



FTD2013

Load Switching Applications

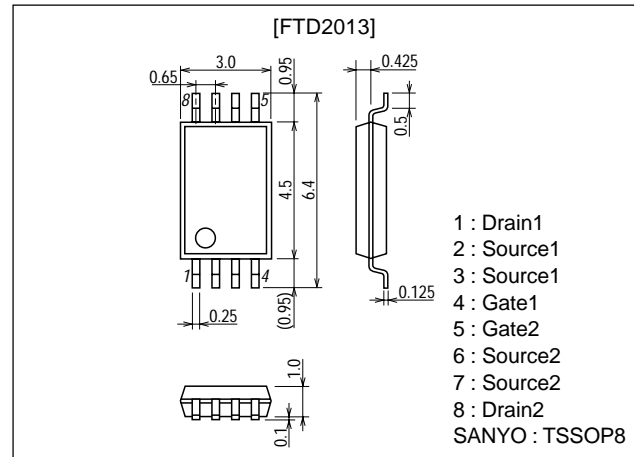
Features

- Low ON resistance.
- 2.5V drive.
- Mounting height 1.1mm.
- Composite type, facilitating high-density mounting.

Package Dimensions

unit:mm

2155A



Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|-----------|--|-------------|------|
| Drain-to-Source Voltage | V_{DSS} | | 30 | V |
| Gate-to-Source Voltage | V_{GSS} | | ± 10 | V |
| Drain Current (DC) | I_D | | 4.5 | A |
| Drain Current (pulse) | I_{DP} | $PW \leq 10\mu s$, duty cycle $\leq 1\%$ | 20 | A |
| Allowable Power Dissipation | P_D | Mounted on a ceramic board (1000mm ² ×0.8mm) 1 unit | 0.8 | W |
| Total Dissipation | P_T | Mounted on a ceramic board (1000mm ² ×0.8mm) | 1.3 | W |
| Channel Temperature | T_{ch} | | 150 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|------------------------------|---------|------|----------|-----------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D=1mA$, $V_{GS}=0$ | 30 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=30V$, $V_{GS}=0$ | | | 1 | μA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 8V$, $V_{DS}=0$ | | | ± 10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}=10V$, $I_D=1mA$ | 0.5 | | 1.3 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=10V$, $I_D=4.5A$ | 7 | 10 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D=4.5A$, $V_{GS}=4V$ | | 25 | 35 | $m\Omega$ |
| | $R_{DS(on)2}$ | $I_D=2A$, $V_{GS}=2.5V$ | | 34 | 48 | $m\Omega$ |
| Input Capacitance | C_{iss} | $V_{DS}=10V$, $f=1MHz$ | | 1000 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=10V$, $f=1MHz$ | | 185 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=10V$, $f=1MHz$ | | 135 | | pF |

