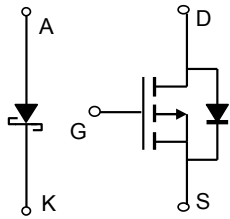
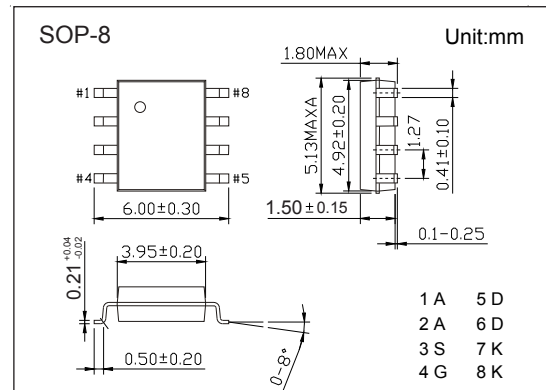


P-Channel MOSFET

AO4771 (KO4771)

■ Features

- $V_{DS} (V) = -30V$
- $I_D = -4 A (V_{GS} = -10V)$
- $R_{DS(ON)} < 68m\Omega (V_{GS} = -10V)$
- $R_{DS(ON)} < 105m\Omega (V_{GS} = -4.5V)$
- $V_{DS} (V) = 30V, I_F = 4A, V_F < 0.5V @ 1A$



■ Absolute Maximum Ratings $T_a = 25^\circ C$

| Parameter | Symbol | MOSFET | Schottky | Unit |
|---|-------------------------------|------------------|----------|--------------|
| Drain-Source Voltage | V_{DS} | -30 | | V |
| Gate-Source Voltage | V_{GS} | ± 20 | | |
| Schottky Reverse Voltage | V_{KA} | | 30 | |
| Continuous Drain Current | I_D | $T_A=25^\circ C$ | -4 | A |
| | | $T_A=70^\circ C$ | -3 | |
| Pulsed Drain Current | I_{DM} | -18 | | |
| Continuous Forward Current | I_F | $T_A=25^\circ C$ | 4 | |
| | | $T_A=70^\circ C$ | 2.5 | |
| Avalanche Current | I_{AS}, I_{AR} | 11 | | |
| Avalanche Energy | $L=0.1mH$ E_{AS}, E_{AR} | 6 | | mJ |
| Power Dissipation | P_D | $T_A=25^\circ C$ | 2 | W |
| | | $T_A=70^\circ C$ | 1.3 | |
| Thermal Resistance.Junction- to-Ambient | R_{thJA} | $t \leq 10s$ | 62.5 | $^\circ C/W$ |
| | | Steady-State | 90 | |
| Thermal Resistance.Junction- to-Lead | R_{thJL} | 40 | | |
| Junction Temperature | T_J | 150 | | $^\circ C$ |
| Storage Temperature Range | T_{stg} | -55 to 150 | | |

P-Channel MOSFET

AO4771 (KO4771)

