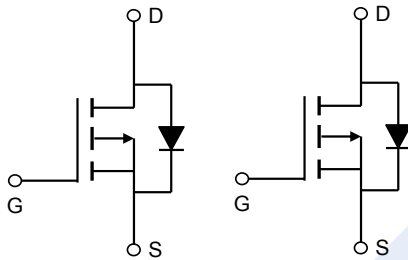
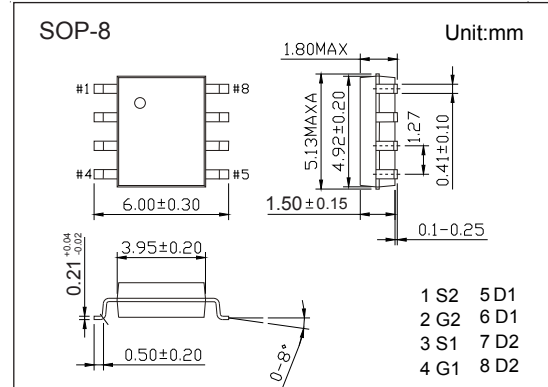


Dual P-Channel MOSFET AO4813-HF (K04813-HF)

Features

- $V_{DS} (V) = -30V$
- $I_D = -7.1 A (V_{GS} = -10V)$
- $R_{DS(ON)} < 25m\Omega (V_{GS} = -10V)$
- $R_{DS(ON)} < 40m\Omega (V_{GS} = -4.5V)$
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



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

| Parameter | Symbol | Rating | Unit | |
|---|------------------|------------------|------------|--------------|
| Drain-Source Voltage | V_{DS} | -30 | V | |
| Gate-Source Voltage | V_{GS} | ± 20 | | |
| Continuous Drain Current | I_D | $T_A=25^\circ C$ | -7.1 | A |
| | | $T_A=70^\circ C$ | -5.6 | |
| Pulsed Drain Current | I_{DM} | -40 | | |
| Avalanche Current | I_{AS}, I_{AR} | -27 | | |
| Avalanche Energy | $L=0.1mH$ | E_{AS}, E_{AR} | 36 | 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 | | |

Dual P-Channel MOSFET

AO4813-HF (KO4813-HF)

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit | |
|---------------------------------------|---------------------|---|-----------------|------|------|------|--|
| Drain-Source Breakdown Voltage | V _{DSS} | 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 =-250μA | -1.5 | | -2.5 | V | |
| Static Drain-Source On-Resistance | R _{DS(on)} | V _{GS} =-10V, I _D =-7.1A | | | 25 | mΩ | |
| | | V _{GS} =-10V, I _D =-7.1A, T _J =125°C | | | 33 | | |
| | | V _{GS} =-4.5V, I _D =-5.6A | | | 40 | | |
| On State Drain Current | I _{D(ON)} | V _{GS} =-10V, V _{DS} =-5V | -40 | | | A | |
| Forward Transconductance | g _{FS} | V _{DS} =-5V, I _D =-7.1A | | 24 | | S | |
| Input Capacitance | C _{iss} | V _{GS} =0V, V _{DS} =-15V, f=1MHz | | 1040 | 1250 | pF | |
| Output Capacitance | C _{oss} | | | 180 | | | |
| Reverse Transfer Capacitance | C _{rss} | | | 125 | 175 | | |
| Gate Resistance | R _g | V _{GS} =0V, V _{DS} =0V, f=1MHz | 2 | | 6 | Ω | |
| Total Gate Charge (10V) | Q _g | V _{GS} =-10V, V _{DS} =-15V, I _D =-7.1A | | 19 | | nC | |
| Total Gate Charge (4.5V) | | | | 9.6 | | | |
| Gate Source Charge | | | Q _{gs} | | 3.6 | | |
| Gate Drain Charge | | | Q _{gd} | | 4.6 | | |
| Turn-On DelayTime | t _{d(on)} | V _{GS} =-10V, V _{DS} =-15V, R _L =2.2Ω, R _{GEN} =3Ω | | 10 | | ns | |
| Turn-On Rise Time | t _r | | | 5.5 | | | |
| Turn-Off DelayTime | t _{d(off)} | | | 26 | | | |
| Turn-Off Fall Time | t _f | | | 9 | | | |
| Body Diode Reverse Recovery Time | t _{rr} | I _F =-7.1A, di/dt= 500A/us | | 11.5 | | nC | |
| Body Diode Reverse Recovery Charge | Q _{rr} | | | 25 | | | |
| Maximum Body-Diode Continuous Current | I _S | | | | -2.5 | A | |
| Diode Forward Voltage | V _{SD} | I _S =-1A, V _{GS} =0V | | | -1 | V | |

