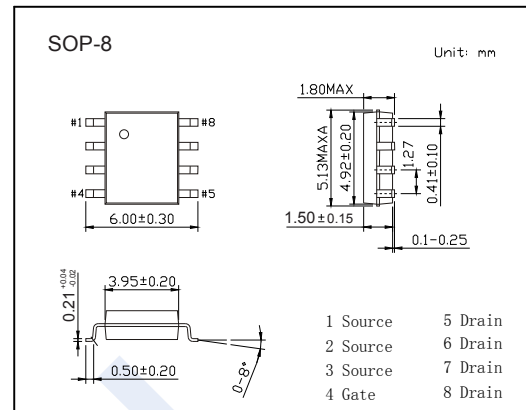
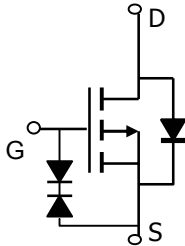


P-Channel MOSFET

AO4427 (KO4427)

■ Features

- $V_{DS} (V) = -30V$
- $I_D = -12.5 A (V_{GS} = -20V)$
- $R_{DS(ON)} < 12m\Omega (V_{GS} = -20V)$
- $R_{DS(ON)} < 14m\Omega (V_{GS} = -10V)$
- ESD Rating: 2000V HBM



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

| Parameter | Symbol | Rating | Unit | |
|---|------------|--------------------|------------|--------------|
| Drain-Source Voltage | V_{DS} | -30 | V | |
| Gate-Source Voltage | V_{GS} | ± 25 | | |
| Continuous Drain Current | I_D | $T_A = 25^\circ C$ | -12.5 | A |
| | | $T_A = 70^\circ C$ | -10.5 | |
| Pulsed Drain Current | I_{DM} | -60 | | |
| Power Dissipation | P_D | $T_A = 25^\circ C$ | 3 | W |
| | | $T_A = 70^\circ C$ | 2.1 | |
| Thermal Resistance.Junction- to-Ambient | R_{thJA} | $t \leq 10s$ | 40 | $^\circ C/W$ |
| | | Steady-State | 75 | |
| Thermal Resistance.Junction- to-Lead | R_{thJL} | 30 | | |
| Junction Temperature | T_J | 150 | $^\circ C$ | |
| Junction Storage Temperature Range | T_{stg} | -55 to 150 | | |

P-Channel MOSFET

AO4427 (KO4427)

■ 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} =-24V, V _{GS} =0V | | | -1 | μA |
| | | V _{DS} =-24V, V _{GS} =0V, T _J =55°C | | | -5 | |
| Gate-Body leakage current | I _{GSS} | V _{DS} =0V, V _{GS} =±25V | | | ±1 | μA |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =-250 μA | -1.7 | | -3 | V |
| Static Drain-Source On-Resistance | R _{DS(on)} | V _{GS} =-20V, I _D =-12.5A | | | 12 | mΩ |
| | | V _{GS} =-20V, I _D =-12.5A, T _J =125°C | | | 15 | |
| | | V _{GS} =-10V, I _D =-10A | | | 14 | |
| | | V _{GS} =-4.5V, I _D =-5A | | 32 | | |
| On state drain current | I _{D(ON)} | V _{GS} =-10V, V _{DS} =-5V | -60 | | | A |
| Forward Transconductance | g _{FS} | V _{DS} =-5V, I _D =-12.5A | | 24 | | S |
| Input Capacitance | C _{iss} | V _{GS} =0V, V _{DS} =-15V, f=1MHz | | 2330 | 2900 | pF |
| Output Capacitance | C _{oss} | | | 480 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 320 | | |
| Gate resistance | R _g | V _{GS} =0V, V _{DS} =0V, f=1MHz | | 6.8 | 10 | Ω |
| Total Gate Charge | Q _g | V _{GS} =-10V, V _{DS} =-15V, I _D =-12.5A | | 41 | 52 | nC |
| Gate Source Charge | Q _{gs} | | | 10 | | |
| Gate Drain Charge | Q _{gd} | | | 12 | | |
| Turn-On DelayTime | t _{d(on)} | V _{GS} =-10V, V _{DS} =-15V, R _L =1.2Ω, R _{GEN} =3Ω | | 12.8 | | ns |
| Turn-On Rise Time | t _r | | | 10.3 | | |
| Turn-Off DelayTime | t _{d(off)} | | | 49.5 | | |
| Turn-Off Fall Time | t _f | | | 29 | | |
| Body Diode Reverse Recovery Time | t _{rr} | I _F =-12.5A, di/dt=100A/us | | 28 | 35 | nC |
| Body Diode Reverse Recovery Charge | Q _{rr} | | | 20 | | |
| Maximum Body-Diode Continuous Current | I _S | | | | -4.2 | 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 <300 μs pulses, duty cycle 0.5% max.