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---------------------|---|---|-----|------|------|
| Drain-Source Breakdown Voltage | V _{BS} | I _D =250 μA, V _{GS} =0V | -30 | | | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =-30V, V _{GS} =0V | | | -1 | μA |
| | | V _{DS} =-30V, V _{GS} =0V, T _J =55°C | | | -5 | |
| Gate-Body Leakage Current | I _{GSS} | V _{DS} =0V, V _{GS} =±20V | | | ±100 | nA |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =-250 μA | -1.3 | | -2.3 | V |
| Static Drain-Source On-Resistance | R _{DS(on)} | V _{GS} =-10V, I _D =-4A | | | 68 | mΩ |
| | | V _{GS} =-10V, I _D =-4A, T _J =125°C | | | 95 | |
| | | V _{GS} =-4.5V, I _D =-3A | | | 105 | |
| On State Drain Current | I _{D(ON)} | V _{GS} =-10V, V _{DS} =-5V | -18 | | | A |
| Forward Transconductance | g _{FS} | V _{DS} =-5V, I _D =-4A | | 8 | | S |
| Input Capacitance | C _{iss} | V _{GS} =0V, V _{DS} =-15V, f=1MHz | 230 | | 350 | pF |
| Output Capacitance | C _{oss} | | 40 | | 80 | |
| Reverse Transfer Capacitance | C _{rss} | | 25 | | 55 | |
| Gate Resistance | R _g | V _{GS} =0V, V _{DS} =0V, f=1MHz | 7.5 | | 24 | Ω |
| Total Gate Charge (10V) | Q _g | V _{GS} =-10V, V _{DS} =-15V, I _D =-4A | 4.6 | | 7 | nC |
| Total Gate Charge (4.5V) | | | 2.2 | | 3 | |
| Gate Source Charge | Q _{gs} | | 0.9 | | 1.3 | |
| Gate Drain Charge | Q _{gd} | | 0.8 | | 1.8 | |
| Turn-On DelayTime | t _{d(on)} | | V _{GS} =-10V, V _{DS} =-15V, R _L =3.75Ω, R _{GEN} =3Ω | | 6 | |
| Turn-On Rise Time | t _r | | | 5 | | |
| Turn-Off DelayTime | t _{d(off)} | | | 21 | | |
| Turn-Off Fall Time | t _f | | | 9 | | |
| Body Diode+Schottky Reverse Recovery Time | t _{rr} | I _F = -4A, di/dt= 100A/us | 8 | | 12 | nC |
| Body Diode+Schottky Reverse Recovery Charge | Q _{rr} | | 16 | | 24 | |
| Body-Diode + Schottky Continuous Current | I _S | | | | -2 | A |
| Diode + Schottky Forward Voltage | V _{SD} | I _S = -1A, V _{GS} =0V | | | -1 | V |
| Forward Voltage Drop | V _F | I _F = 1A | | | 0.5 | |
| Maximum reverse leakage current | I _{rm} | V _R =24V | | | 0.05 | mA |
| | | V _R =24V, T _J =125°C | | | 10 | |
| Junction Capacitance | C _T | V _R =15V | | 56 | | pF |

Note. The static characteristics in Figures 1 to 6 are obtained using 300 μs pulses, duty cycle 0.5% max.

■ Marking

| | |
|---------|----------------|
| Marking | 4771 KC**** |
|---------|----------------|

P-Channel MOSFET

AO4771 (KO4771)

■ Typical Characteristics

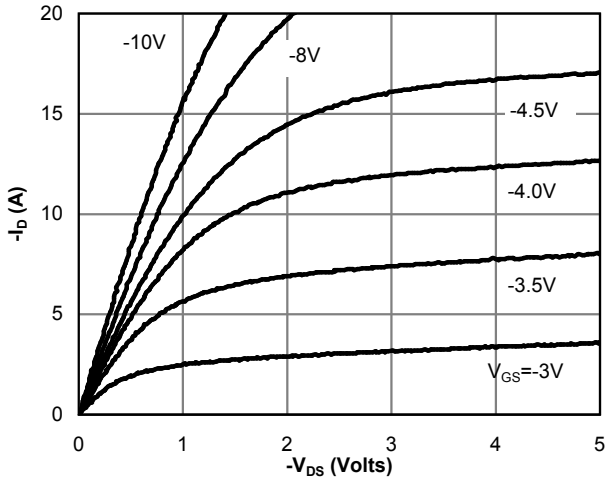


Fig 1: On-Region Characteristics(Note E)

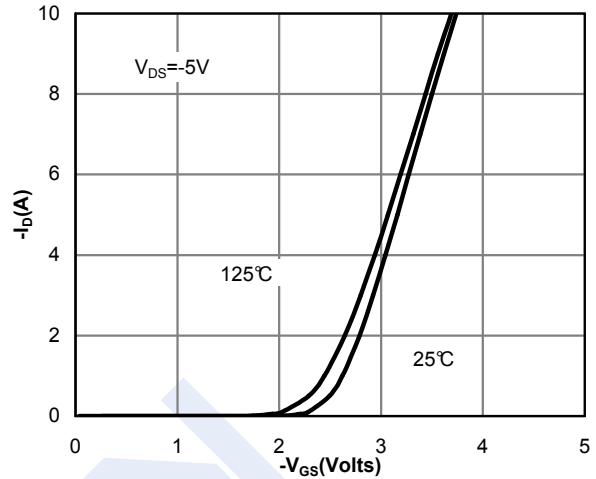


Figure 2: Transfer Characteristics(Note E)