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

■ Marking

| | |
|---------|------------------|
| Marking | 4813 KA**** F |
|---------|------------------|

Dual P-Channel MOSFET AO4813-HF (KO4813-HF)

■ Typical Characteristics

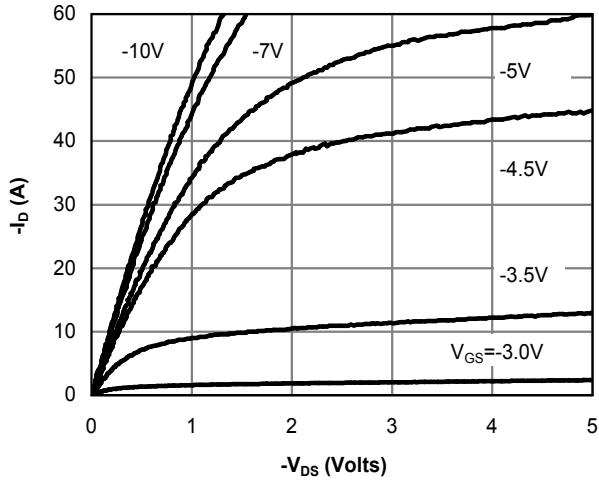


Fig 1: On-Region Characteristics (Note E)

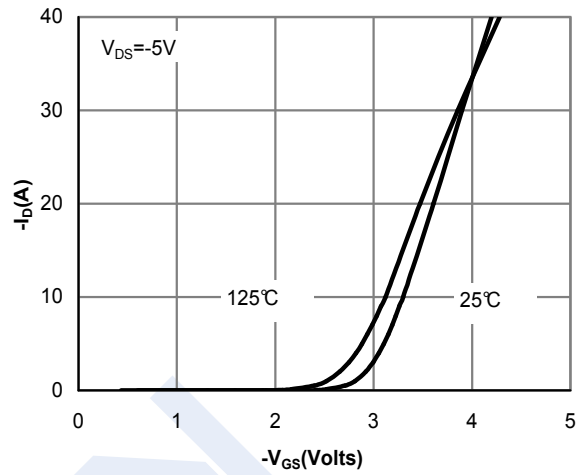


Figure 2: Transfer Characteristics (Note E)

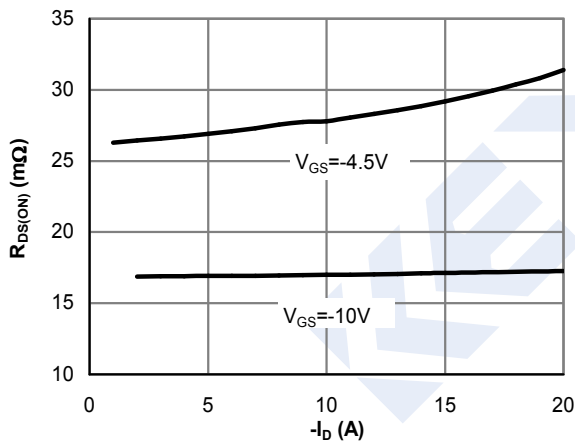


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

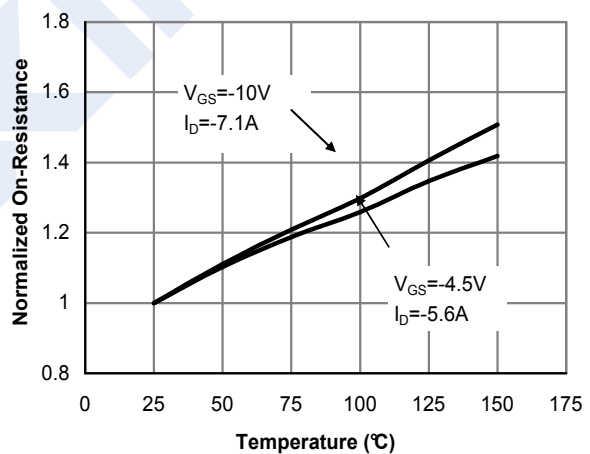


Figure 4: On-Resistance vs. Junction Temperature (Note E)

