

Absolute Maximum Ratings at $T_j=25$ unless otherwise noted

| Parameter | Symbol | Value | Unit |
|--------------------------------------------------------------|----------------|------------|------|
| Drain-source voltage | V_{DS} | 650 | V |
| Gate-source voltage | V_{GS} | ± 30 | V |
| Continuous drain current ¹⁾ , $T_C=25$ °C | I_D | 12 | A |
| Continuous drain current ¹⁾ , $T_C=100$ °C | | 7.6 | |
| Pulsed drain current ²⁾ , $T_C=25$ °C | $I_{D, pulse}$ | 36 | A |
| Continuous diode forward current ¹⁾ , $T_C=25$ °C | I_S | 12 | A |
| Diode pulsed current ²⁾ , $T_C=25$ °C | $I_{S, pulse}$ | 36 | A |
| Power dissipation ³⁾ , $T_C=25$ °C | P_D | 31 | W |
| Single pulsed avalanche energy ⁵⁾ | E_{AS} | 200 | mJ |
| MOSFET dv/dt ruggedness, V_{DS} | dv/dt | 50 | V/ns |
| Reverse diode dv/dt, V_{DS} | dv/dt | 15 | V/ns |
| Operation and storage temperature | T_{stg}, T_j | -55 to 150 | °C |

Thermal Characteristics

| Parameter | Symbol | Value | Unit |
|----------------------------------------------------|--------|-------|------|
| Thermal resistance, junction-case | R | 4 | °C/W |
| Thermal resistance, junction-ambient ⁴⁾ | R | 62.5 | °C/W |

