

PT8205H

20V Dual N-Channel Enhancement Mode MOSFET

VDS = 20V

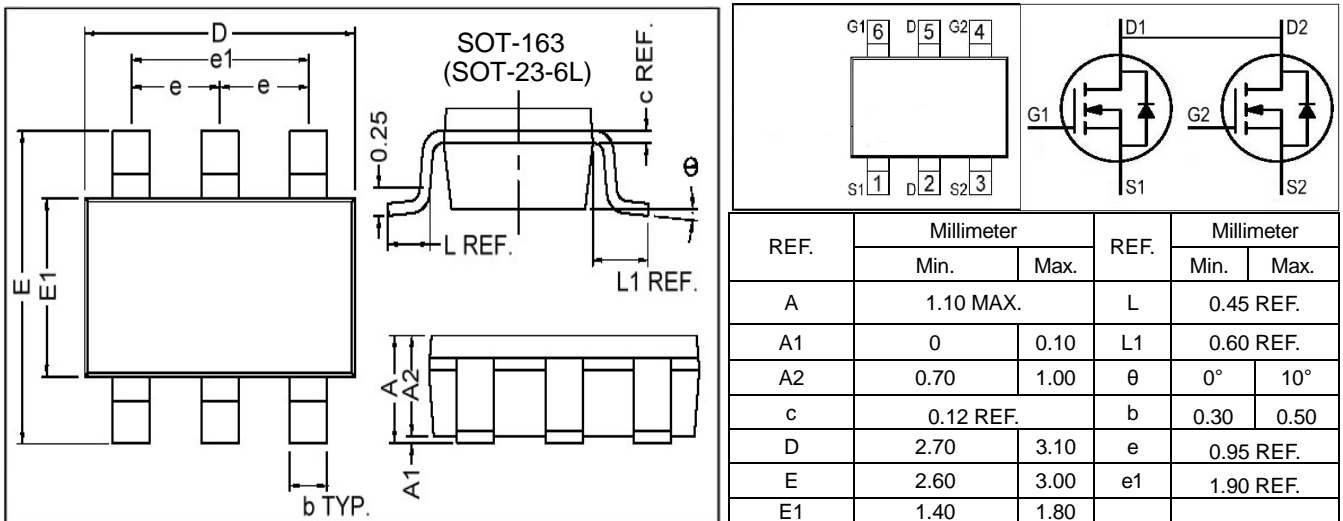
RDS(ON), Vgs @ 2.5V, Ids @ 5.2A = 25.3mΩ

RDS(ON), Vgs @ 4.5V, Ids @ 6A = 19.8mΩ

Features

- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- High Power and Current handling capability
- Ideal for Li ion battery pack applications

Package Dimensions



Maximum Ratings and Thermal Characteristics (TA = 25°C unless otherwise noted)

| Parameter | Symbol | Limit | Unit |
|--|-----------------------------------|------------|------|
| Drain-Source Voltage | V _{DS} | 20 | V |
| Gate-Source Voltage | V _{GS} | ± 12 | |
| Continuous Drain Current | I _D | 6 | A |
| Pulsed Drain Current ¹⁾ | I _{DM} | 25 | |
| Maximum Power Dissipation | P _D | 1.25 | W |
| Operating Junction and Storage Temperature Range | T _J , T _{stg} | -55 to 150 | °C |
| Junction-to-Ambient Thermal Resistance (PCB mounted) ²⁾ | R _{θJA} | 100 | °C/W |