■ Marking

| | |
|---------|----------------|
| Marking | 4427 KC**** |
|---------|----------------|

P-Channel MOSFET AO4427 (KO4427)

■ Typical Characteristics

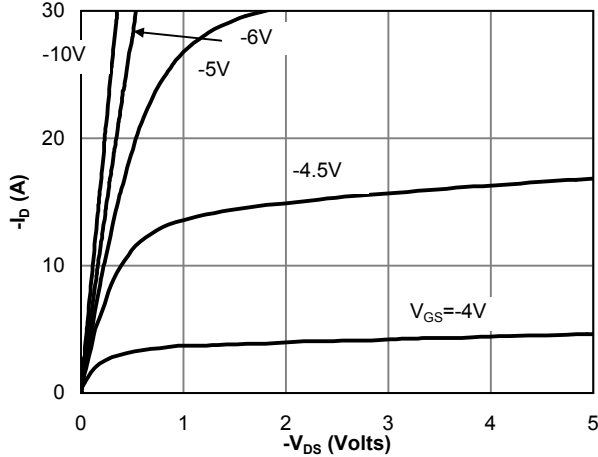


Fig 1: On-Region Characteristics

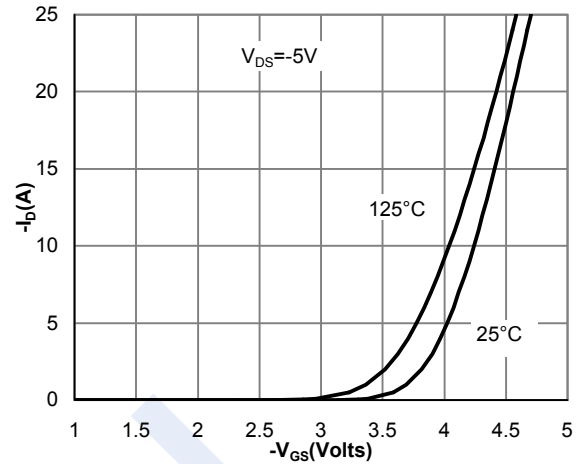


Figure 2: Transfer Characteristics

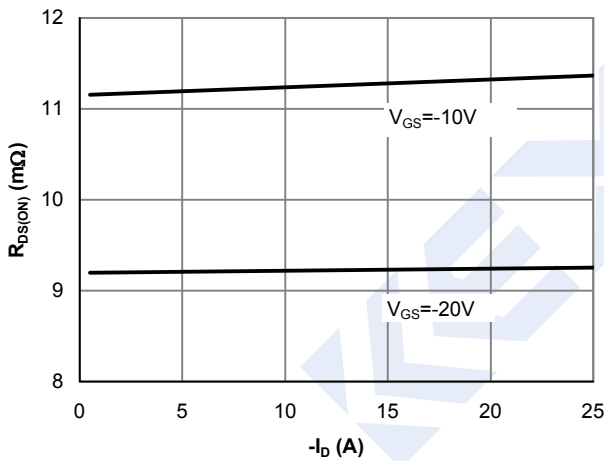


