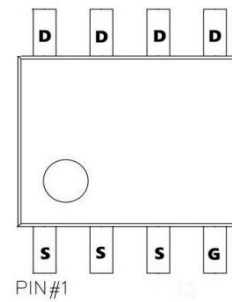
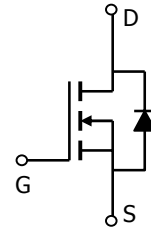


■ Features

- $V_{DS} (V) = 30V$
- $I_D = 18 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 5.5m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 6.2m\Omega (V_{GS} = 4.5V)$



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

| Parameter | Symbol | Rating | Unit | |
|---|------------|------------------|------------|--------------|
| Drain-Source Voltage | V_{DS} | 30 | V | |
| Gate-Source Voltage | V_{GS} | ± 12 | | |
| Continuous Drain Current | I_D | $T_A=25^\circ C$ | 18 | A |
| | | $T_A=70^\circ C$ | 15 | |
| Pulsed Drain Current | I_{DM} | 80 | | |
| Power Dissipation | P_D | $T_A=25^\circ C$ | 3.1 | W |
| | | $T_A=70^\circ C$ | 2 | |
| Thermal Resistance.Junction- to-Ambient | R_{thJA} | $t \leq 10s$ | 40 | $^\circ C/W$ |
| | | Steady-State | 75 | |
| Thermal Resistance.Junction- to-Lead | R_{thL} | 24 | | |
| Junction Temperature | T_J | 150 | $^\circ C$ | |
| Storage Temperature Range | T_{stg} | -55 to 150 | | |

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---------------------------------------|---------------------|--|-----|------|-------|------|
| Drain-Source Breakdown Voltage | V _{DSS} | I _D =250 uA, V _{GS} =0V | 30 | | | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{Ds} =24V, V _{GS} =0V | | | 1 | uA |
| | | V _{Ds} =24V, V _{GS} =0V, T _J =55°C | | | 5 | |
| Gate-Body Leakage Current | I _{GSS} | V _{Ds} =0V, V _{GS} =±12V | | | ±100 | nA |
| Gate Threshold Voltage | V _{GS(th)} | V _{Ds} =V _{GS} , I _D =250uA | 0.8 | | 1.5 | V |
| Static Drain-Source On-Resistance | R _{Ds(on)} | V _{GS} =10V, I _D =18A | | | 5.5 | mΩ |
| | | V _{GS} =10V, I _D =18A T _J =125°C | | | 7.4 | |
| | | V _{GS} =4.5V, I _D =15A | | | 6.2 | |
| On State Drain Current | I _{D(ON)} | V _{GS} =4.5V, V _{Ds} =5V | 80 | | | A |
| Forward Transconductance | g _{FS} | V _{Ds} =5V, I _D =18A | | 102 | | S |
| Input Capacitance | C _{iss} | V _{GS} =0V, V _{Ds} =15V, f=1MHz | | 9130 | 10500 | pF |
| Output Capacitance | C _{oss} | | | 625 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 387 | | |
| Gate Resistance | R _g | V _{GS} =0V, V _{Ds} =0V, f=1MHz | | 0.4 | 0.5 | Ω |
| Total Gate Charge | Q _g | V _{GS} =10V, V _{Ds} =15V, I _D =18A | | 72.4 | 85 | nC |
| Gate Source Charge | Q _{gs} | | | 13.4 | | |
| Gate Drain Charge | Q _{gd} | | | 16.8 | | |
| Turn-On DelayTime | t _{d(on)} | V _{GS} =10V, V _{Ds} =15V, R _L =0.83Ω, R _{GEN} =3Ω | | 11 | 15 | ns |
| Turn-On Rise Time | t _r | | | 7 | 11 | |
| Turn-Off DelayTime | t _{d(off)} | | | 99 | 135 | |
| Turn-Off Fall Time | t _f | | | 13 | 19.5 | |
| Body Diode Reverse Recovery Time | t _{rr} | I _F = 18A, di/dt= 100A/us | | 33 | 40 | nC |
| Body Diode Reverse Recovery Charge | Q _{rr} | | | 22.2 | 30 | |
| Maximum Body-Diode Continuous Current | I _s | | | | 4.5 | 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 <300 μs pulses, duty cycle 0.5% max.

