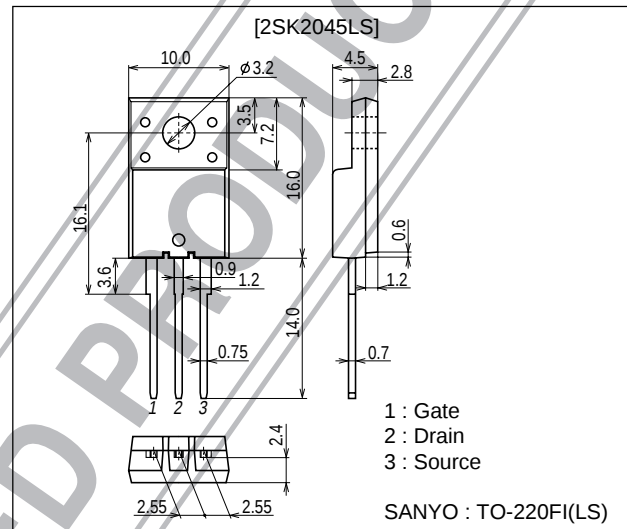


**SANYO****2SK2045LS****Ultrahigh-Speed Switching Applications****Features**

- Low ON-resistance.
- Ultrahigh-speed switching.
- High-speed diode ( $t_{\text{rr}}=140\text{ns}$ ).
- Micaless package facilitating mounting.

**Package Dimensions**unit : mm  
2078C**Specifications****Absolute Maximum Ratings** at  $T_a=25^\circ\text{C}$ 

| Parameter                   | Symbol           | Conditions             | Ratings     | Unit             |
|-----------------------------|------------------|------------------------|-------------|------------------|
| Drain-to-Source Voltage     | $V_{\text{DS}}$  |                        | 600         | V                |
| Gate-to-Source Voltage      | $V_{\text{GS}}$  |                        | $\pm 30$    | V                |
| Drain Current (DC)          | $I_{\text{D}}$   |                        | 5.5         | A                |
| Drain Current (Pulse)       | $I_{\text{DP}}$  |                        | 22          | A                |
| Allowable Power Dissipation | $P_{\text{D}}$   | $T_c=25^\circ\text{C}$ | 2.0         | W                |
|                             |                  |                        | 35          | W                |
| Channel Temperature         | $T_{\text{ch}}$  |                        | 150         | $^\circ\text{C}$ |
| Storage Temperature         | $T_{\text{stg}}$ |                        | -55 to +150 | $^\circ\text{C}$ |

**Electrical Characteristics** at  $T_a=25^\circ\text{C}$ 

| Parameter                         | Symbol                      | Conditions                                             | Ratings |     |           | Unit |
|-----------------------------------|-----------------------------|--------------------------------------------------------|---------|-----|-----------|------|
|                                   |                             |                                                        | min     | typ | max       |      |
| Drain-to-Source Breakdown Voltage | $V_{(\text{BR})\text{DSS}}$ | $I_{\text{D}}=10\text{mA}$ , $V_{\text{GS}}=0$         | 600     |     |           | V    |
| Zero-Gate Voltage Drain Current   | $I_{\text{DSS}}$            | $V_{\text{DS}}=480\text{V}$ , $V_{\text{GS}}=0$        |         |     | 1.0       | mA   |
| Gate-to-Source Leakage Current    | $I_{\text{GSS}}$            | $V_{\text{GS}}=\pm 30\text{V}$ , $V_{\text{DS}}=0$     |         |     | $\pm 100$ | nA   |
| Cutoff Voltage                    | $V_{\text{GS(off)}}$        | $V_{\text{DS}}=10\text{V}$ , $I_{\text{D}}=1\text{mA}$ | 2.0     |     | 3.0       | V    |

(Note) Be careful in handling the 2SK2045LS because it has no protection diode between gate and source.

Continued on next page.

Marking : K2045

- Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.
- SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

