

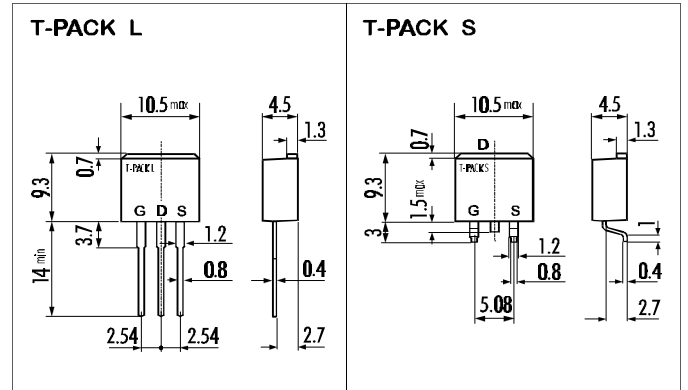
> **Features**

- High Current
- Low On-Resistance
- No Secondary Breakdown
- Low Driving Power
- High Forward Transconductance

> **Applications**

- Motor Control
- General Purpose Power Amplifier
- DC-DC converters

> **Outline Drawing**

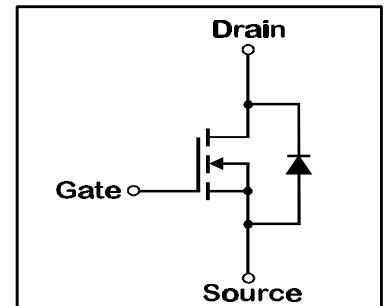


> **Maximum Ratings and Characteristics**

- Absolute Maximum Ratings (T_C=25°C), unless otherwise specified

| Item | Symbol | Rating | Unit |
|--|----------------------|------------|------|
| Drain-Source-Voltage | V _{DS} | 30 | V |
| Drain-Gate Voltage (R _{GS} =20KΩ) | V _{DGR} | 30 | V |
| Continous Drain Current | I _D | 10 | A |
| Pulsed Drain Current | I _{D(puls)} | 40 | A |
| Gate-Source-Voltage | V _{GS} | ±16 | V |
| Max. Power Dissipation | P _D | 35 | W |
| Operating and Storage Temperature Range | T _{ch} | 150 | °C |
| | T _{stg} | -55 ~ +150 | °C |

> **Equivalent Circuit**



- Electrical Characteristics (T_C=25°C), unless otherwise specified

| Item | Symbol | Test conditions | Min. | Typ. | Max. | Unit |
|--|----------------------|---|----------------|-------|-------|------|
| Drain-Source Breakdown-Voltage | V _{(BR)DSS} | I _D =1mA V _{GS} =0V | 30 | | | V |
| Gate Threshold Voltage | V _{GS(th)} | I _D =1mA V _{DS} =V _{GS} | 1,0 | 1,5 | 2,0 | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =30V T _{ch} =25°C | | 10 | 500 | μA |
| | | V _{GS} =0V T _{ch} =125°C | | 0,2 | 1,0 | mA |
| Gate Source Leakage Current | I _{GSS} | V _{GS} =±16V V _{DS} =0V | | 10 | 100 | nA |
| Drain Source On-State Resistance | R _{DS(on)} | I _D =5A V _{GS} =4V | | 0,045 | 0,080 | Ω |
| | | I _D =5A V _{GS} =10V | | 0,035 | 0,060 | Ω |
| Forward Transconductance | g _{fs} | I _D =5A V _{DS} =10V | 5 | 10 | | S |
| Input Capacitance | C _{iss} | V _{DS} =25V | | 900 | 1350 | pF |
| Output Capacitance | C _{oss} | V _{GS} =0V | | 600 | 900 | pF |
| Reverse Transfer Capacitance | C _{rss} | f=1MHz | | 160 | 240 | pF |
| Turn-On-Time t _{on} (t _{on} =t _{d(on)} +t _r) | t _{d(on)} | V _{CC} =10V I _D =10A | | 10 | 15 | ns |
| | | | t _r | | 15 | 25 |
| Turn-Off-Time t _{off} (t _{on} =t _{d(off)} +t _f) | t _{d(off)} | V _{GS} =10V R _{GS} =25 Ω | | 110 | 170 | ns |
| | | | t _f | | 60 | 90 |
| Avalanche Capability | I _{AV} | L=100μH T _{ch} =25°C | 10 | | | A |
| Diode Forward On-Voltage | V _{SD} | I _F =2xI _{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 | | 35 | | ns |
| Reverse Recovery Charge | Q _{rr} | -dI _F /dt=100A/μs T _{ch} =25°C | | 0,05 | | μC |

