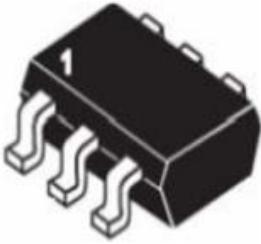
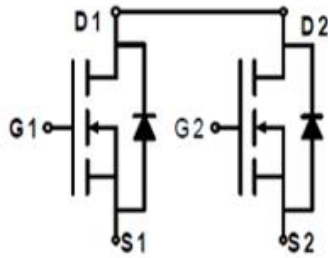
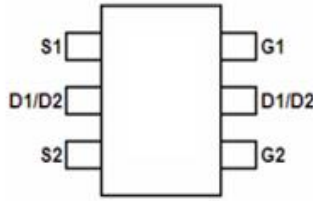


N-Channel Enhancement Mode Field Effect Transistor



SOT-23-6L



Product Summary

- V_{DS} 20V
- I_D 7.0A
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) < 18 mohm
- $R_{DS(ON)}$ (at $V_{GS}=2.5V$) < 22 mohm
- $R_{DS(ON)}$ (at $V_{GS}=1.8V$) < 39 mohm

General Description

- Trench Power LV MOSFET technology
- High Power and current handling capability

Applications

- PWM application
- Load switch

■ Absolute Maximum Ratings ($T_A=25^\circ C$ unless otherwise noted)

| Parameter | Symbol | Limit | Unit |
|--|-----------------|---------------------------------|--------------|
| Drain-source Voltage | V_{DS} | 20 | V |
| Gate-source Voltage | V_{GS} | ± 10 | V |
| Drain Current | I_D | $T_A=25^\circ C$ @ Steady State | 7.0 |
| | | $T_A=70^\circ C$ @ Steady State | 5.6 |
| Pulsed Drain Current ^A | I_{DM} | 30 | A |
| Total Power Dissipation @ $T_A=25^\circ C$ | P_D | 1.5 | W |
| Thermal Resistance Junction-to-Ambient @ Steady State ^B | $R_{\theta JA}$ | 83 | $^\circ C/W$ |
| Junction and Storage Temperature Range | T_J, T_{STG} | -55~+150 | $^\circ C$ |

■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | Marking | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|---------|----------------------|-------------------------|----------------------------|---------------|
| YJS8205B | F2 | 8205B | 3000 | 30000 | 120000 | 7" reel |



YJS8205B

■ Electrical Characteristics (T_J=25°C unless otherwise noted)

| Parameter | Symbol | Conditions | Min | Typ | Max | Units |
|---------------------------------------|---------------------|--|------|------|------|-------|
| Static Parameter | | | | | | |
| Drain-Source Breakdown Voltage | BV _{DSS} | V _{GS} = 0V, I _D =250μA | 20 | | | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =20V, V _{GS} =0V | | | 1 | μA |
| Gate-Body Leakage Current | I _{GSS} | V _{GS} = ±10V, V _{DS} =0V | | | ±100 | nA |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D =250μA | 0.45 | 0.62 | 1.0 | V |
| Static Drain-Source On-Resistance | R _{DS(ON)} | V _{GS} = 4.5V, I _D =5.0A | | 13 | 18 | mΩ |
| | | V _{GS} = 2.5V, I _D =3.0A | | 17 | 22 | |
| | | V _{GS} = 1.8V, I _D =1.5A | | 21 | 39 | |
| Diode Forward Voltage | V _{SD} | I _S =7.0A, V _{GS} =0V | | | 1.2 | V |
| Maximum Body-Diode Continuous Current | I _S | | | | 7.0 | A |
| Dynamic Parameters | | | | | | |
| Input Capacitance | C _{iss} | V _{DS} =10V, V _{GS} =0V, f=1MHZ | | 900 | | pF |
| Output Capacitance | C _{oss} | | | 165 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 75 | | |
| Switching Parameters | | | | | | |
| Total Gate Charge | Q _g | V _{GS} =4.5V, V _{DS} =10V, I _D =5.0A | | 9.2 | | nC |
| Gate Source Charge | Q _{gs} | | | 1.7 | | |
| Gate Drain Charge | Q _{gd} | | | 2.9 | | |
| Turn-on Delay Time | t _{D(on)} | V _{GS} =4.5V, V _{DD} =10V, R _L =1.5Ω, R _{GEN} =3Ω | | 12 | | ns |
| Turn-on Rise Time | t _r | | | 52 | | |
| Turn-off Delay Time | t _{D(off)} | | | 17 | | |
| Turn-off Fall Time | t _f | | | 10 | | |