■ Typical Characteristics

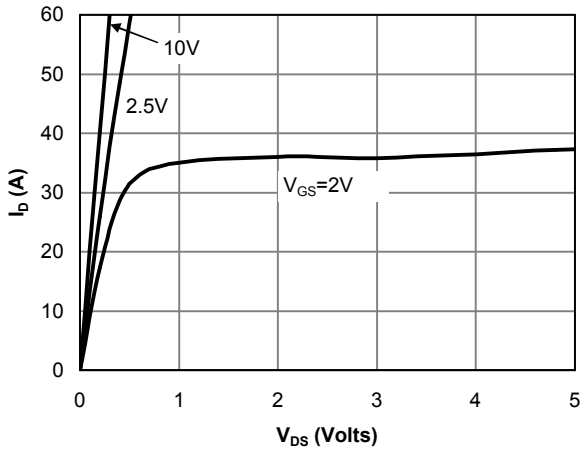


Fig 1: On-Region Characteristics

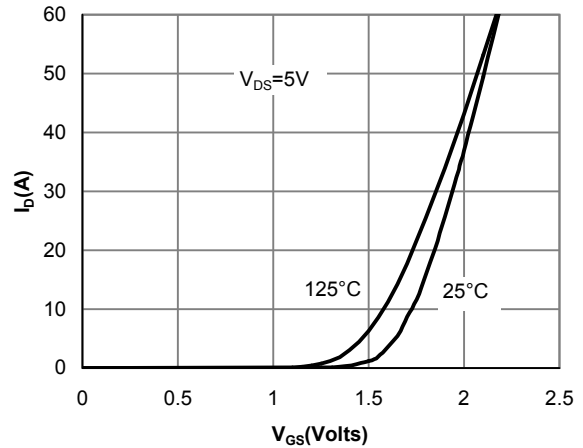


Figure 2: Transfer Characteristics

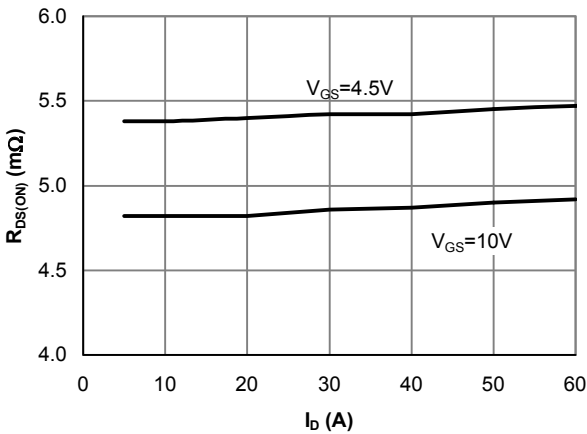


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

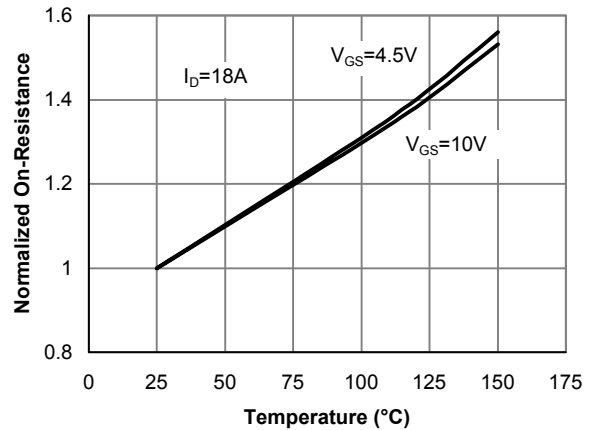


Figure 4: On-Resistance vs. Junction Temperature

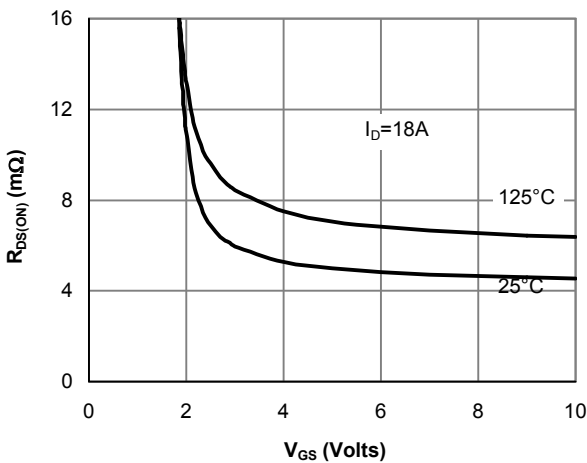


Figure 5: On-Resistance vs. Gate-Source Voltage