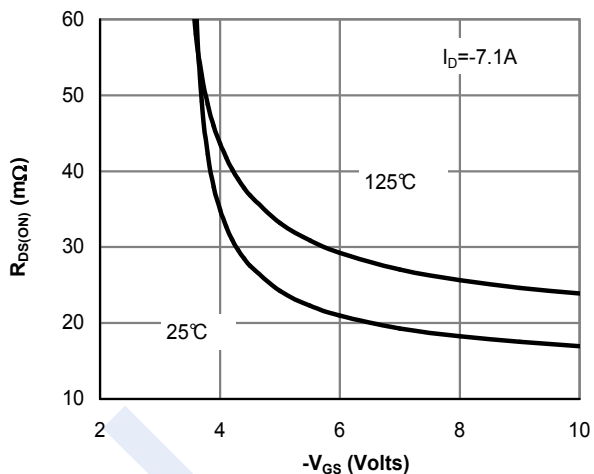


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

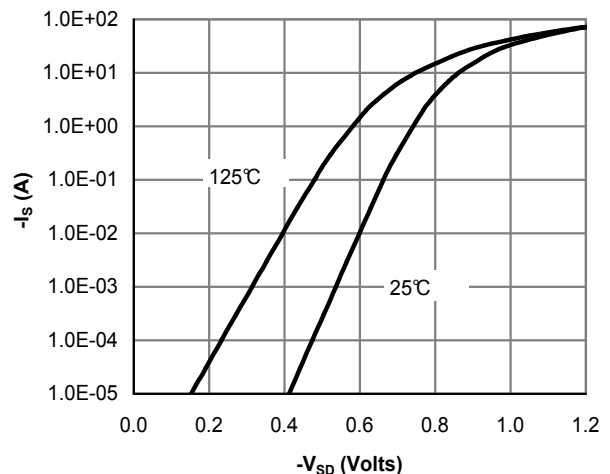


Figure 6: Body-Diode Characteristics (Note E)

Dual P-Channel MOSFET AO4813-HF (KO4813-HF)