- Thermal Characteristics

| Item | Symbol | Test conditions | Min. | Typ. | Max. | Unit |
|--------------------|-----------------------|-----------------|------|------|------|------|
| Thermal Resistance | R _{th(ch-a)} | channel to air | | | 125 | °C/W |
| | R _{th(ch-c)} | channel to case | | | 3,57 | °C/W |

N-channel MOS-FET

30V | 0,06Ω | 10A | 35W

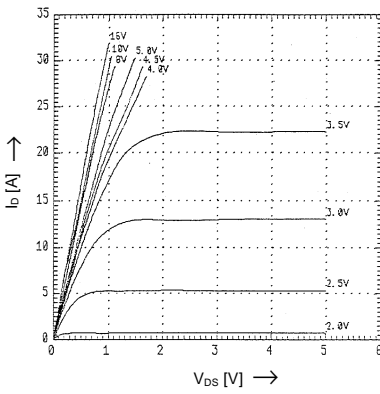
2SK2249-01L,S

F-III Series

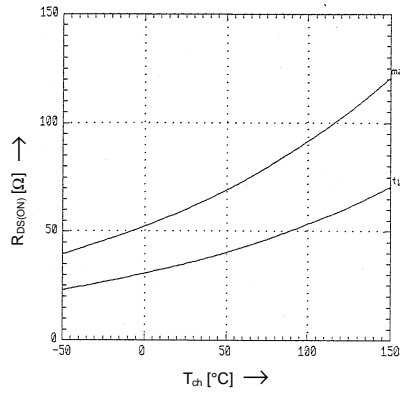


> Characteristics

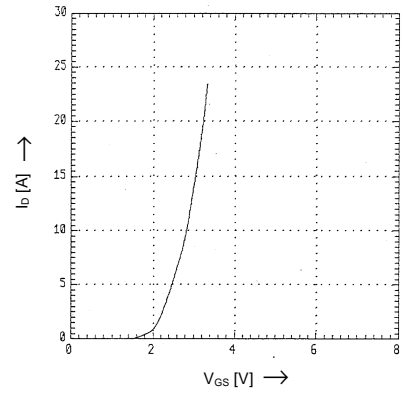
Typical Output Characteristics



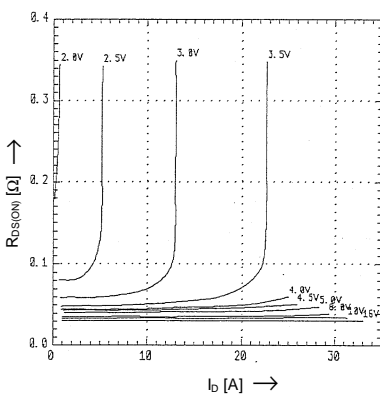
Drain-Source-On-State Resistance vs. T_{ch}



