

No.4221

**2SJ285** 

P-Channel MOS Silicon FET

Very High-Speed Switching Applications

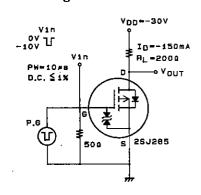
## **Features**

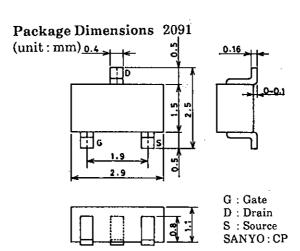
- · Low ON resistance.
- · Very high-speed switching.
- · Low-voltage drive.

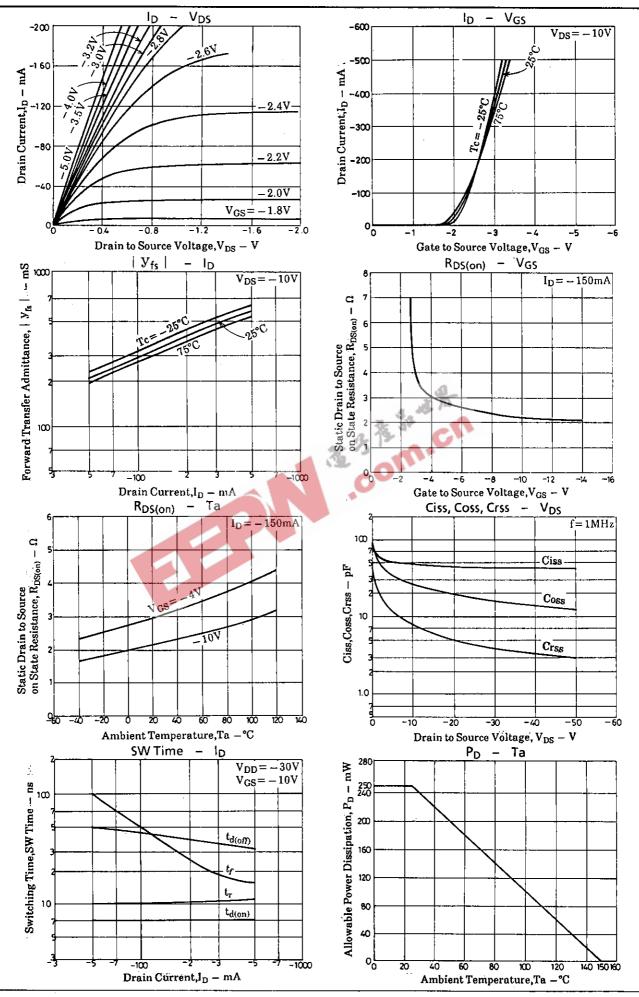
| Absolute Maximum Ratings at Ta<br>Drain to Source Voltage<br>Gate to Source Voltage<br>Drain Current(DC)<br>Drain Current(Pulse)<br>Allowable Power Dissipation<br>Channel Temperature<br>Storage Temperature | $a=25^{\circ}\mathrm{C}$ $V_{\mathrm{DSS}}$ $V_{\mathrm{GSS}}$ $I_{\mathrm{D}}$ $I_{\mathrm{DP}}$ $P_{\mathrm{D}}$ $T_{\mathrm{Ch}}$ | PW ≤ 10 $\mu$ s, duty cycle ≤ 1%  | :    | -60<br>±15<br>250<br>-1<br>250<br>150 | unit V V mA A mW °C °C |               |
|---|--|---|------|---------------------------------------|------------------------|---------------|
| Electrical Characteristics at Ta=   | 25°C   | 3   | min  | typ                                   | max                    | unit          |
| D-S Breakdown Voltage   | Vanance  | $I_D = -1 \text{mA.V}_{CS} = 0$   | -60  | *J P                                  | 111411                 | V             |
| Zero Gate Voltage   | Inge   | $I_D = -1 \text{mA}, V_{GS} = 0$<br>$V_{DS} = -60 \text{V}, V_{GS} = 0$ |      |                                       | -100                   | $\mu \dot{A}$ |
| Drain Current   | - סטע  | . D3  |      |                                       |                        | <i></i>       |
| Gate to Source Leakage Current  |  | $V_{GS} = \pm 12V, V_{DS} = 0$  |      |                                       | ±10                    | $\mu$ A       |
| Cutoff Voltage  | V <sub>GS(off)</sub>   | $V_{DS} = -10V, I_{D} = -1mA$   | -1.0 |                                       | -2.0                   | v             |
| Forward Transfer Admittance   | $ \mathbf{y}_{\mathrm{fs}} $   | $V_{DS} = -10V, I_D = -150mA$   | 200  | 350                                   |                        | mS            |
| Static Drain to Source  | R <sub>DS(on)</sub>  | $I_D = -150 \text{mA}, V_{GS} = -10 \text{V}$                           |      | 2.2                                   | 3.0                    | Ω             |
| on State Resistance   |  | $I_{D} = -150 \text{mA}, V_{GS} = -4 \text{V}$                          |      | 3.0                                   | 4.0                    | Ω             |
| Input Capacitance   | Ciss   | $V_{DS} = -20V$ , $f = 1MHz$  |      | 45                                    |                        | pF            |
| Output Capacitance  | Coss   | $V_{\rm DS} = -20 V$ , $f = 1 MHz$                                      |      | 20                                    |                        | pF            |
| Reverse Transfer Capacitance  | Crss   | $V_{DS} = -20V$ , $f = 1MHz$  |      | 5                                     |                        | pF            |
| Turn-ON Delay Time  | td(on)   | See specified Test Circuit.   |      | 7                                     |                        | ns            |
| Rise Time   | $\mathbf{t_r}$   | "   |      | 10                                    |                        | ns            |
| Turn-OFF Delay Time   | $t_{d(off)}$   | "   |      | 40                                    |                        | ns            |
| Fall Time   | $t_f$  | 4   |      | 35                                    |                        | ns            |
| Diode Forward Voltage   | $V_{SD}$   | $I_{S} = -250 \text{mA,V}_{GS} = 0$                                     |      | -1                                    |                        | V             |

Marking: BM

## Switching Time Test Circuit









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