A. Pulse Test: Pulse Width ≤ 300μs, Duty cycle ≤ 2%.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.



■ Typical Performance Characteristics

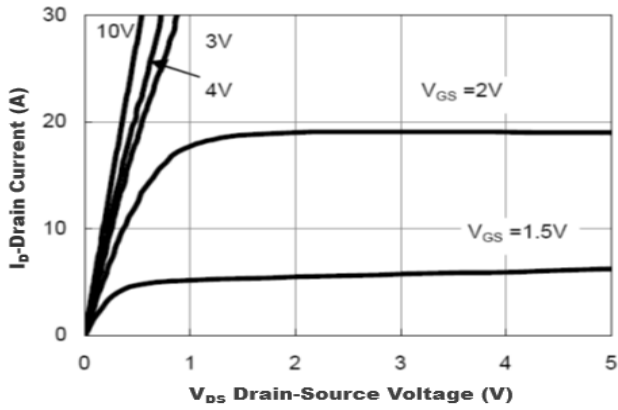


Figure1. Output Characteristics

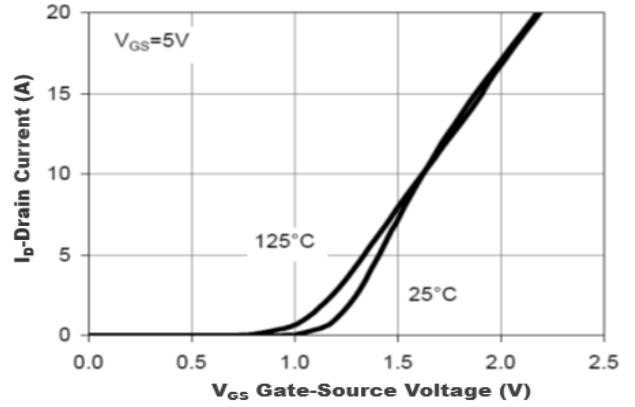


Figure2. Transfer Characteristics

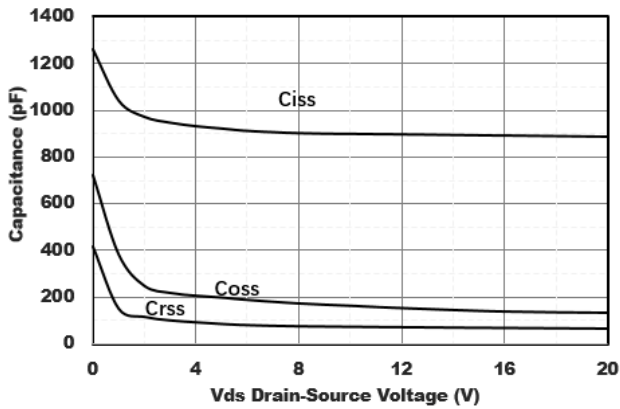


Figure3. Capacitance Characteristics

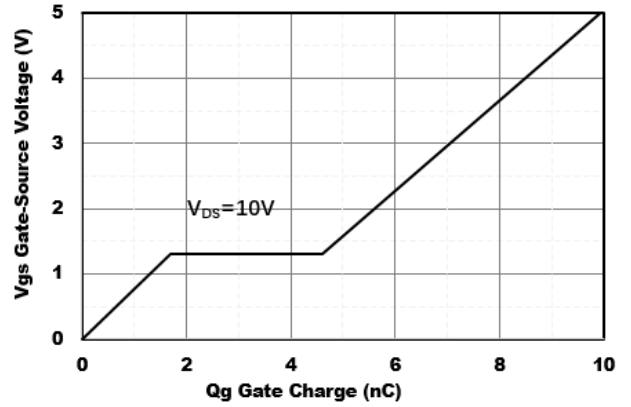


Figure4. Gate Charge

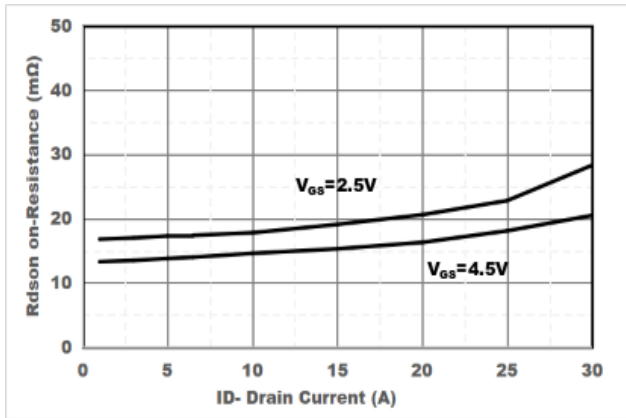


Figure5. Drain-Source on Resistance

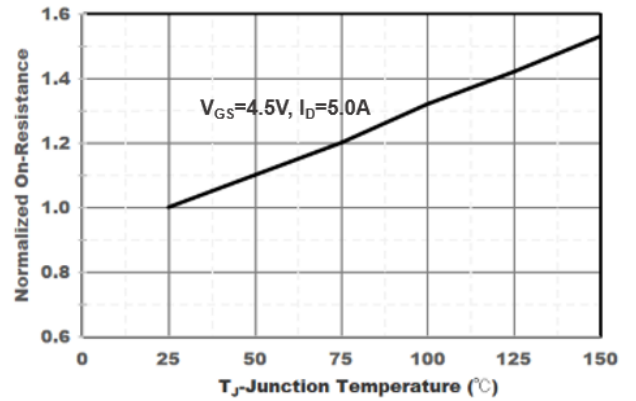