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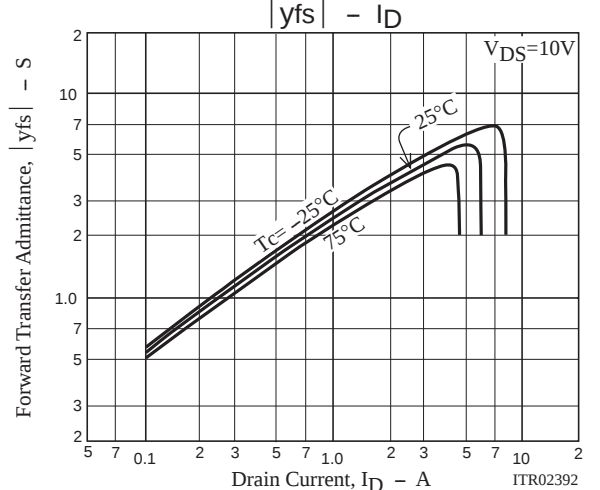
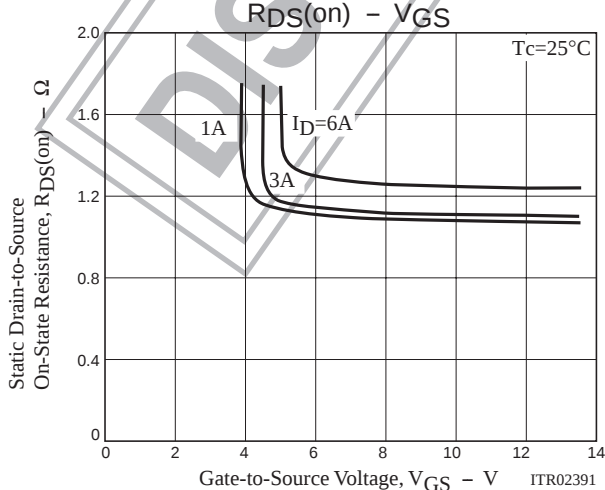
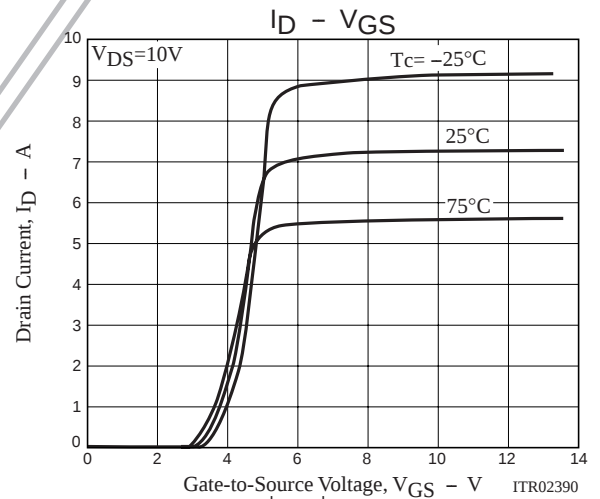
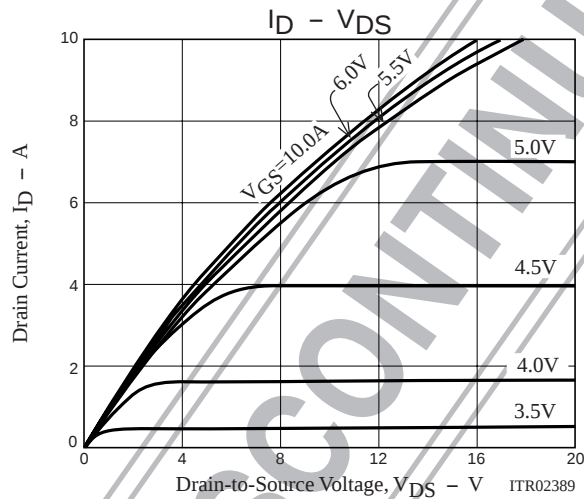
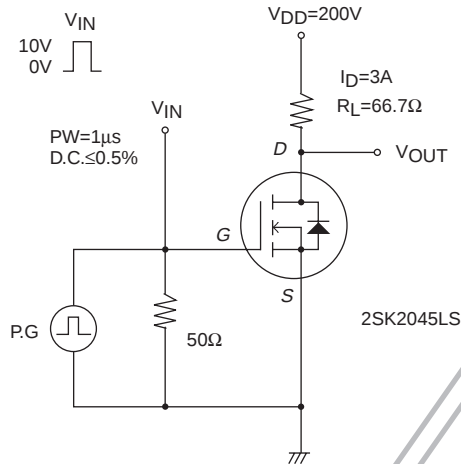
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

