

N-CHANNEL SILICON POWER MOSFET

FAP-2S Series

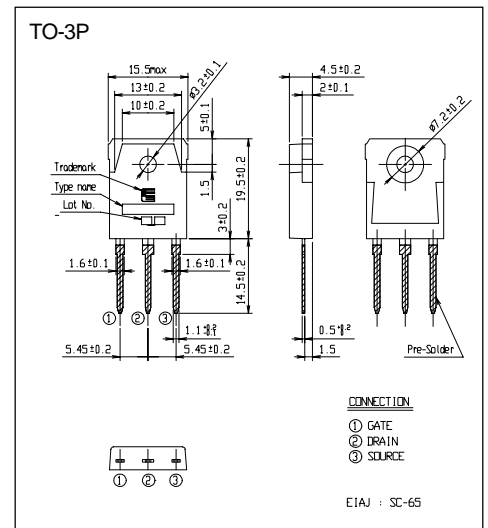
Features

- High speed switching
- Low on-resistance
- No secondary breakdown
- Low driving power
- Avalanche-proof

Applications

- Switching regulators
- UPS (Uninterruptible Power Supply)
- DC-DC converters

Outline Drawings



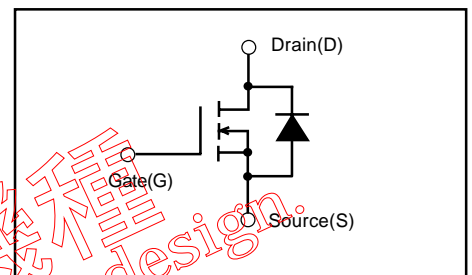
Maximum ratings and characteristic Absolute maximum ratings

(T_c=25°C unless otherwise specified)

| Item | Symbol | Ratings | Unit |
|---|-------------------------------------|---------------------|------|
| Drain-source voltage | V _{DS} | 800 | V |
| Continuous drain current | I _D | ±7 | A |
| Pulsed drain current | I _{D(puls)} | ±28 | A |
| Gate-source voltage | V _{GS} | ±35 | V |
| Repetitive or non-repetitive | IAR*2 | 7 | A |
| Maximum Avalanche Energy | EAS*1 | 267 | mJ |
| Max. power dissipation | P _D | 125 | W |
| Operating and storage temperature range | T _{ch} T _{stg} | +150 -55 to +150 | °C |

