Ordering number: EN3769A

SANYO

No.3769A

# 2SK1468

N-Channel MOS Silicon FET

## Very High-Speed Switching Applications

### Features

- Low ON resistance.
- Very high-speed switching.
- Low-voltage drive.

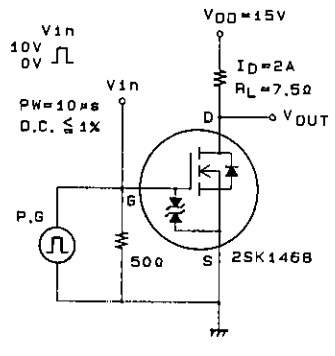
### Absolute Maximum Ratings at Ta = 25°C

| | | | | unit |
|---|---|---|---|---|
| Drain to Source Voltage | $V_{DSS}$ | | 30 | V |
| Gate to Source Voltage | $V_{GSS}$ | | ±15 | V |
| Drain Current(DC) | $I_D$ | | 4 | A |
| Drain Current(Pulse) | $I_{DP}$ | PW≦10μs, duty cycle≦1% | 16 | A |
| Allowable Power Dissipation | $P_D$ | | 1.0 | W |
| | | Tc = 25°C | 20 | W |
| Channel Temperature | Tch | | 150 | °C |
| Storage Temperature | Tstg | | −55 to +150 | °C |

### Electrical Characteristics at Ta = 25°C

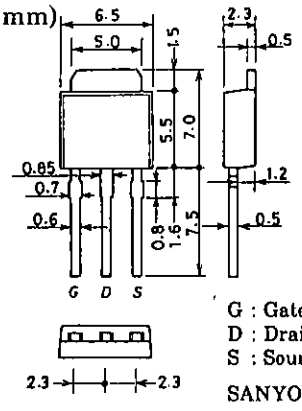
| | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| D-S Breakdown Voltage | $V_{(BR)DSS}$ | $I_D$ = 1mA, $V_{GS}$ = 0 | 30 | | | V |
| G-S Breakdown Voltage | $V_{(BR)GSS}$ | $I_G$ = ±100μA, $V_{DS}$ = 0 | ±15 | | | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$ = 30V, $V_{GS}$ = 0 | | | 100 | μA |
| Gate to Source Leakage Current | $I_{GSS}$ | $V_{GS}$ = ±12V, $V_{DS}$ = 0 | | | ±10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}$ = 10V, $I_D$ = 1mA | 1.0 | | 2.0 | V |
| Forward Transfer Admittance | $\|y_{fs}\|$ | $V_{DS}$ = 10V, $I_D$ = 2A | 2.5 | 4 | | S |
| Static Drain to Source on State Resistance | $R_{DS(on)}$ | $I_D$ = 2A, $V_{GS}$ = 10V | | 0.085 | 0.12 | Ω |
| | $R_{DS(on)}$ | $I_D$ = 2A, $V_{GS}$ = 4V | | 0.12 | 0.17 | Ω |
| Input Capacitance | Ciss | $V_{DS}$ = 10V, f = 1MHz | | 400 | | pF |
| Output Capacitance | Coss | $V_{DS}$ = 10V, f = 1MHz | | 250 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}$ = 10V, f = 1MHz | | 90 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 10 | | ns |
| Rise Time | $t_r$ | 〃 | | 20 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | 〃 | | 90 | | ns |
| Fall Time | $t_f$ | 〃 | | 60 | | ns |
| Diode Forward Voltage | $V_{SD}$ | $I_S$ = 4A, $V_{GS}$ = 0 | | 1.0 | 1.5 | V |

### Switching Time Test Circuit




### Package Dimensions 2083A

(unit : mm)

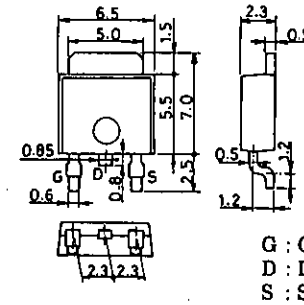



G : Gate
D : Drain
S : Source

SANYO : TP

### Package Dimensions 2092A

(unit : mm)




