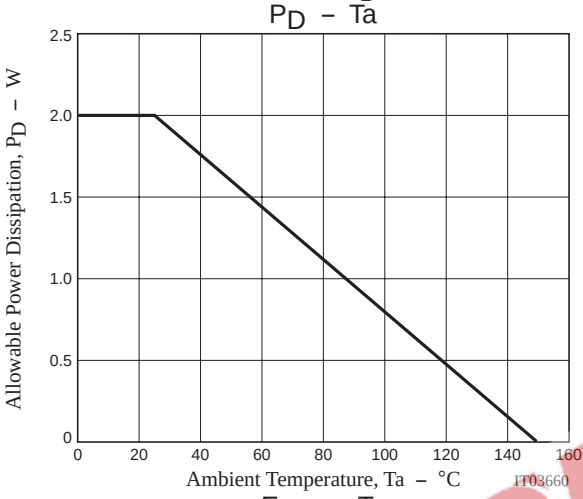
SW Time – $I_D$



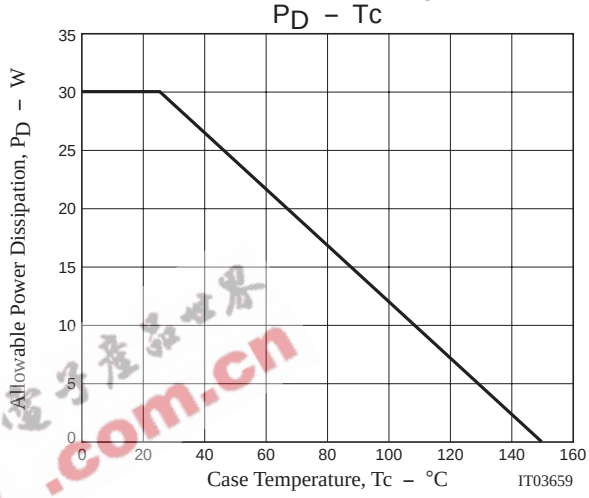

A S O



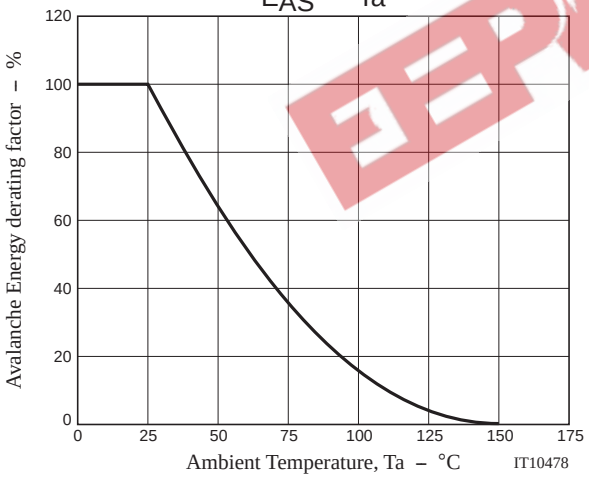

$P_D$ – Ta




$P_D$ – Tc




$E_{AS}$ – Ta



Note on usage : Since the 2SK2625ALS is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.



This catalog provides information as of February, 2007. Specifications and information herein are subject to change without notice.