*1 L=10.0mH, V_{CC}=80V *2 T_{ch}≥150°C

Equivalent circuit schematic



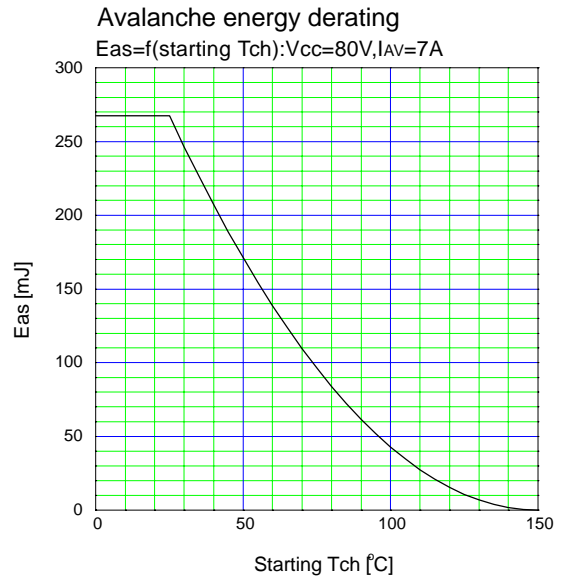
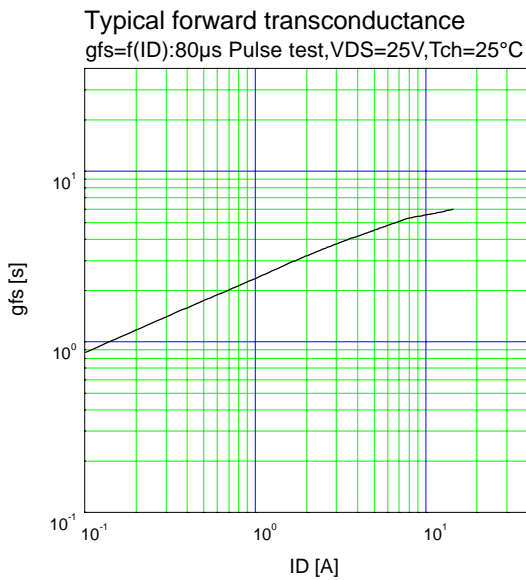
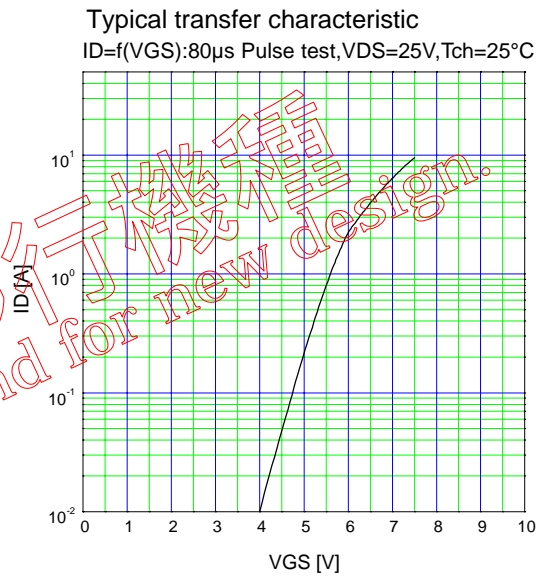
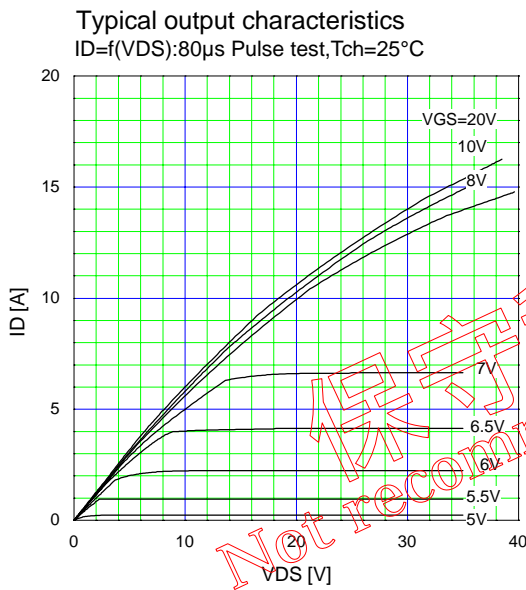
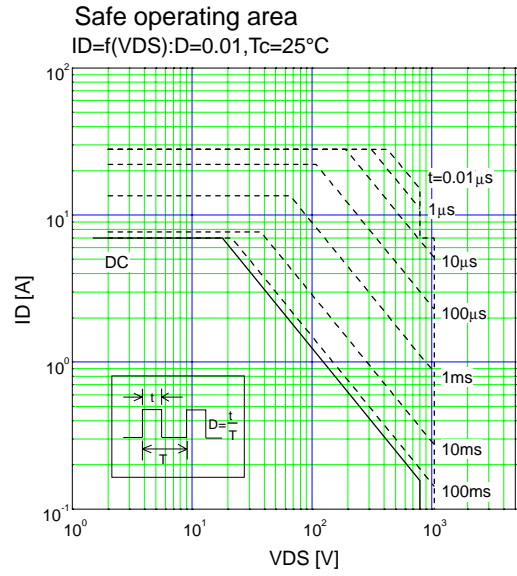
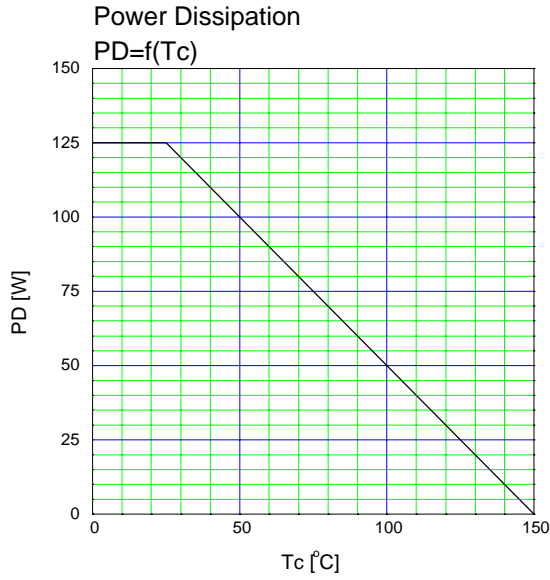
Electrical characteristics (T_c =25°C unless otherwise specified)