■ Typical Characteristics

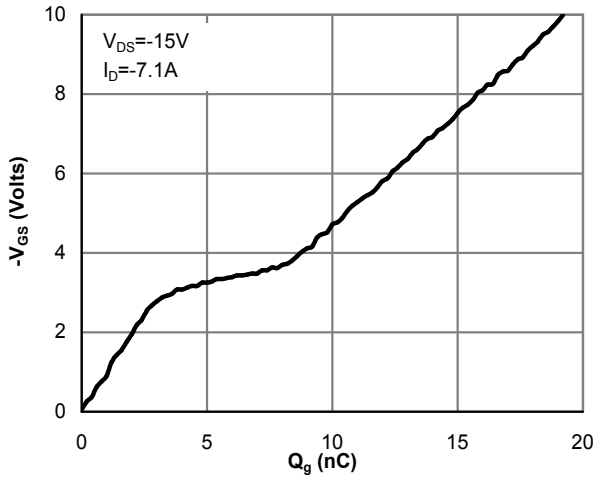


Figure 7: Gate-Charge Characteristics

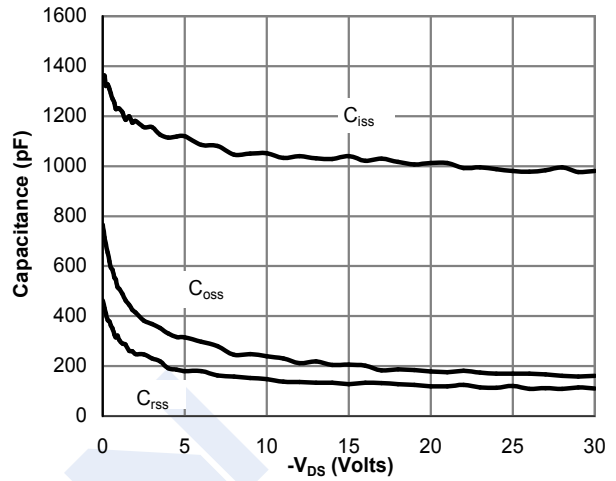


Figure 8: Capacitance Characteristics

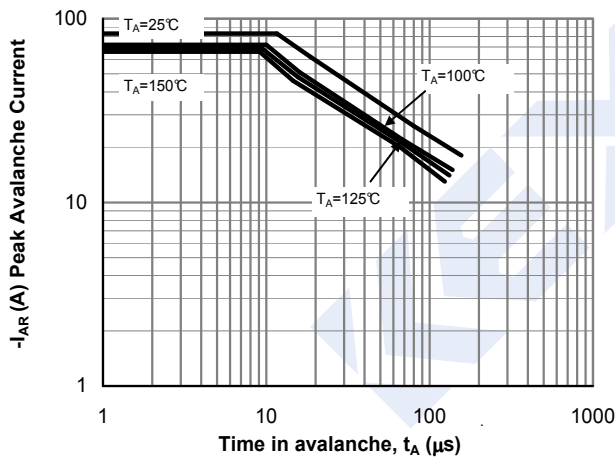


Figure 9: Single Pulse Avalanche capability (Note C)

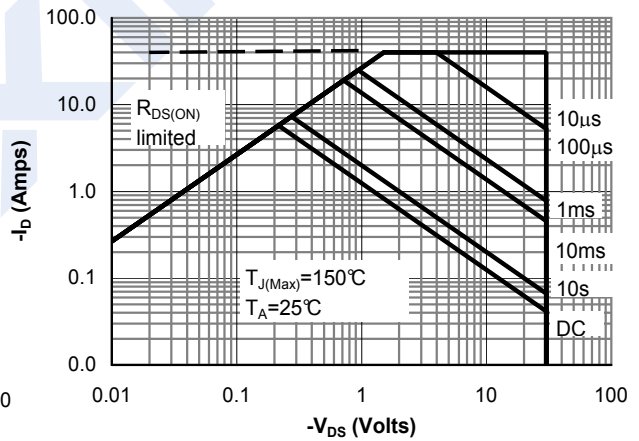


Figure 10: Maximum Forward Biased Safe Operating Area (Note F)



Figure 11: Single Pulse Power Rating Junction-to-Ambient (Note F)

Dual P-Channel MOSFET AO4813-HF (KO4813-HF)

■ Typical Characteristics

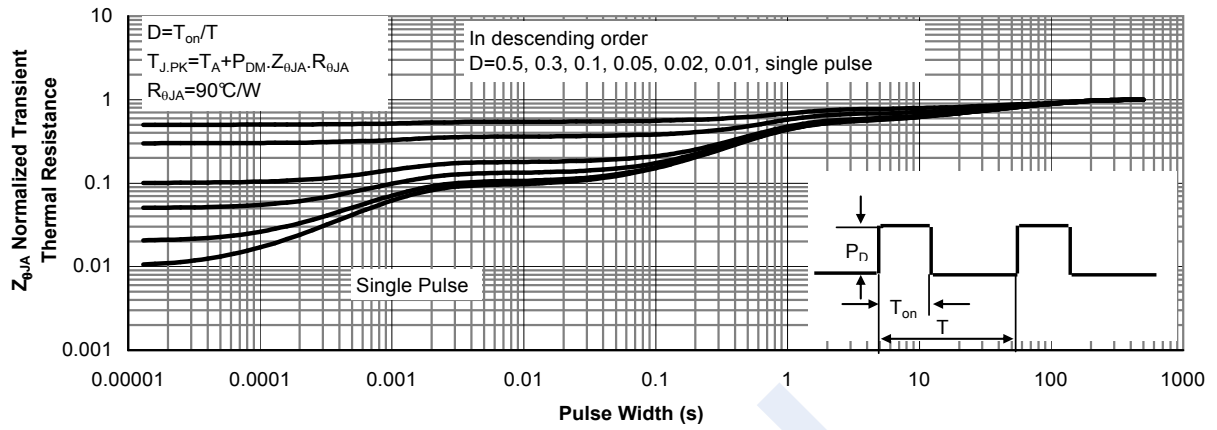


Figure 12: Normalized Maximum Transient Thermal Impedance (Note F)