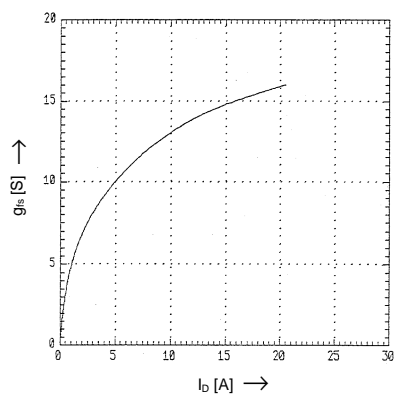
Typical Transfer Characteristics



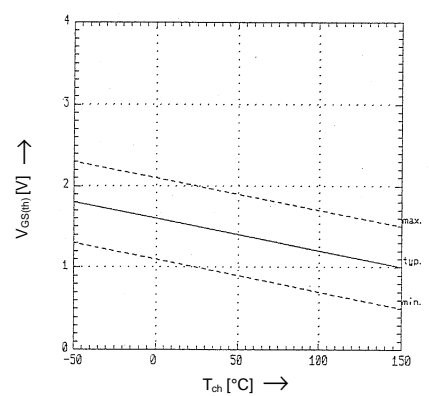
Typical Drain-Source-On-State-Resistance vs. I_D



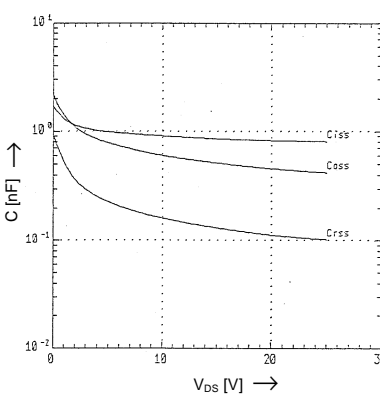
Typical Forward Transconductance vs. I_D



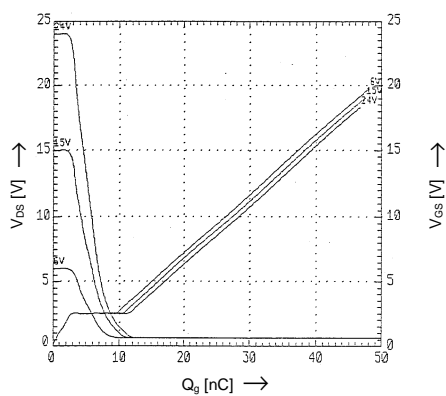
Gate Threshold Voltage vs. T_{ch}



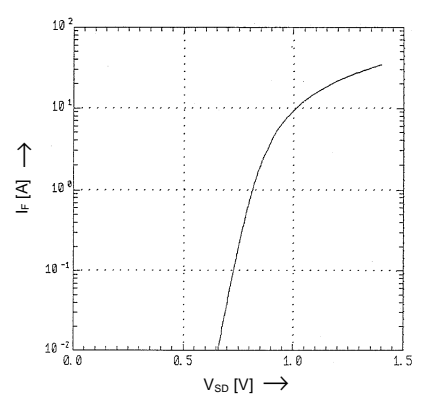
Typical Capacitance vs. V_{DS}



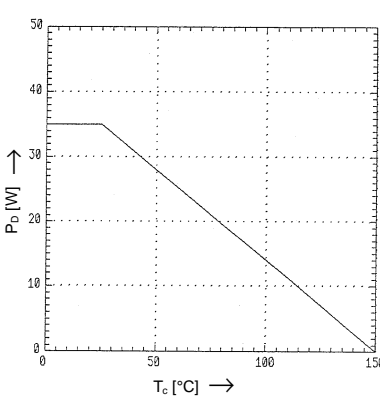
Typical Input Charge



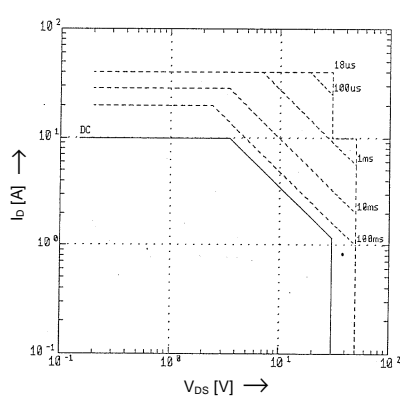
Forward Characteristics of Reverse Diode



Allowable Power Dissipation vs. T_c



Safe operation area



Transient Thermal impedance