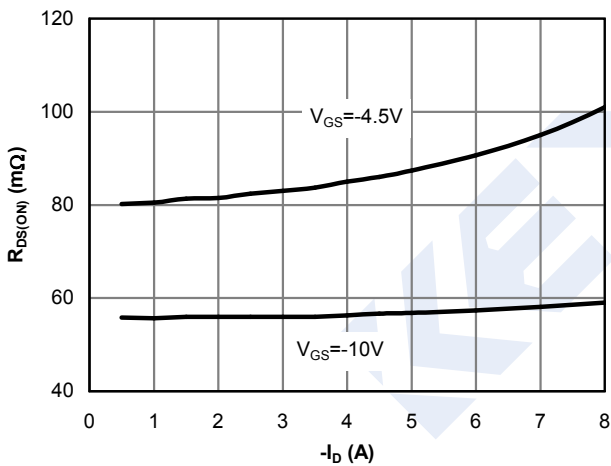


Figure 3: On-Resistance vs. Drain Current and Gate Voltage(Note E)

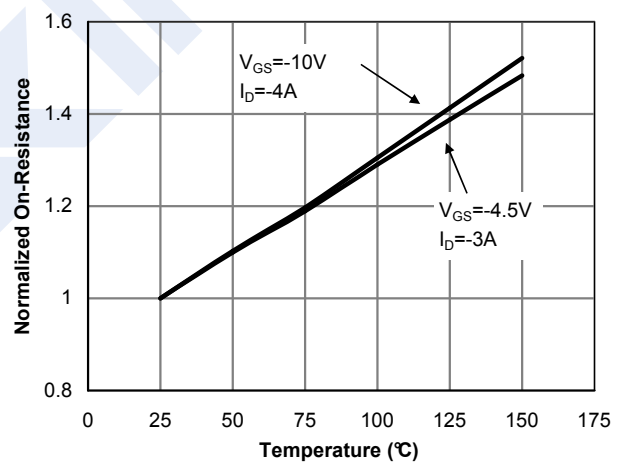


Figure 4: On-Resistance vs. Junction Temperature(Note E)

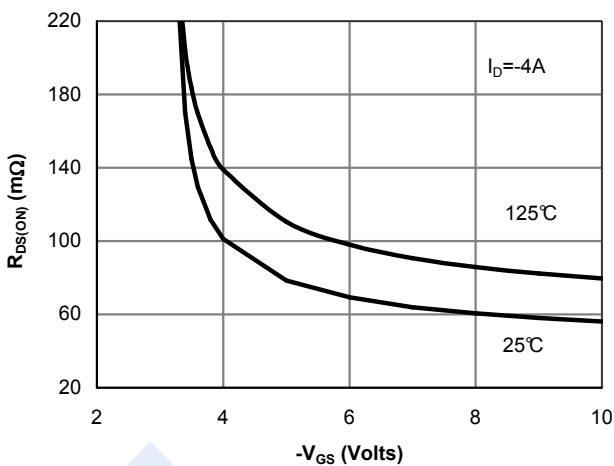


Figure 5: On-Resistance vs. Gate-Source Voltage(Note E)

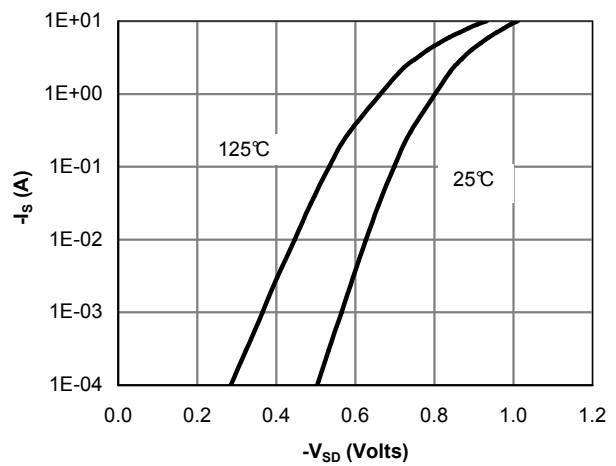


Figure 6: Body-Diode Characteristics(Note E)

P-Channel MOSFET AO4771 (KO4771)