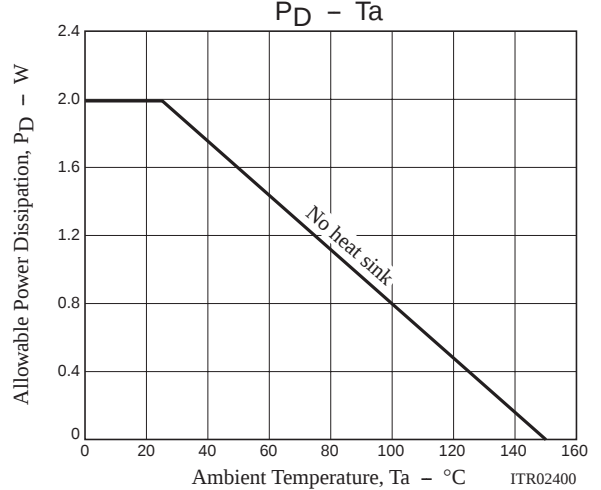
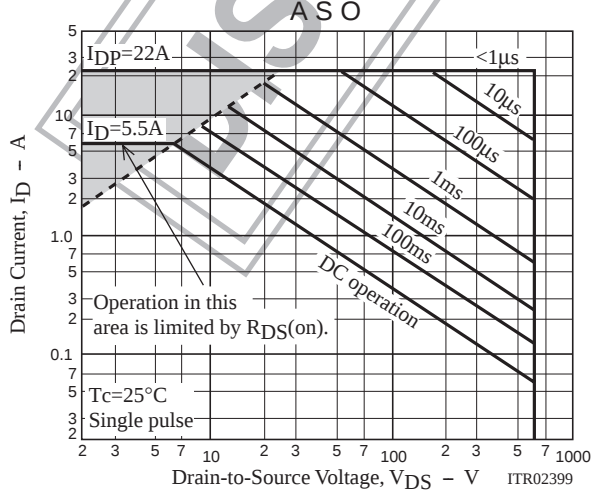
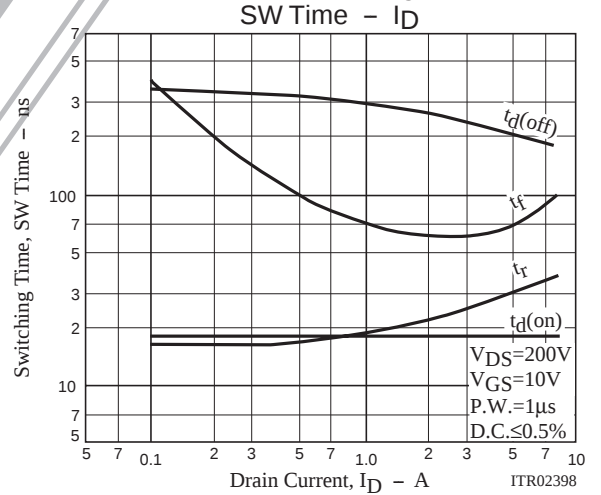
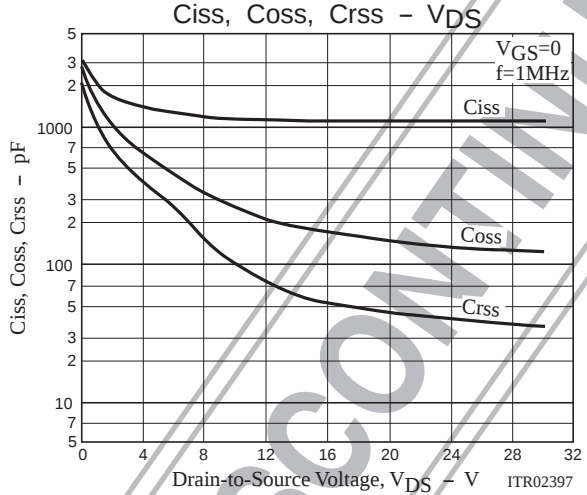
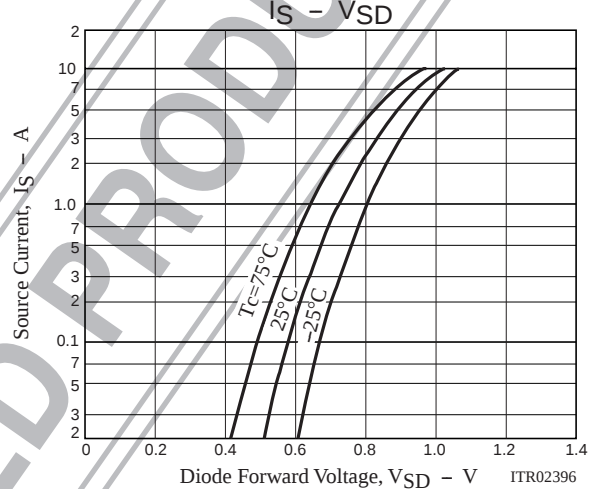
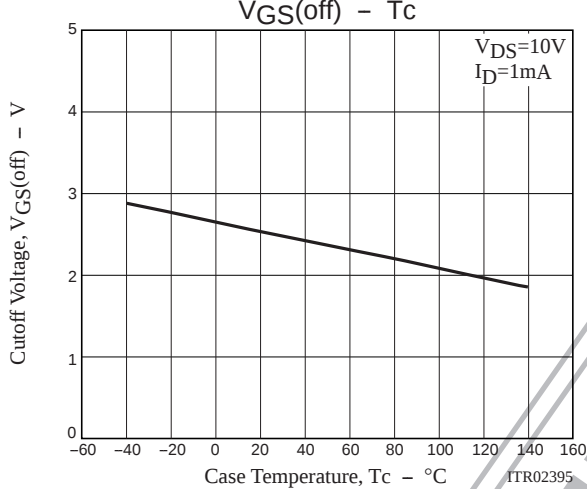
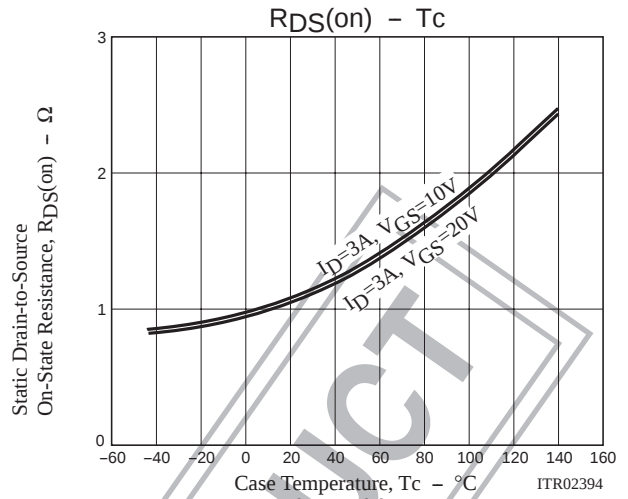
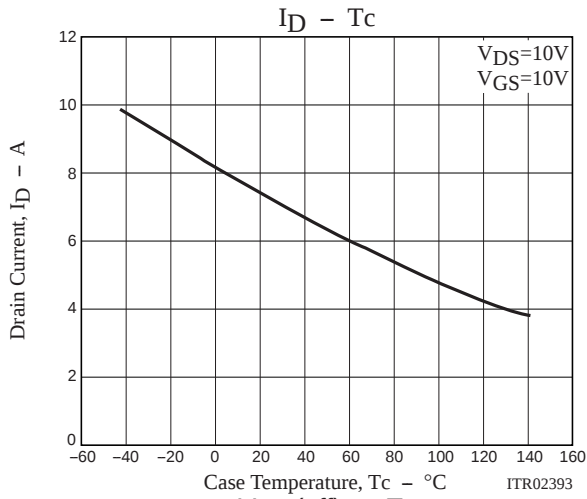
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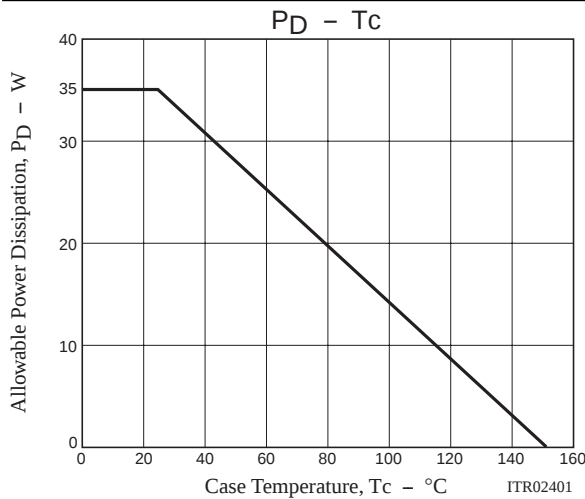
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| Parameter                                  | Symbol       | Conditions                   | Ratings |      |     | Unit     |
|--------------------------------------------|--------------|------------------------------|---------|------|-----|----------|
|                                            |              |                              | min     | typ  | max |          |
| Forward Transfer Admittance                | $ y_{fs} $   | $V_{DS}=10V, I_D=3A$         | 2.3     | 4.5  |     | S        |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)}$ | $I_D=3A, V_{GS}=10V$         |         | 1.1  | 1.5 | $\Omega$ |
| Input Capacitance                          | $C_{iss}$    | $V_{DS}=20V, f=1MHz$         |         | 1100 |     | pF       |
| Output Capacitance                         | $C_{oss}$    | $V_{DS}=20V, f=1MHz$         |         | 150  |     | pF       |
| Reverse Transfer Capacitance               | $C_{rss}$    | $V_{DS}=20V, f=1MHz$         |         | 45   |     | pF       |
| Turn-ON Delay Time                         | $t_d(on)$    | See specified Test Circuit.  |         | 18   |     | ns       |
| Rise Time                                  | $t_r$        | See specified Test Circuit.  |         | 25   |     | ns       |
| Turn-OFF Delay Time                        | $t_d(off)$   | See specified Test Circuit.  |         | 240  |     | ns       |
| Fall Time                                  | $t_f$        | See specified Test Circuit.  |         | 60   |     | ns       |
| Diode Forward Voltage                      | $V_{SD}$     | $I_S=5.5A, V_{GS}=0$         |         |      | 1.5 | V        |
| Diode Reverse Recovery Time                | $t_{rr}$     | $I_S=5.5A, di/dt=100A/\mu s$ |         | 140  |     | ns       |

### Switching Time Test Circuit







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