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

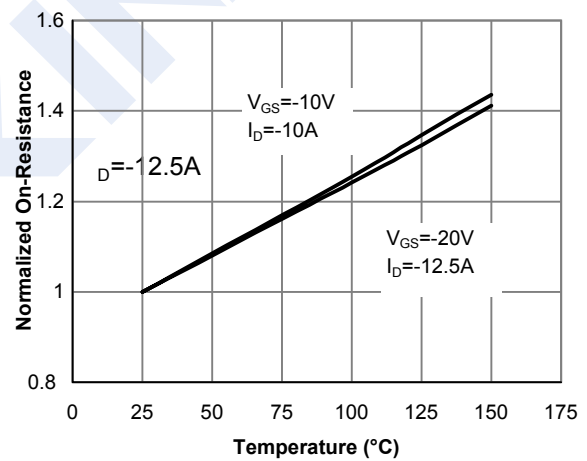


Figure 4: On-Resistance vs. Junction Temperature

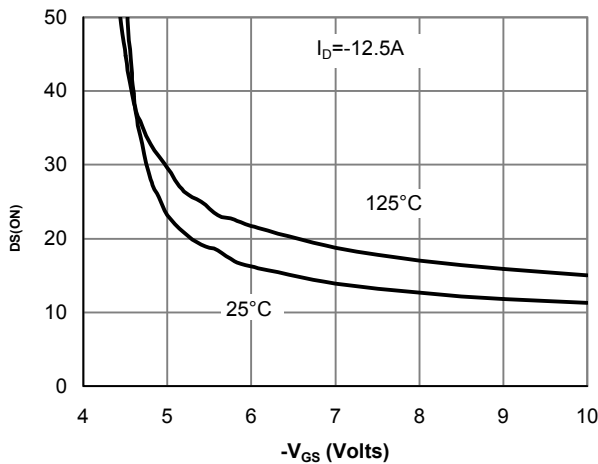


Figure 5: On-Resistance vs. Gate-Source Voltage

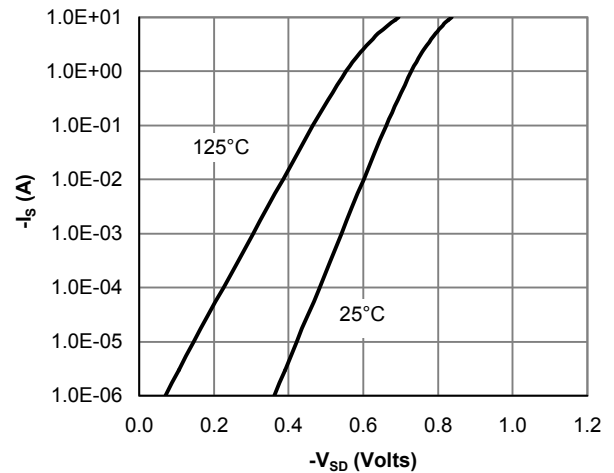


Figure 6: Body-Diode Characteristics

P-Channel MOSFET AO4427 (KO4427)