■ Typical Characteristics

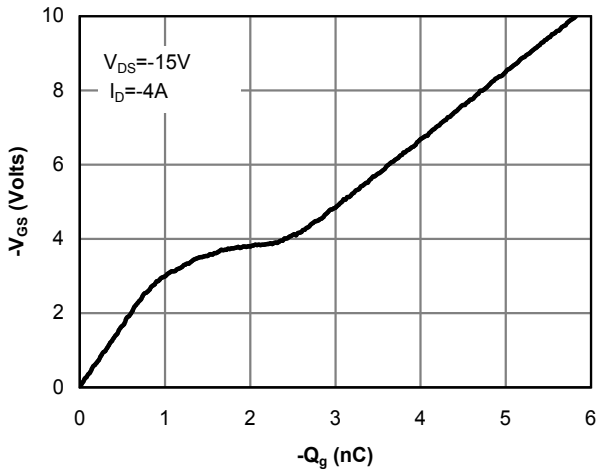


Figure 7: Gate-Charge Characteristics

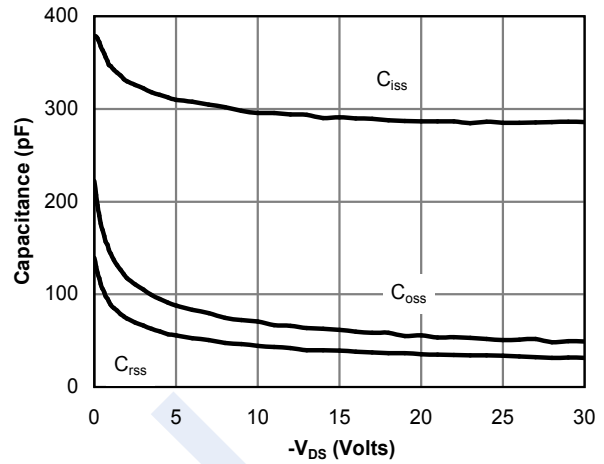


Figure 8: Capacitance Characteristics

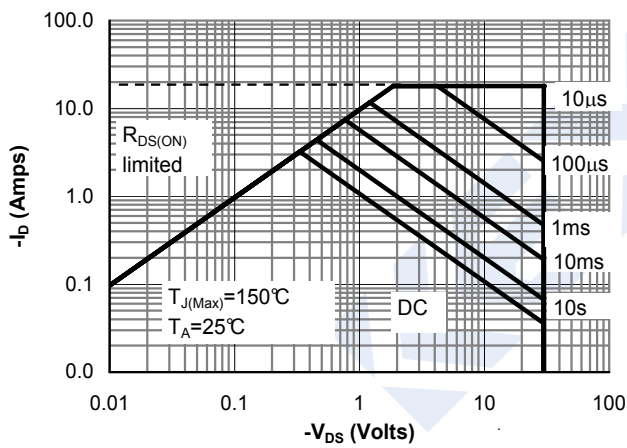


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

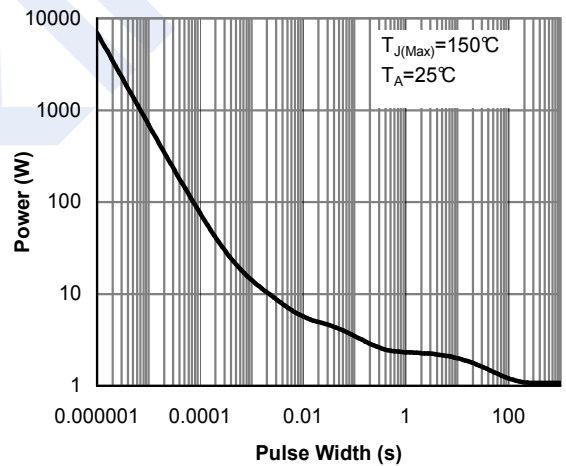


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

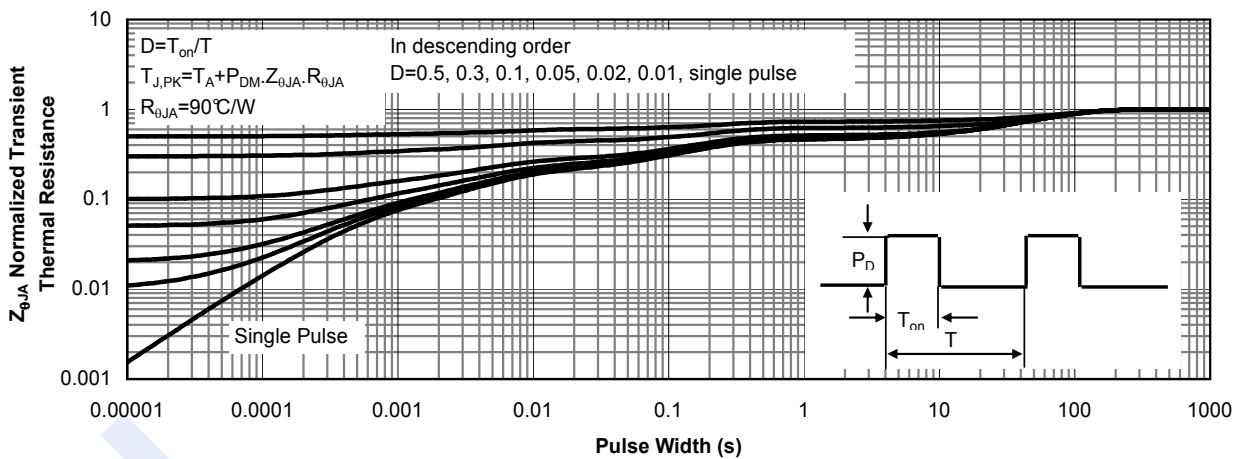


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)

