



2SK2555

DC/DC Converter Applications

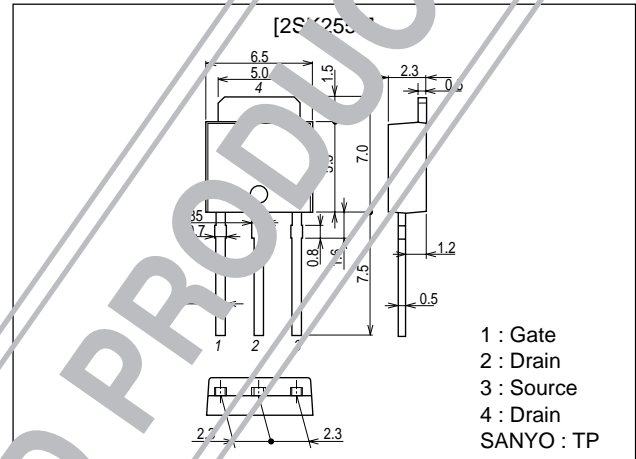
Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

Package Dimensions

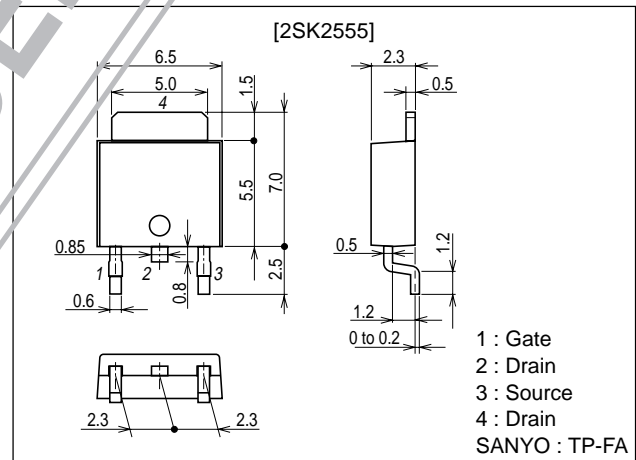
unit:mm

2083B



unit:mm

2083B



■ 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.

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Specifications

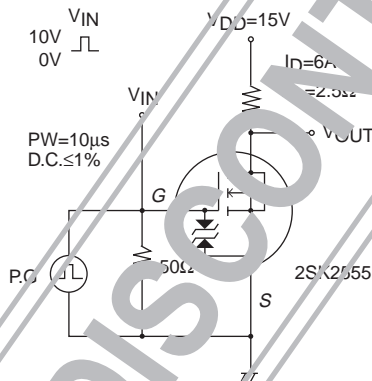
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|-----------|---|-------------|------------------|
| Drain-to-Source Voltage | V_{DSS} | | 30 | V |
| Gate-to-Source Voltage | V_{GSS} | | ± 25 | V |
| Drain Current (DC) | I_D | | 12 | A |
| Drain Current (Pulse) | I_{DP} | $PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$ | 48 | A |
| Allowable Power Dissipation | P_D | | 1 | W |
| | | $T_c = 25^\circ\text{C}$ | 30 | W |
| Channel Temperature | T_{ch} | | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