Marking : D2013

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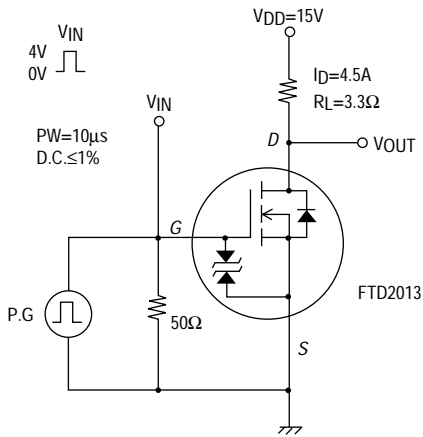
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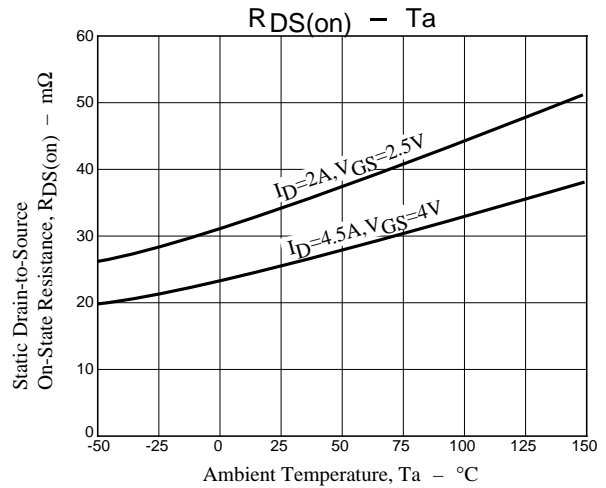
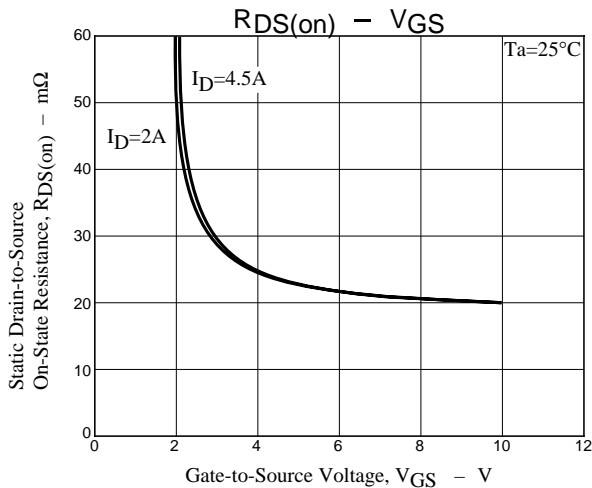
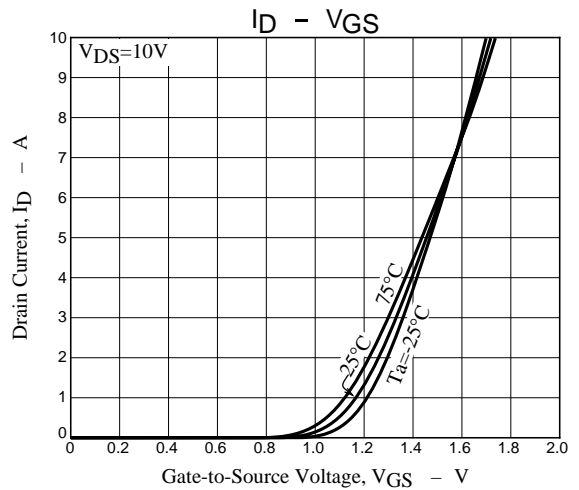
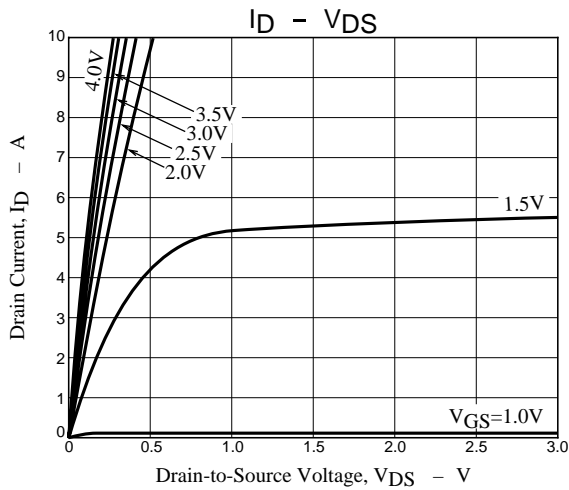
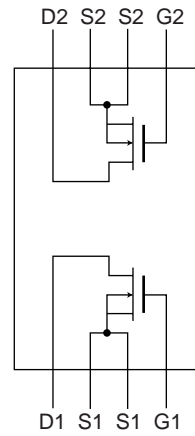
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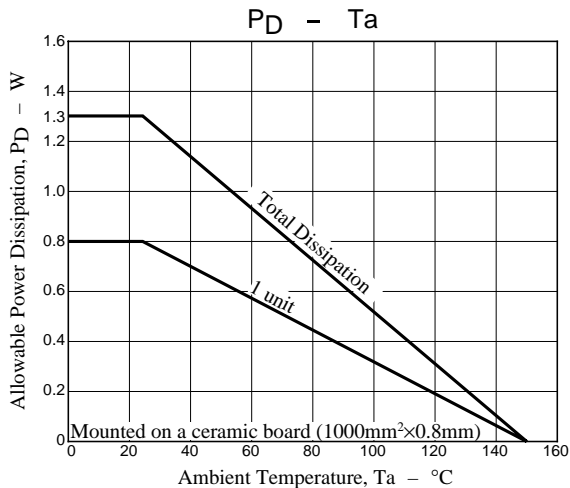
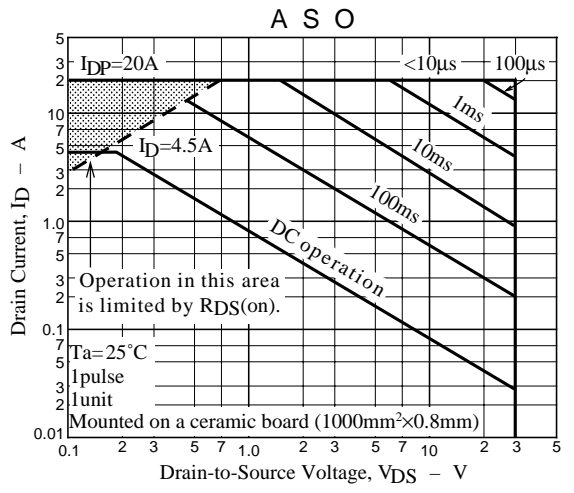
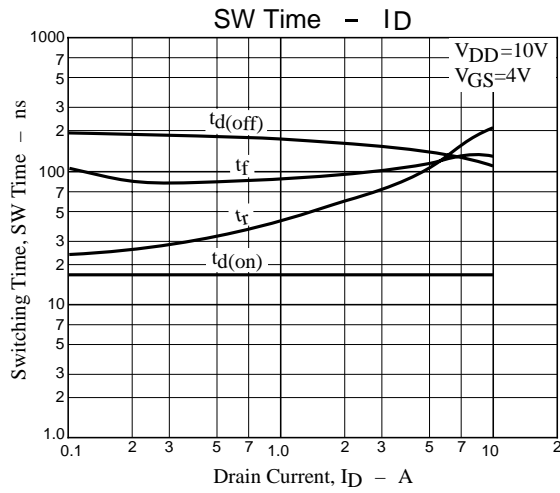
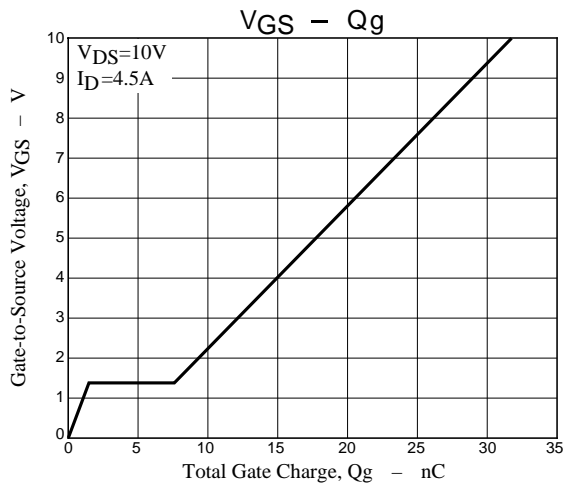
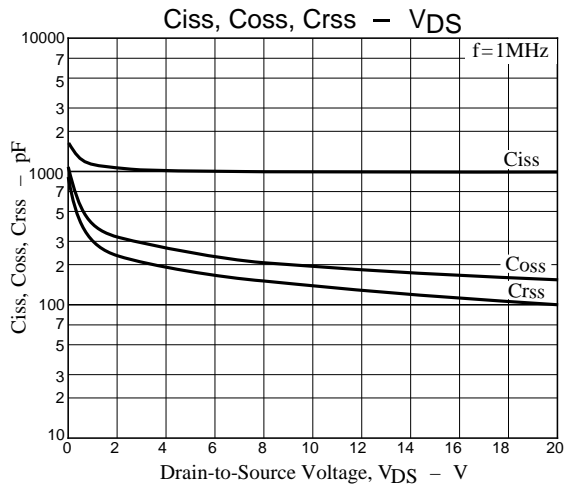
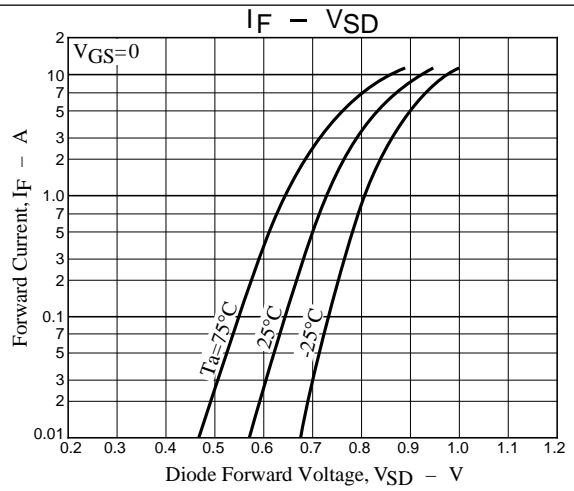
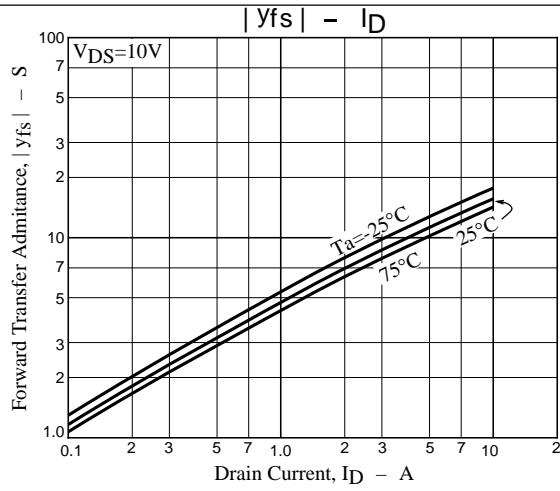
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|--------------|------------------------------------|---------|------|-----|------|
| | | | min | typ | max | |
| Turn-ON Delay Time | $t_{d(on)}$ | See Specified Test Circuit | | 16 | | ns |
| Rise Time | t_r | See Specified Test Circuit | | 100 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See Specified Test Circuit | | 140 | | ns |
| Fall Time | t_f | See Specified Test Circuit | | 110 | | ns |
| Total Gate Charge | Qg | $V_{DS}=10V, V_{GS}=10V, I_D=4.5A$ | | 32 | | nC |
| Gate-to-Source Charge | Qgs | | | 1.5 | | nC |
| Gate-to-Drain "Miller" Charge | Qgd | | | 6 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=4.5A, V_{GS}=0$ | | 0.82 | 1.2 | V |

Switching Time Test Circuit



Electrical Connection





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