G : Gate
D : Drain
S : Source

SANYO : TP-FA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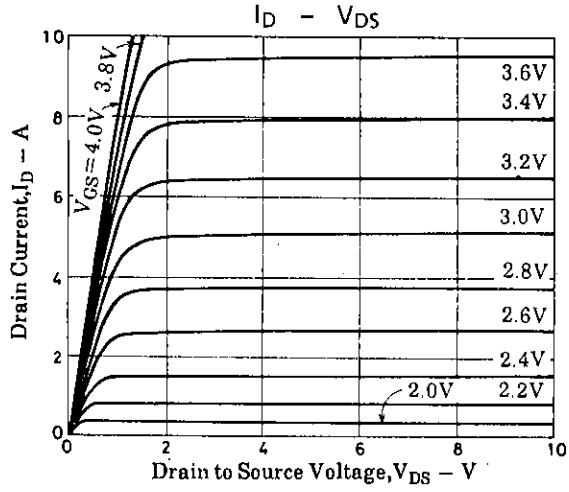
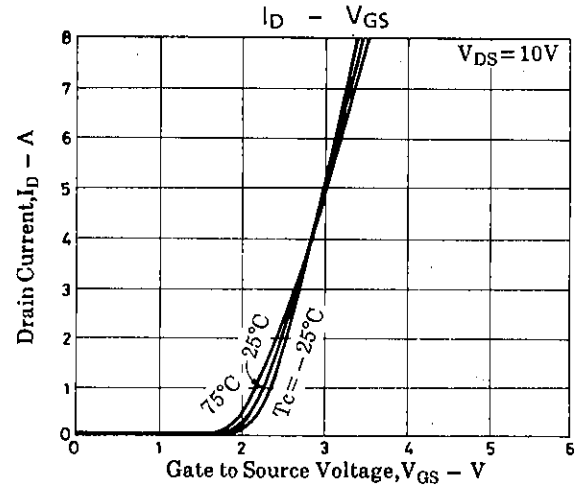
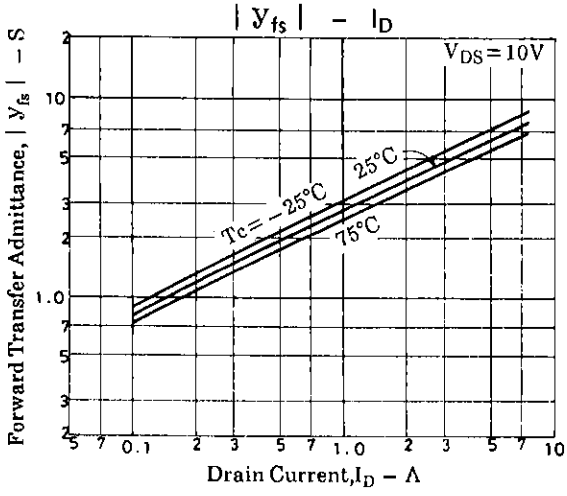
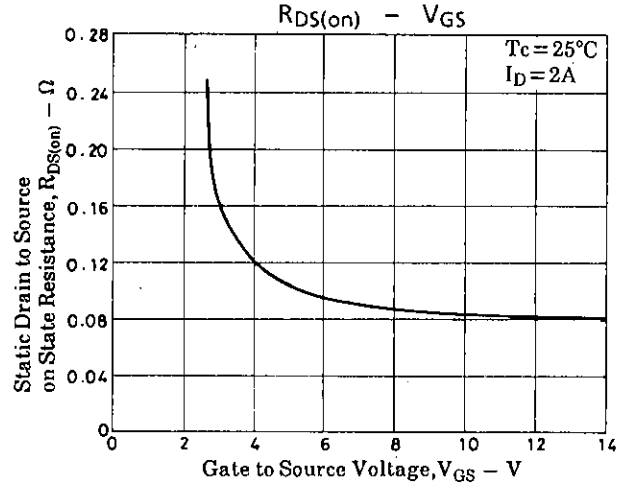
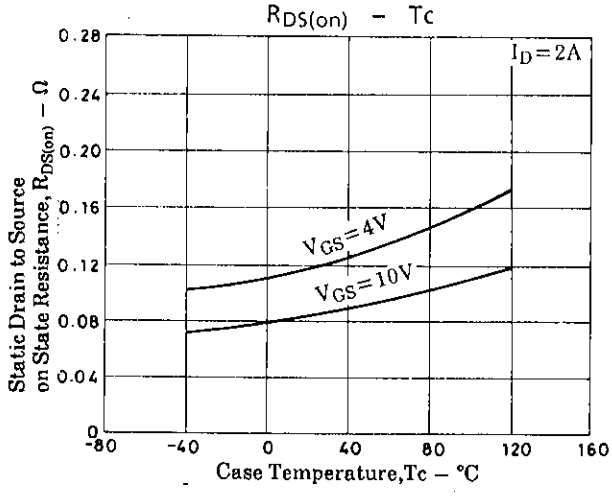
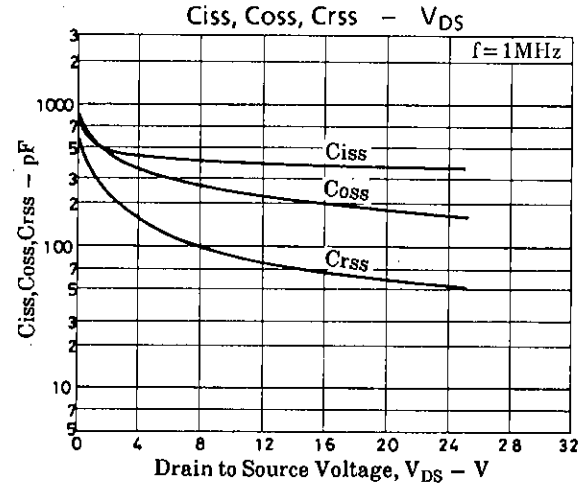