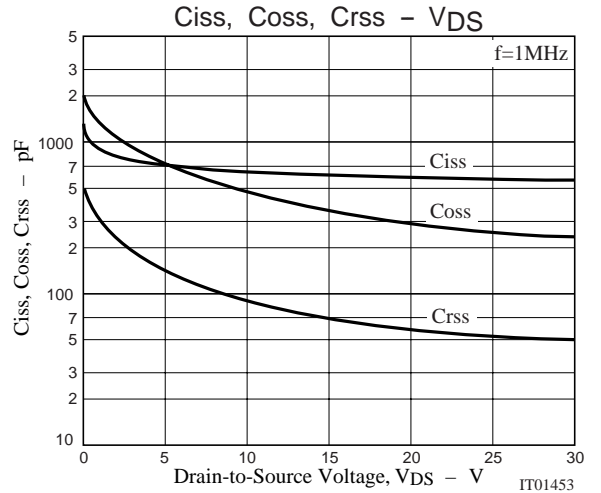
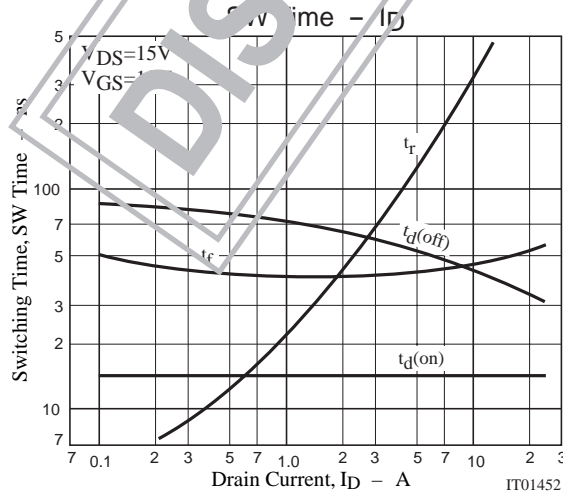
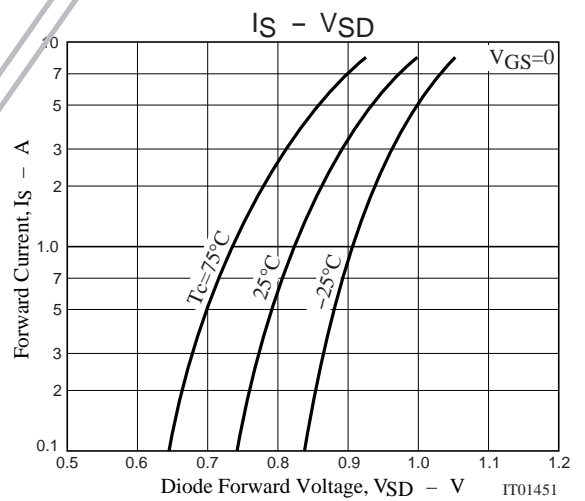
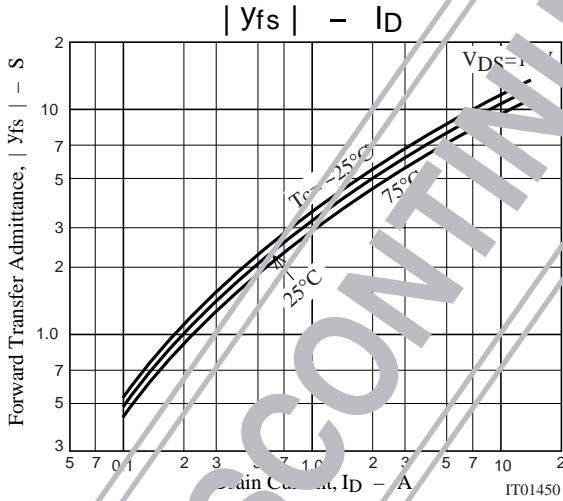
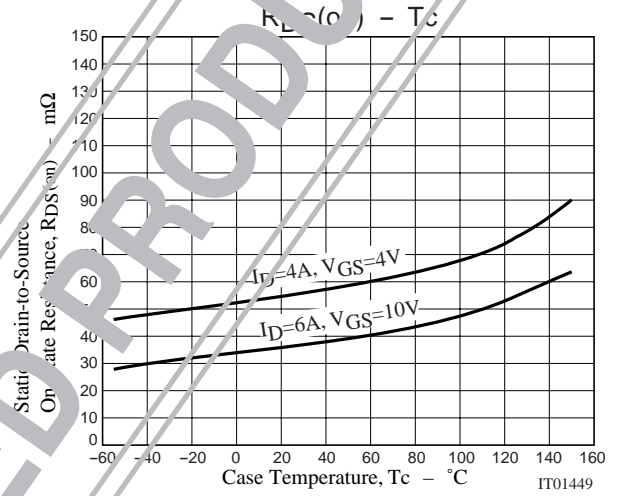
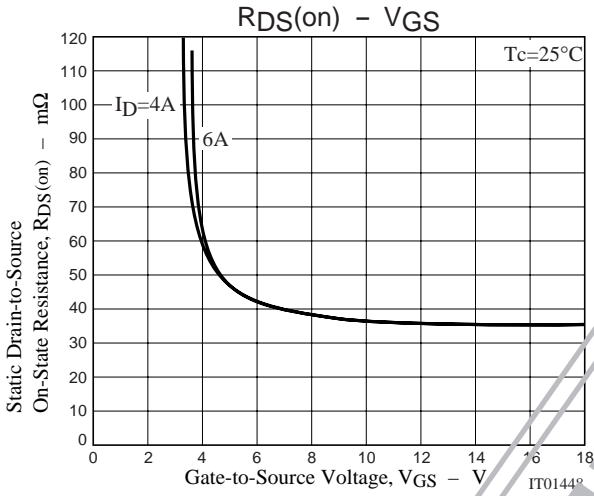
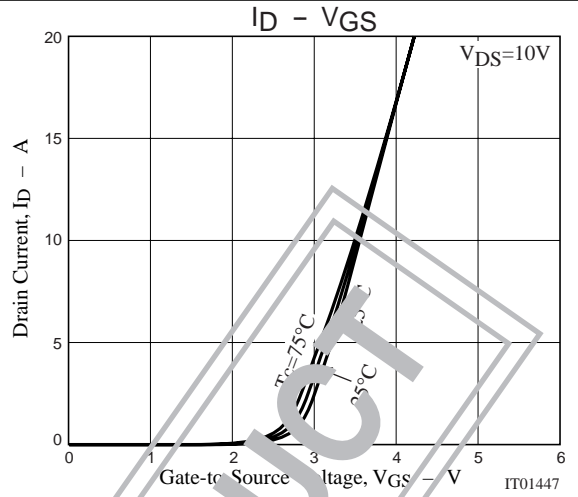
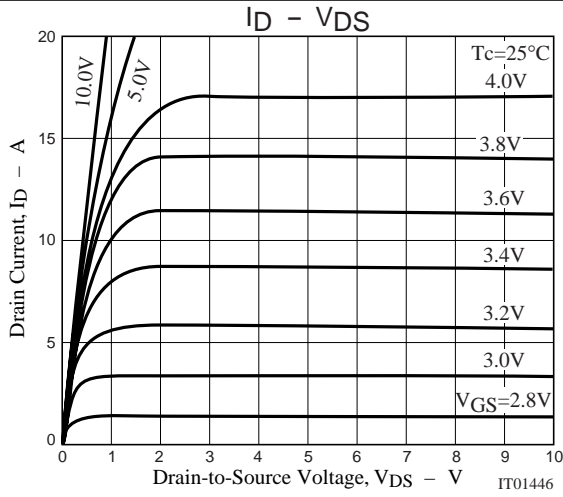
Electrical Characteristics at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|---|---------|-----|----------|------------------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D = 1\text{mA}$, $V_{GS} = 0$ | 30 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS} = 30\text{V}$, $V_{GS} = 0$ | | | 100 | μA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS} = \pm 20\text{V}$, $V_{DS} = 0$ | | | ± 10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS} = 10\text{V}$, $I_D = 1\text{mA}$ | 1.0 | | 2.5 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS} = 10\text{V}$, $I_D = 6\text{A}$ | 6 | 8 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D = 6\text{A}$, $V_{GS} = 10\text{V}$ | | 36 | 46 | $\text{m}\Omega$ |