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|----------------------------------|----------------------|--|------|------|------|-------|
| Drain-source breakdown voltage | V _{(BR)DSS} | I _D =1mA V _{GS} =0V | 800 | | | V |
| Gate threshold voltage | V _{GS(th)} | I _D =1mA V _{DS} =V _{GS} | 3.5 | 4.0 | 4.5 | V |
| Zero gate voltage drain current | I _{DSS} | V _{DS} =800V | | 10 | 500 | μA |
| | | V _{GS} =0V | | 0.2 | 1.0 | mA |
| Gate-source leakage current | I _{GSS} | V _{GS} =±35V V _{DS} =0V | | 10 | 100 | nA |
| Drain-source on-state resistance | R _{DS(on)} | I _D =3.5A V _{GS} =10V | | 1.62 | 2.0 | Ω |
| Forward transconductance | g _{fs} | I _D =3.5A V _{DS} =25V | 2.0 | 4.0 | | S |
| Input capacitance | C _{iss} | V _{DS} =25V | | 900 | 1350 | pF |
| Output capacitance | C _{oss} | V _{GS} =0V | | 130 | 200 | |
| Reverse transfer capacitance | C _{rss} | f=1MHz | | 70 | 110 | ns |
| Turn-on time t _{on} | t _{d(on)} | V _{CC} =600V I _D =7A | | 25 | 40 | |
| | t _r | V _{GS} =10V | | 90 | 140 | |
| Turn-off time t _{off} | t _{d(off)} | R _{GS} =10Ω | | 80 | 120 | |
| | t _f | | | 50 | 80 | |
| Avalanche capability | I _{AV} | L=100μH T _{ch} =25°C | 7 | | | A |
| Diode forward on-voltage | V _{SD} | I _F =2I _{DR} V _{GS} =0V T _{ch} =25°C | | 1.0 | 1.5 | V |
| Reverse recovery time | t _{rr} | I _F =I _{DR} V _{GS} =0V | | 900 | | ns |
| Reverse recovery charge | Q _{rr} | -di/dt=100A/μs T _{ch} =25°C | | 10.0 | | μC |

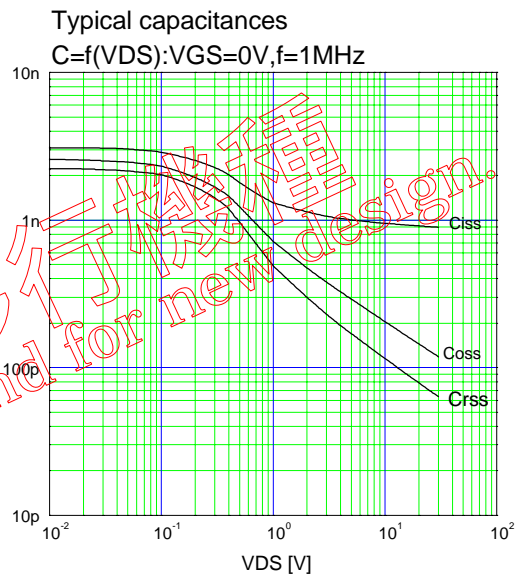
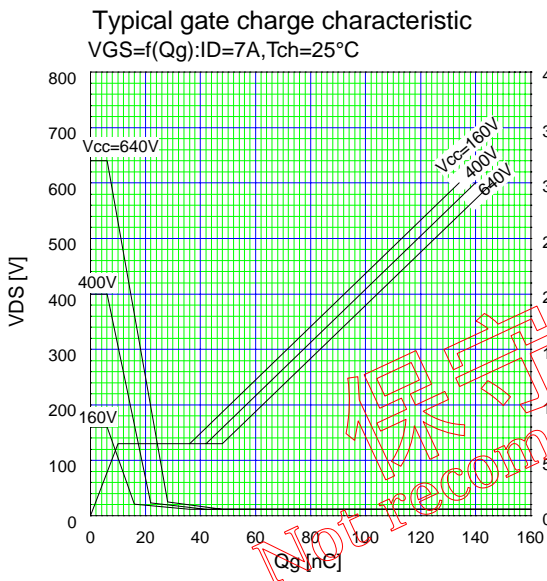
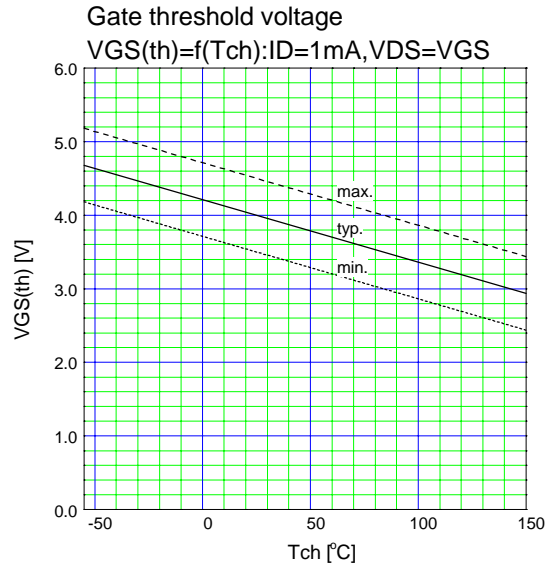
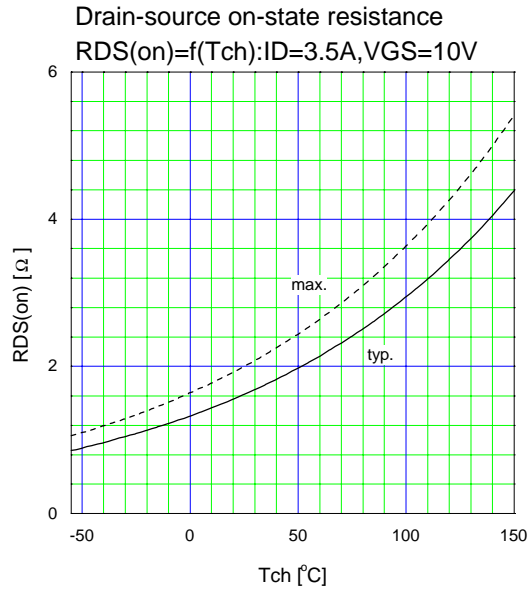
Thermal characteristics