$I_D$ – $V_{DS}$
Drain Current, $I_D$ – A
Drain to Source Voltage, $V_{DS}$ – V
$V_{GS}$=4.0V
3.8V
3.6V
3.4V
3.2V
3.0V
2.8V
2.6V
2.4V
2.2V
2.0V

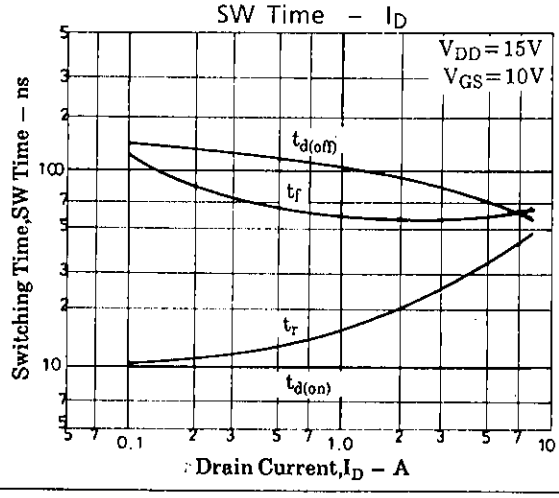

$I_D$ – $V_{GS}$
$V_{DS}$=10V
Drain Current, $I_D$ – A
Gate to Source Voltage, $V_{GS}$ – V
75°C
25°C
Tc=–25°C

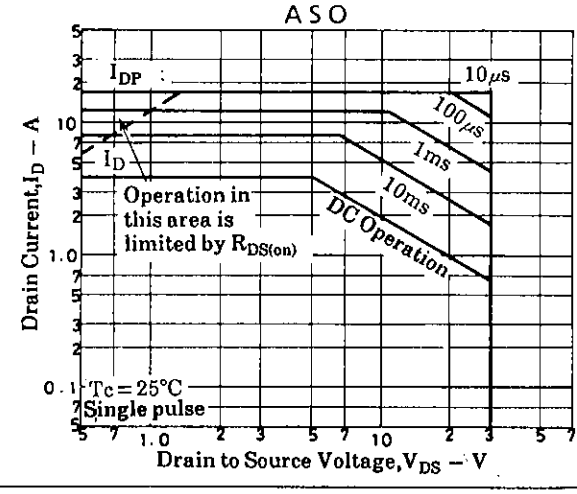

| $y_{fs}$ | – $I_D$
$V_{DS}$=10V
Forward Transfer Admittance, | $y_{fs}$ | – S
Drain Current, $I_D$ – A
Tc=–25°C
25°C
75°C


$R_{DS(on)}$ – $V_{GS}$
Tc=25°C
$I_D$=2A
Static Drain to Source on State Resistance, $R_{DS(on)}$ – Ω
Gate to Source Voltage, $V_{GS}$ – V


$R_{DS(on)}$ – Tc
$I_D$=2A
Static Drain to Source on State Resistance, $R_{DS(on)}$ – Ω
$V_{GS}$=4V
$V_{GS}$=10V
Case Temperature, Tc – °C


Ciss, Coss, Crss – $V_{DS}$
f=1MHz
Ciss, Coss, Crss – pF
Ciss
Coss
Crss
Drain to Source Voltage, $V_{DS}$ – V


SW Time – $I_D$
$V_{DD}$=15V
$V_{GS}$=10V
Switching Time, SW Time – ns
$t_{d(off)}$
$t_f$
$t_r$
$t_{d(on)}$
Drain Current, $I_D$ – A


ASO
$I_{DP}$
$I_D$
10μs
100μs
1ms
10ms
DC Operation
Operation in this area is limited by $R_{DS(on)}$
Tc=25°C
Single pulse
Drain Current, $I_D$ – A
Drain to Source Voltage, $V_{DS}$ – V