| | $R_{DS(on)2}$ | $I_D = 4\text{A}$, $V_{GS} = 4\text{V}$ | | 58 | 78 | $\text{m}\Omega$ |
| Input Capacitance | C_{iss} | $V_{DS} = 10\text{V}$, $f = 1\text{MHz}$ | | 650 | | pF |
| Output Capacitance | C_{oss} | $V_{DS} = 10\text{V}$, $f = 1\text{MHz}$ | | 480 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS} = 10\text{V}$, $f = 1\text{MHz}$ | | 90 | | pF |
| Turn-ON Delay Time | $t_d(on)$ | See specified Test Circuit | | 15 | | ns |
| Rise Time | t_r | See specified Test Circuit | | 170 | | ns |
| Turn-OFF Delay Time | $t_d(off)$ | See specified Test Circuit | | 50 | | ns |
| Fall Time | t_f | See specified Test Circuit | | 45 | | ns |
| Total Gate Charge | Q_g | $V_{DS} = 10\text{V}$, $V_{GS} = 10\text{V}$, $I_D = 1\text{A}$ | | 20 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS} = 10\text{V}$, $V_{GS} = 10\text{V}$, $I_D = 1\text{A}$ | | 3 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS} = 10\text{V}$, $V_{GS} = 10\text{V}$, $I_D = 1\text{A}$ | | 6 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S = 6\text{A}$, $V_{GS} = 0$ | 1.0 | 1.2 | | V |