Electrical Characteristics at $T_j=25$ unless otherwise specified

Dynamic Characteristics

Electrical Characteristics Diagrams

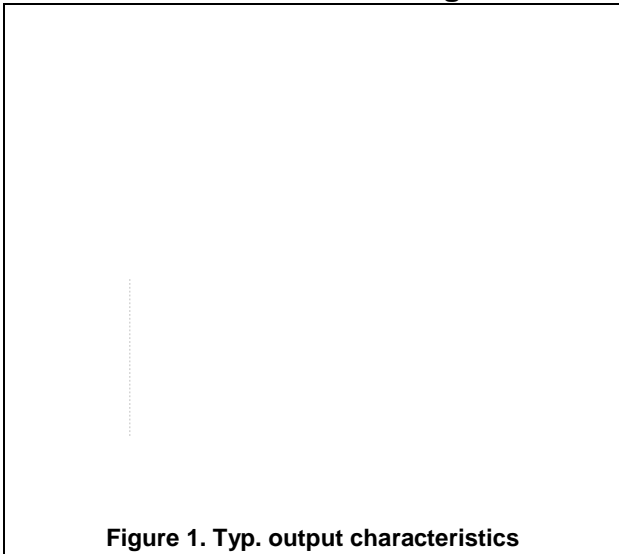


Figure 1. Typ. output characteristics

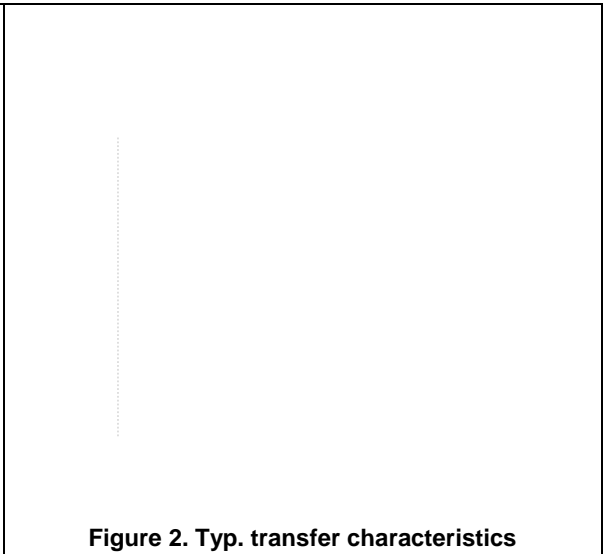


Figure 2. Typ. transfer characteristics

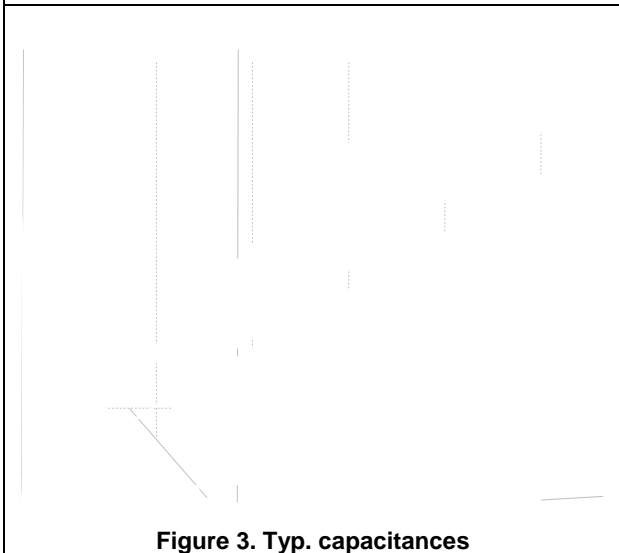


Figure 3. Typ. capacitances

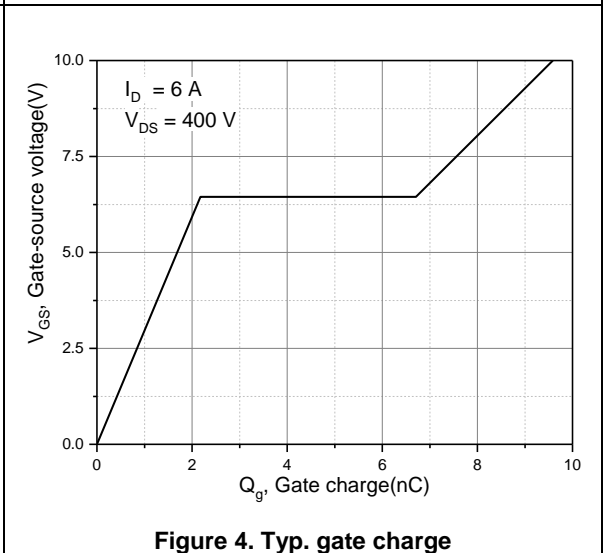


Figure 4. Typ. gate charge

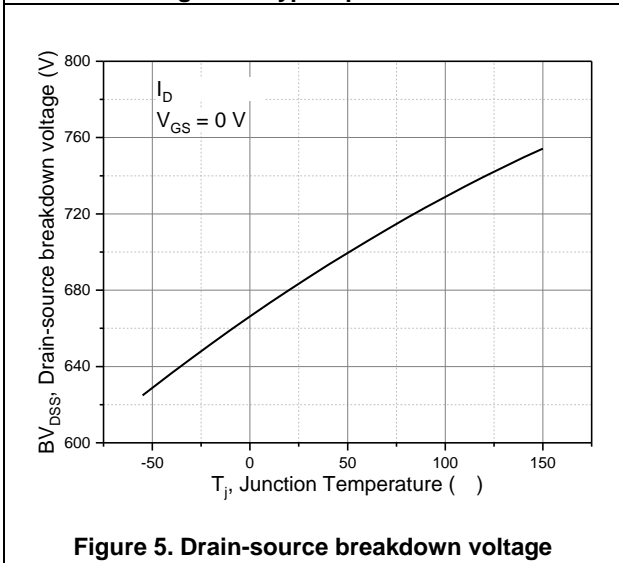


Figure 5. Drain-source breakdown voltage

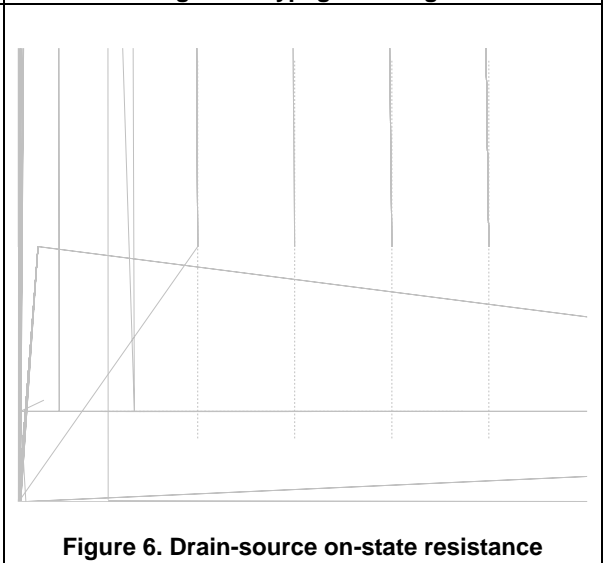


Figure 6. Drain-source on-state resistance

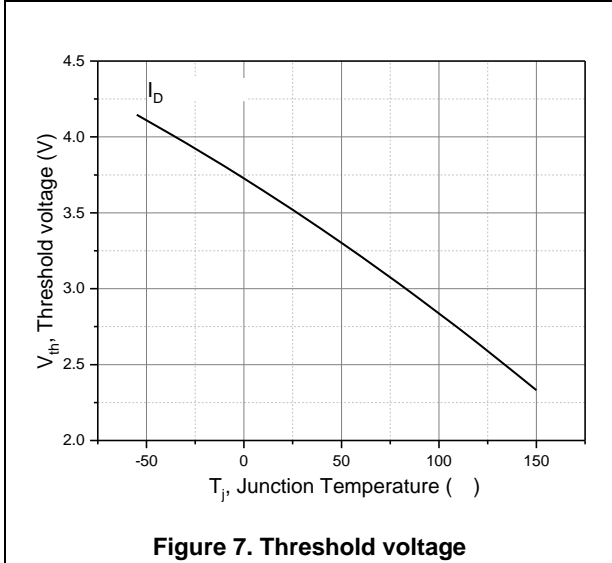


Figure 7. Threshold voltage