Notes

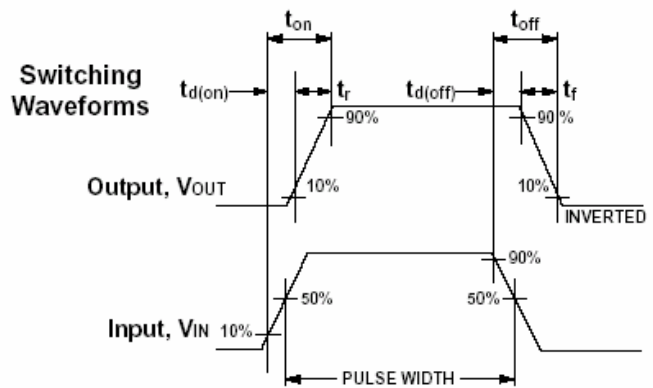
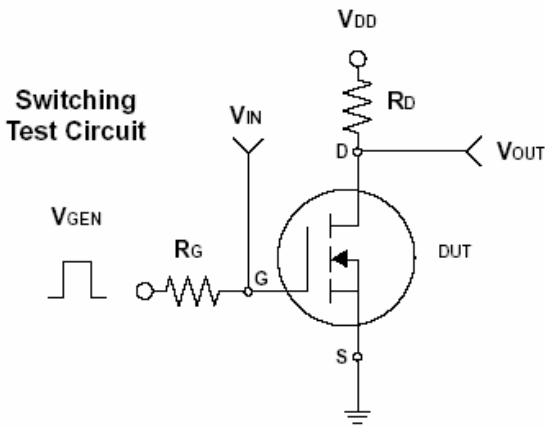
- ¹⁾ Pulse width limited by maximum junction temperature.
- ²⁾ Surface Mounted on FR4 Board, t ≤ 5 sec.

20V Dual N-Channel Enhancement Mode MOSFET

ELECTRICAL CHARACTERISTICS

| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|--|--------------|--|------|------|------|------|
| Static | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS} = 0V, I_D = 250\mu A$ | 20 | - | - | V |
| Drain-Source On-State Resistance ¹⁾ | $R_{DS(on)}$ | $V_{GS} = 2.5V, I_D = 5.2A$ | | 25.3 | 32 | mΩ |
| Drain-Source On-State Resistance ¹⁾ | $R_{DS(on)}$ | $V_{GS} = 4.5V, I_D = 6A$ | | 19.8 | 25 | |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = 250\mu A$ | 0.6 | | 1.2 | V |
| Zero Gate Voltage Drain Current 0 | I_{DSS} | $V_{DS} = 16V, V_{GS} = 0V$ | | | 1 | μA |
| Gate Body Leakage | I_{GSS} | $V_{GS} = \pm 12V, V_{DS} = 0V$ | | | ±100 | nA |
| Forward Transconductance | g_{fs} | $V_{DS} = 5V, I_D = 6A$ | | 22 | — | S |
| Dynamic¹⁾ | | | | | | |
| Total Gate Charge | Q_g | $V_{DS} = 10V, I_D = 6A$ $V_{GS} = 4.5V$ | | 5 | | nC |
| Gate-Source Charge | Q_{gs} | | | 1.1 | | |
| Gate-Drain Charge | Q_{gd} | | | 2.1 | | |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DD} = 10V, R_G = 6\Omega$ $I_D = 1A, V_{GS} = 4.5V$ | | 10 | | ns |
| Turn-On Rise Time | t_r | | | 11 | | |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 35 | | |
| Turn-Off Fall Time | t_f | | | 30 | | |
| Input Capacitance | C_{iss} | $V_{DS} = 8V, V_{GS} = 0V$ $f = 1.0\text{ MHz}$ | | 600 | | pF |
| Output Capacitance | C_{oss} | | | 330 | | |
| Reverse Transfer Capacitance | C_{rss} | | | 140 | | |
| Source-Drain Diode | | | | | | |
| Max. Diode Forward Current | I_S | | | | 1.7 | A |
| Diode Forward Voltage | V_{SD} | $I_S = 1.7A, V_{GS} = 0V$ | | 0.72 | 1.2 | V |

¹⁾ Pulse test: pulse width ≤ 300μs, duty cycle ≤ 2%



Typical Characteristics (T_J = 25°C Noted)