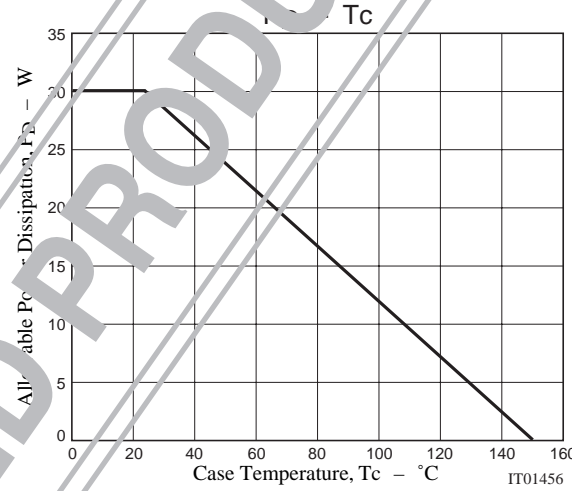
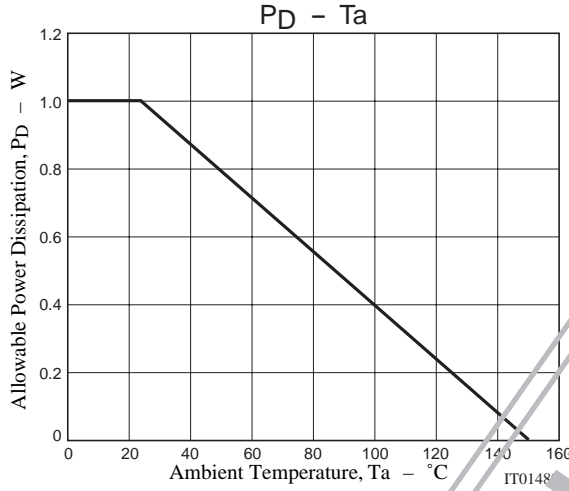
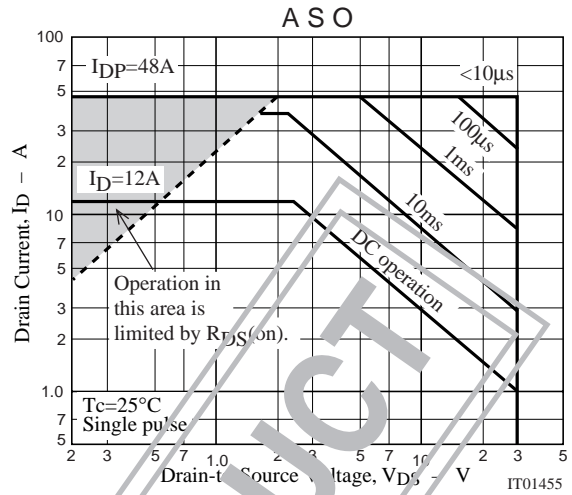
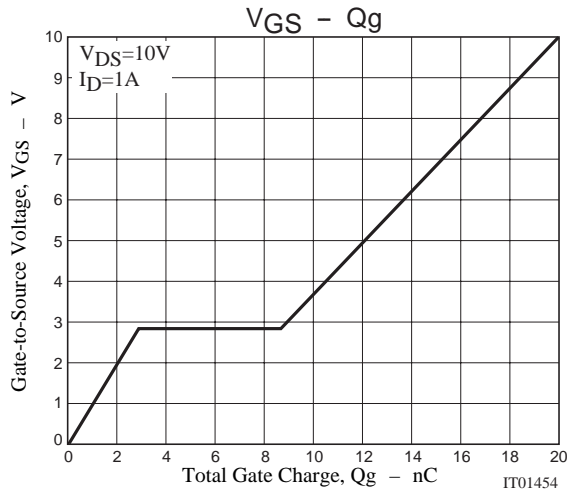
Switching Time Test Circuit



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