Figure6. Drain-Source on Resistance

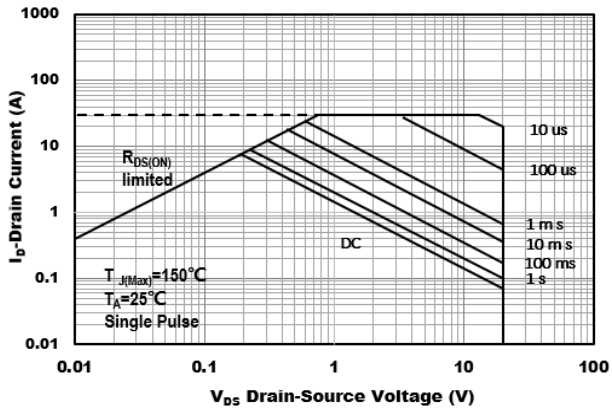


Figure7. Safe Operation Area

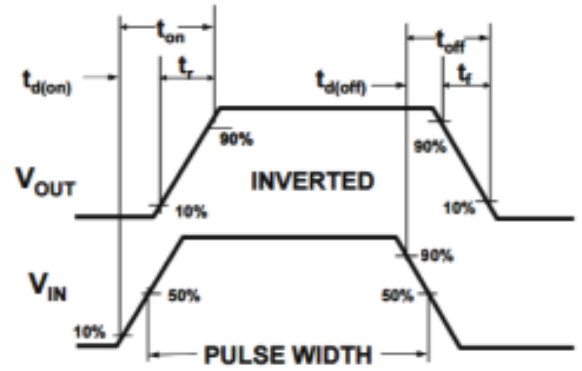
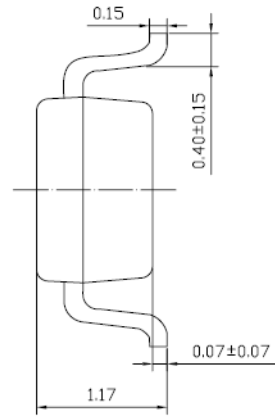
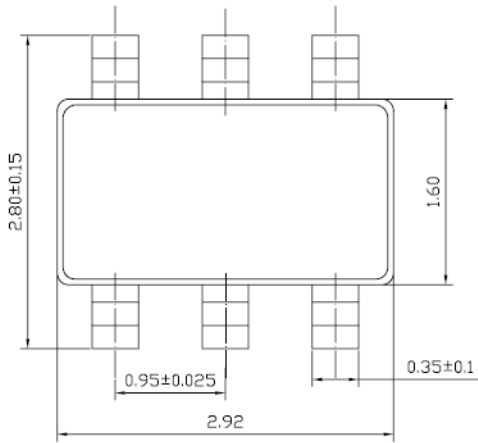


Figure8. Switching wave



■SOT-23-6L Package information



技术要求:

- 1.树脂体不应有崩裂、缺损等缺陷;
- 2.未注公差: ± 0.050 ;
- 3.树脂上下部X、Y方向偏差不超过0.08MAX;
- 4.胶体两端留废胶总和宽度不超过0.30;
- 5.所有单位为mm;



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The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

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