P-Channel MOSFET AO4771 (KO4771)

■ Typical Characteristics

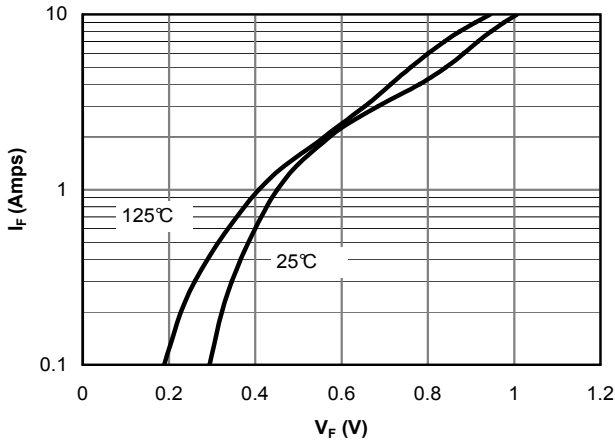


Figure 12: Schottky Forward Characteristics

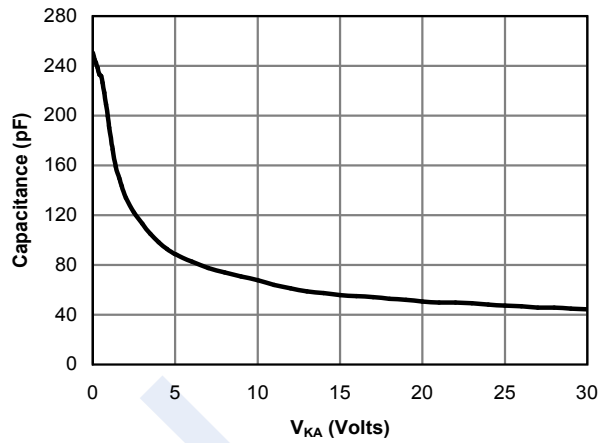


Figure 13: Schottky Capacitance Characteristics

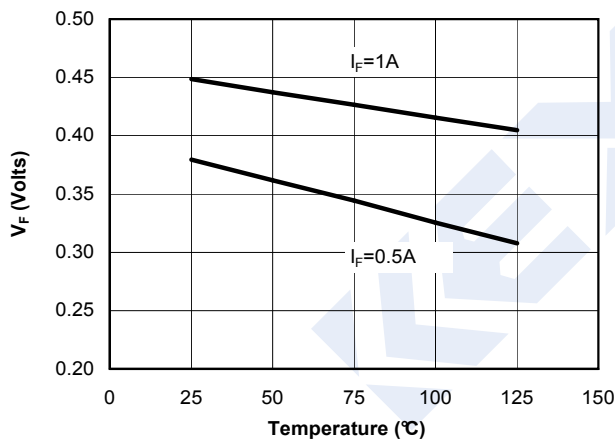


Figure 14: Schottky Forward Drop vs. Junction Temperature

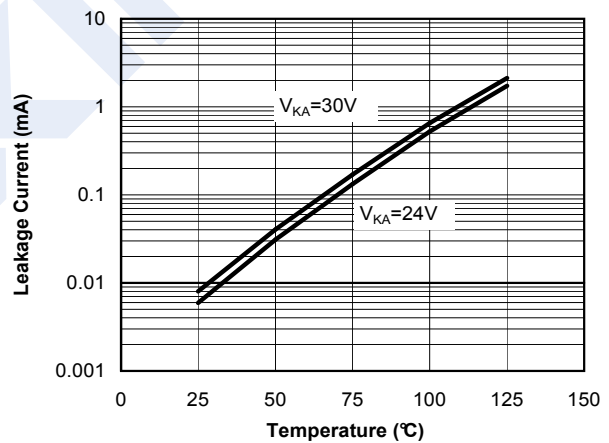


Figure 15: Schottky Leakage Current vs. Junction Temperature