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|--------------------|-----------------------|--------------------|------|------|------|-------|
| Thermal resistance | R _{th(ch-c)} | channel to case | | | 1.0 | °C/W |
| | R _{th(ch-a)} | channel to ambient | | | 35.0 | °C/W |

Characteristics

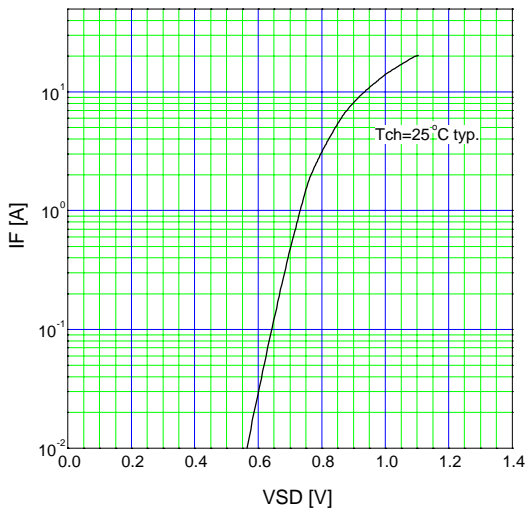


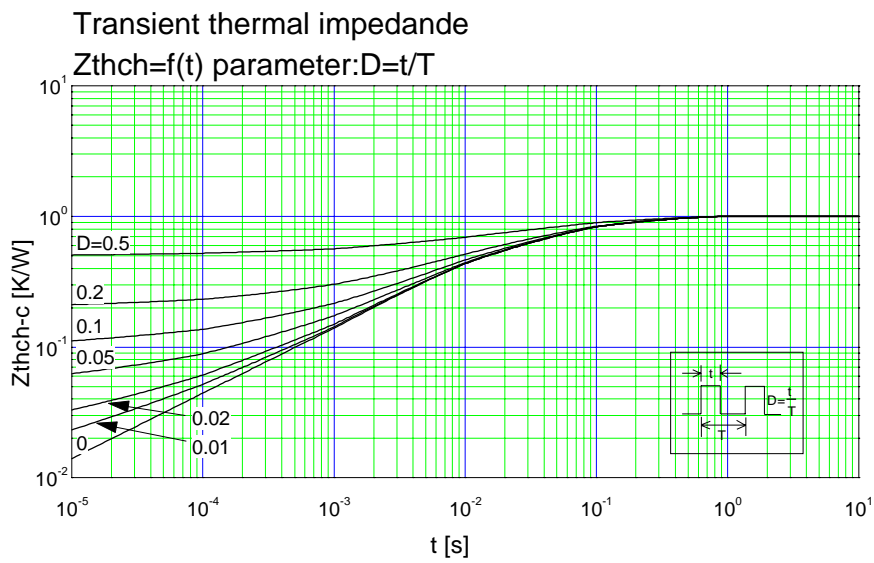
保守移行仕様
 Not recommend for new design.



$I_F = f(V_{SD}): 80\mu s$ Pulse test, $V_{GS} = 0V$

Forward characteristic of reverse of diode





保守移行機種
Not recommend for new design.