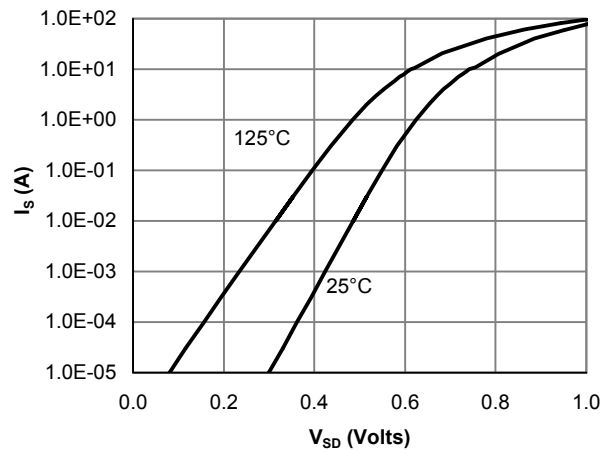


Figure 6: Body-Diode Characteristics

■ Typical Characteristics

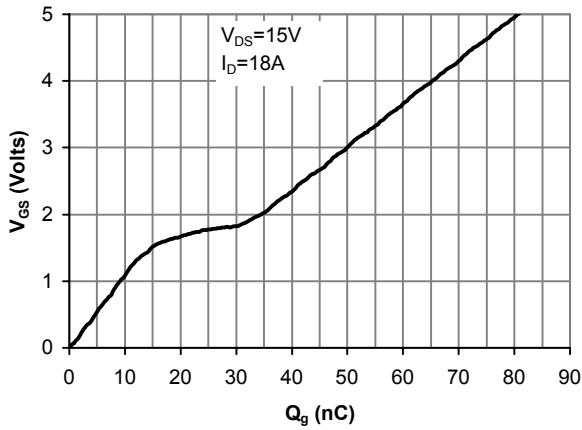


Figure 7: Gate-Charge Characteristics

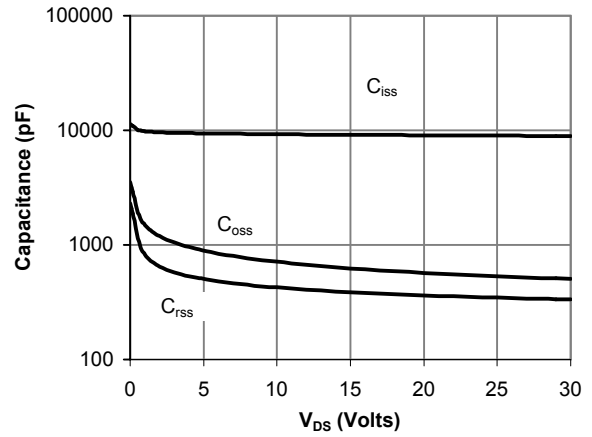


Figure 8: Capacitance Characteristics

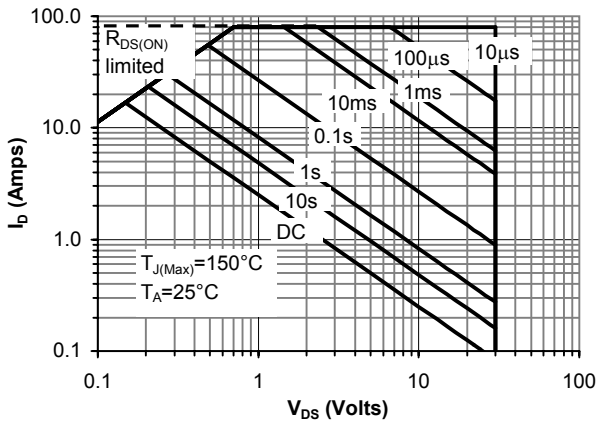


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

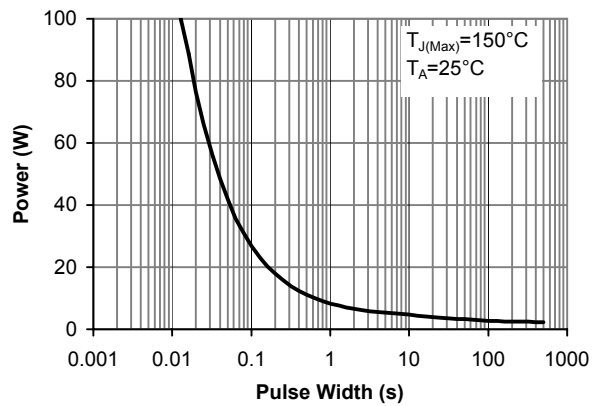


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