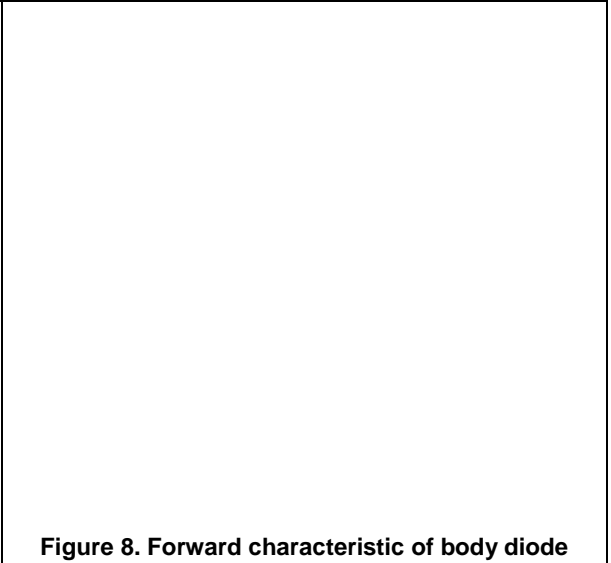


Figure 8. Forward characteristic of body diode

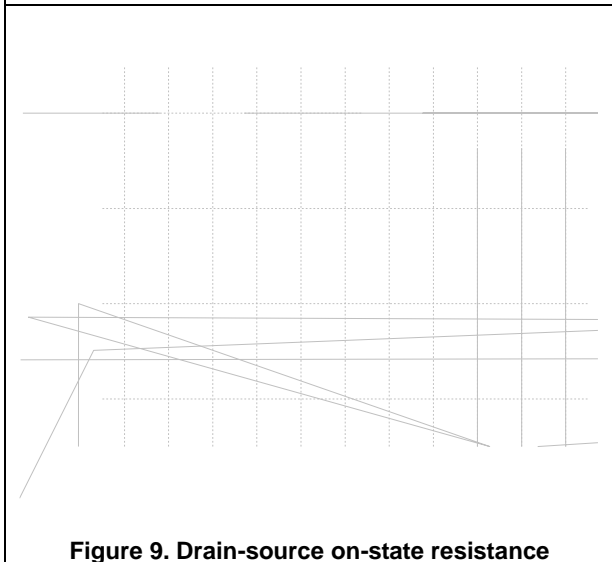


Figure 9. Drain-source on-state resistance

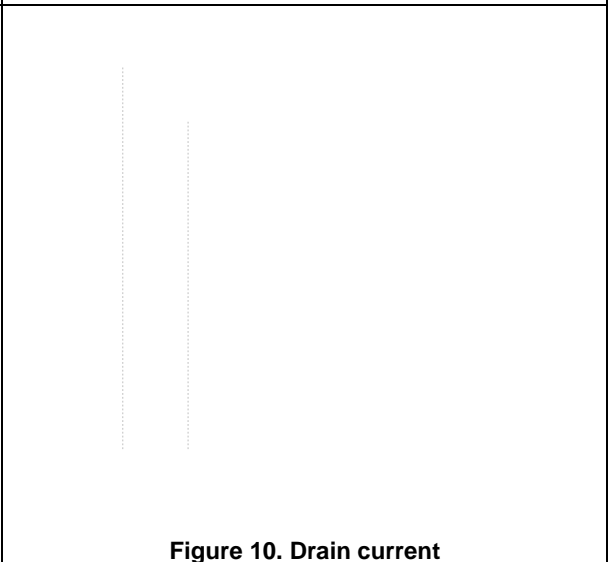


Figure 10. Drain current

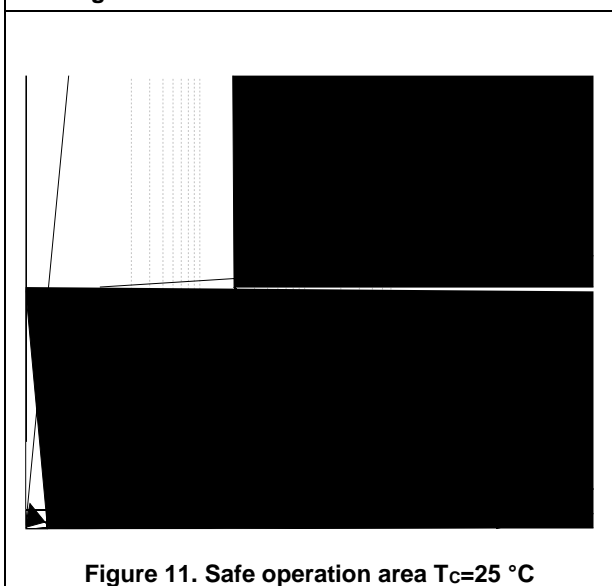
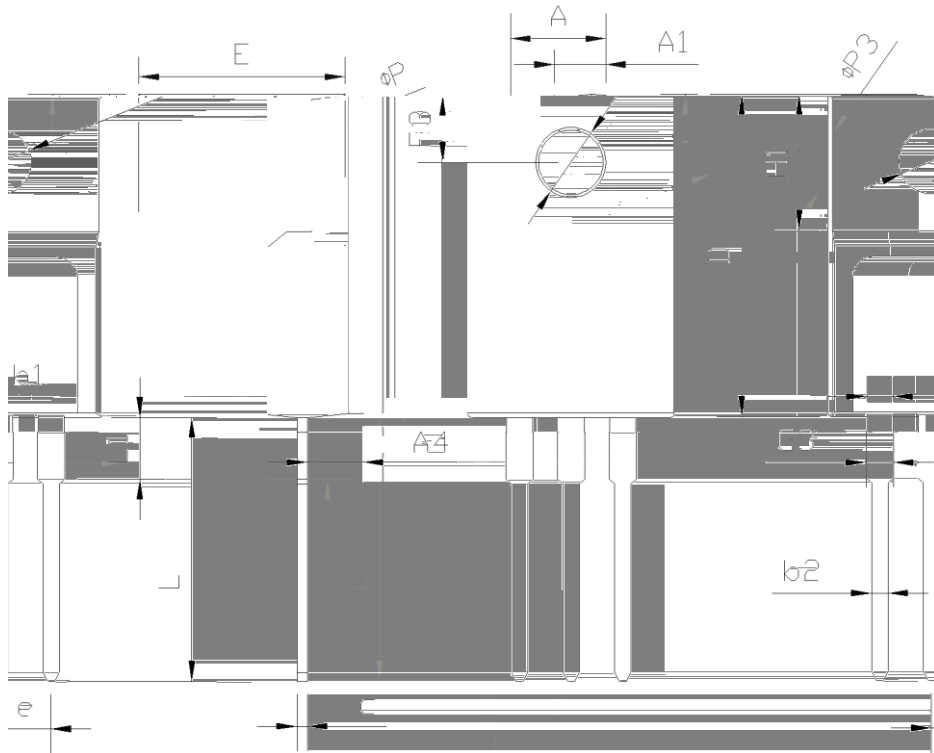


Figure 11. Safe operation area T_c=25 °C

Package Information



| Symbol | mm | | |
|--------|---------|-------|-------|
| | Min | Nom | Max |
| E | 9.96 | 10.16 | 10.36 |
| A | 4.50 | 4.70 | 4.90 |
| A1 | 2.34 | 2.54 | 2.74 |
| A4 | 2.56 | 2.76 | 2.96 |
| c | 0.40 | 0.50 | 0.65 |
| D | 15.57 | 15.87 | 16.17 |
| H1 | 6.70REF | | |
| e | 2.54BSC | | |
| L | 12.68 | 12.98 | 13.28 |
| L1 | 2.88 | 3.03 | 3.18 |
| | 3.03 | 3.18 | 3.38 |
| | 3.15 | 3.45 | 3.65 |
| F3 | 3.15 | 3.30 | 3.45 |
| G3 | 1.25 | 1.35 | 1.55 |
| b1 | 1.18 | 1.28 | 1.43 |
| b2 | 0.70 | 0.80 | 0.95 |

Version 1: TO220F-C package outline dimension

Ordering Information

| Package Type | Units/ Tube | Tubes/ Inner Box | Units/ Inner Box | Inner Boxes/ Carton Box | Units/ Carton Box |
|--------------|-------------|------------------|------------------|-------------------------|-------------------|
| TO220F-C | 50 | 20 | 1000 | 6 | 6000 |

Product Information

| Product | Package | Pb Free | RoHS | Halogen Free |
|-------------|---------|---------|------|--------------|
| OSS65R340FF | TO220F | yes | yes | yes |