Typical Characteristics

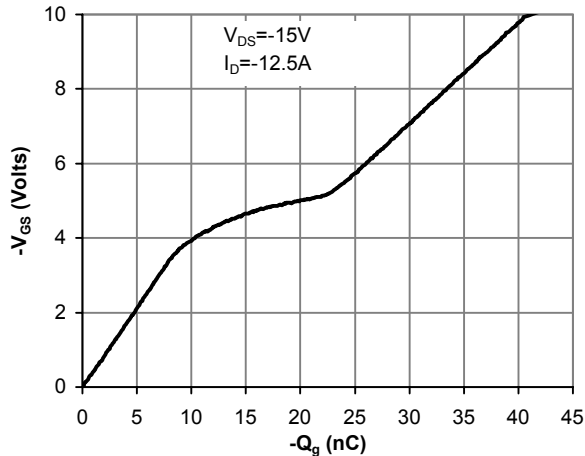


Figure 7: Gate-Charge Characteristics

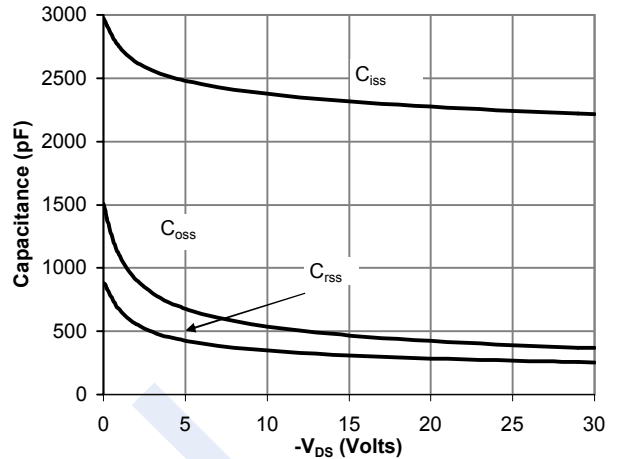


Figure 8: Capacitance Characteristics

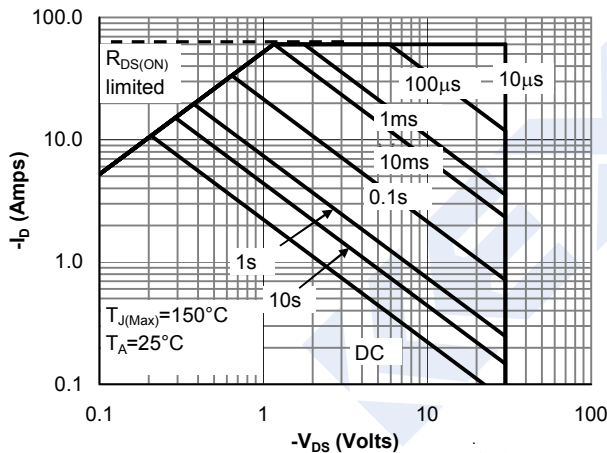


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

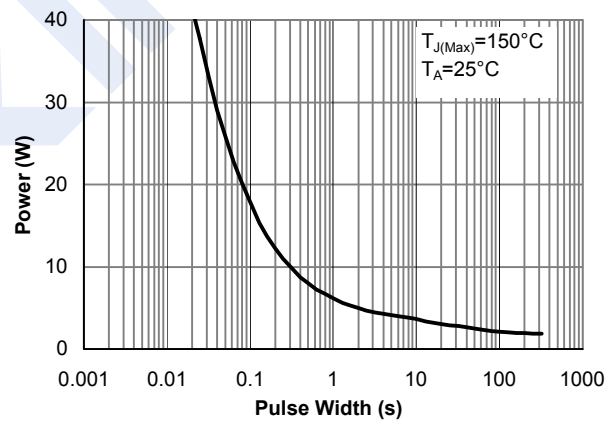


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

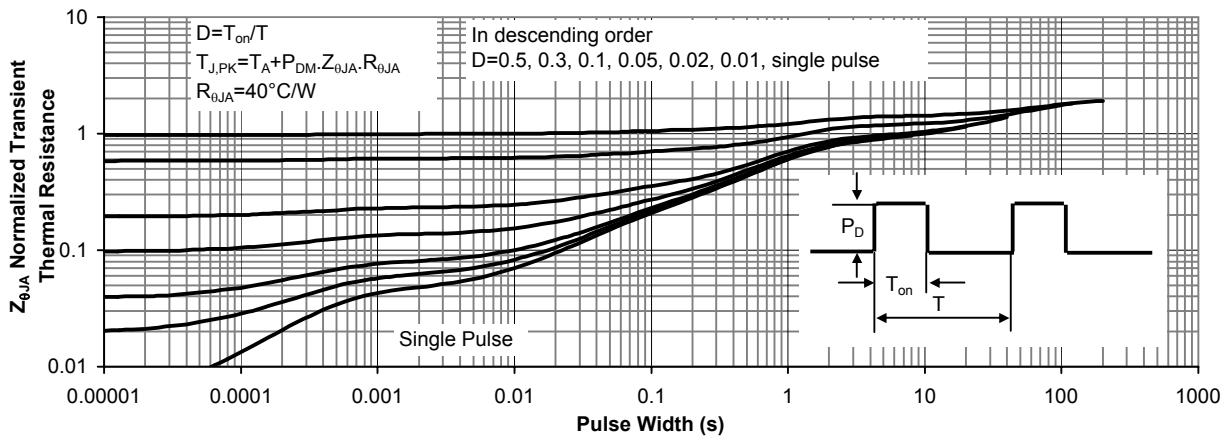


Figure 11: Normalized Maximum Transient Thermal Impedance