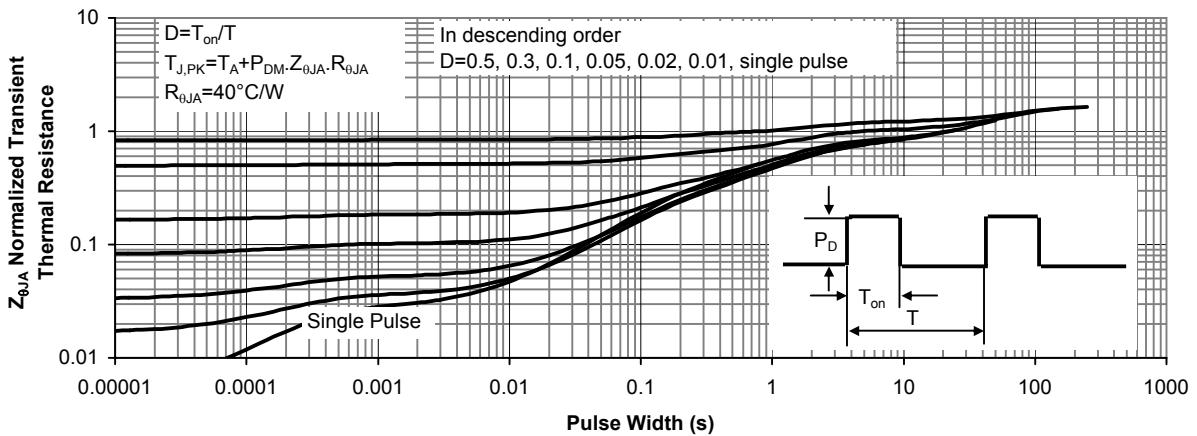
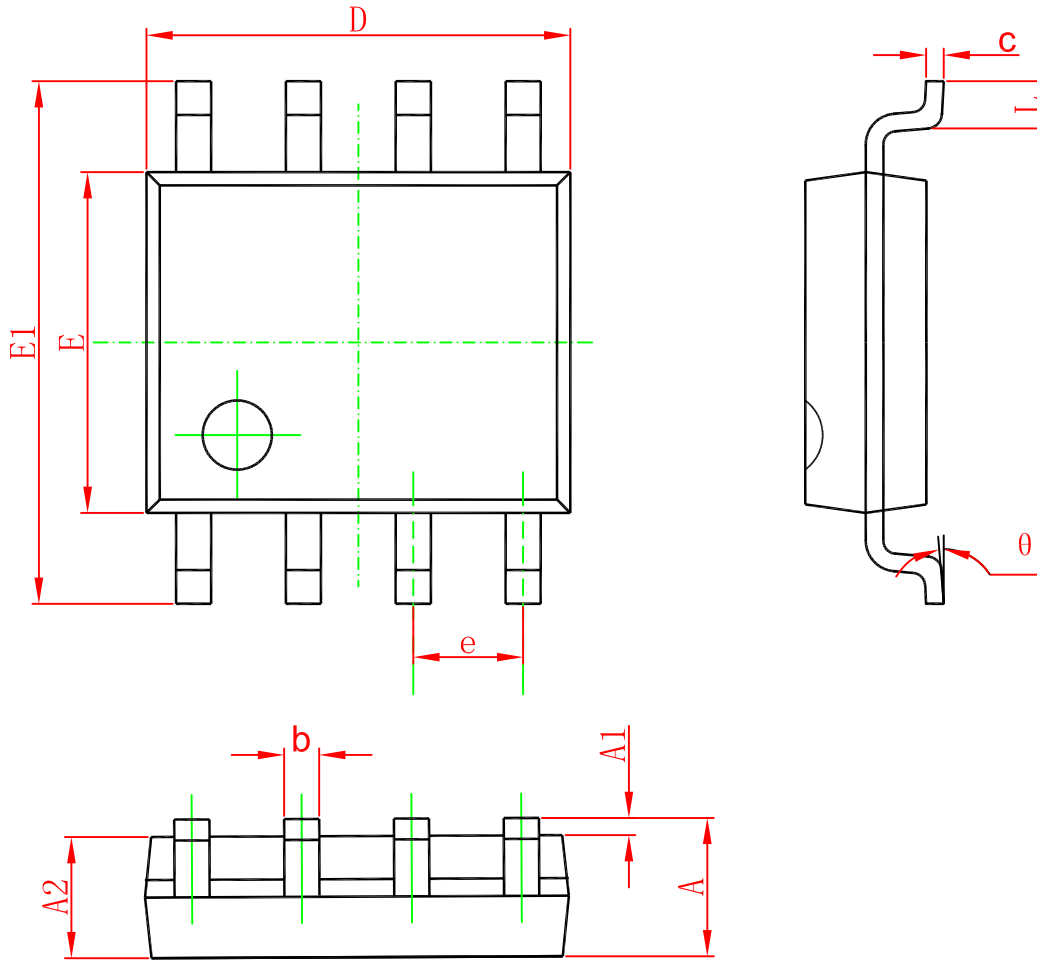


Figure 11: Normalized Maximum Transient Thermal Impedance

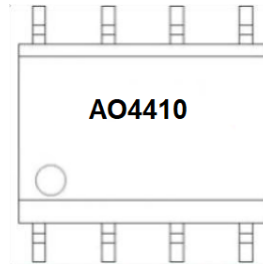
PACKAGE OUTLINE DIMENSIONS

SOP-8



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|----------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 1.350 | 1.750 | 0.053 | 0.069 |
| A1 | 0.100 | 0.250 | 0.004 | 0.010 |
| A2 | 1.350 | 1.550 | 0.053 | 0.061 |
| b | 0.330 | 0.510 | 0.013 | 0.020 |
| c | 0.170 | 0.250 | 0.006 | 0.010 |
| D | 4.700 | 5.100 | 0.185 | 0.200 |
| E | 3.800 | 4.000 | 0.150 | 0.157 |
| E1 | 5.800 | 6.200 | 0.228 | 0.244 |
| e | 1.270(BSC) | | 0.050(BSC) | |
| L | 0.400 | 1.270 | 0.016 | 0.050 |
| θ | 0° | 8° | 0° | 8° |

Marking



Ordering information

| Order code | Package | Baseqty | Deliverymode |
|------------|---------|---------|---------------|
| AO4410 | SOP-8 | 3000 | Tape and reel |