

80V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

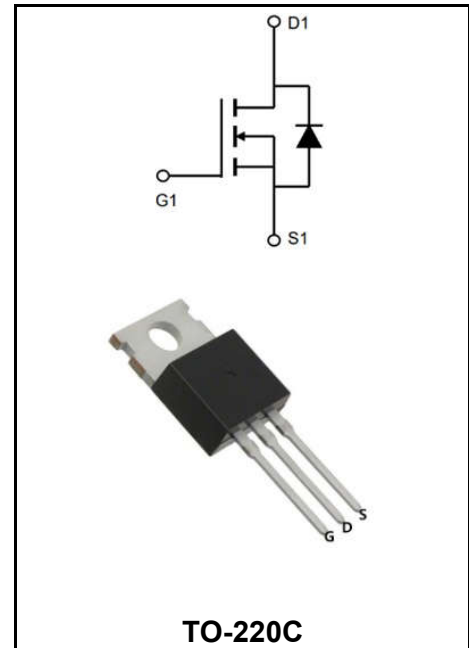
| | |
|--|---------------------|
| I_D | 100A |
| V_{DSS} | 80V |
| R_{DS(on)-typ(@V_{GS}=10V)} | <6.5mΩ (Type:5.8mΩ) |

Features

- ◆Fast Switching
- ◆Low ON Resistance
- ◆Low Gate Charge
- ◆100% Single Pulse avalanche energy Test
- ◆LeadfreeincomplywithEUroHS2011/65/EUdirectives

Mechanical Data

- ◆Case: Molded plastic
- ◆Mounting Position: Any
- ◆Molded Plastic: UL Flammability Classification Rating 94V-0
- ◆Solder bath temperature275℃ maximum,10s per JESD22-106



Product Specification Classification

| Part Number | Package | Marking | Pack |
|-------------|---------|--------------------|--------------|
| YFW100N08AC | TO-220C | YFW 100N08AC XXXXX | 1000PCS/Tape |

Maximum Ratings at Tc=25℃ unless otherwise specified

| Characteristics | Symbols | Value | Units |
|---|------------------------|-------------|------------|
| Drain-Source Voltage | V_{DS} | 80 | V |
| Gate-Source Voltage | V_{GS} | ±20 | V |
| Continue Drain Current | I_D | 100 | A |
| Pulsed Drain Current (Note1) | I_{DM} | 400 | A |
| Power Dissipation | P_D | 158 | W |
| Single Pulse Avalanche Energy (Note5) | E_{AS} | 506 | mJ |
| Operating Temperature Range | T_J | 150 | ℃ |
| Storage Temperature Range | T_{STG} | -55 to +150 | ℃ |
| Thermal Resistance, Junction to Case (Note 2) | R_{θJC} | 0.73 | ℃/W |
| Thermal Resistance, Junction to Ambient | R_{θJA} | 92 | ℃/W |

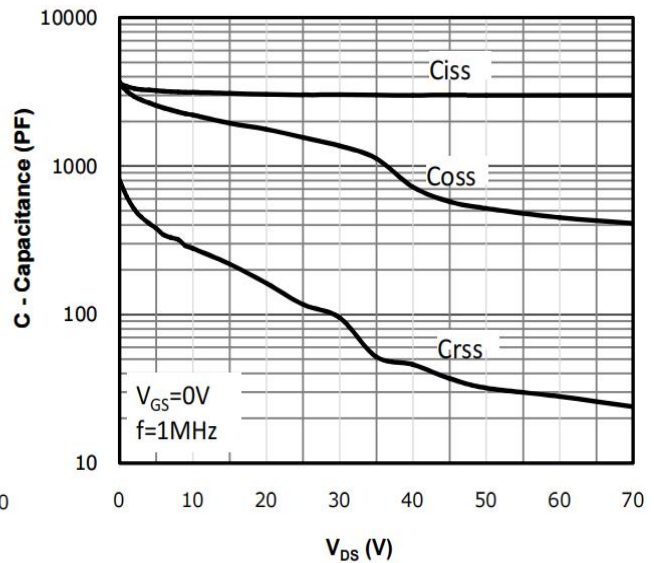
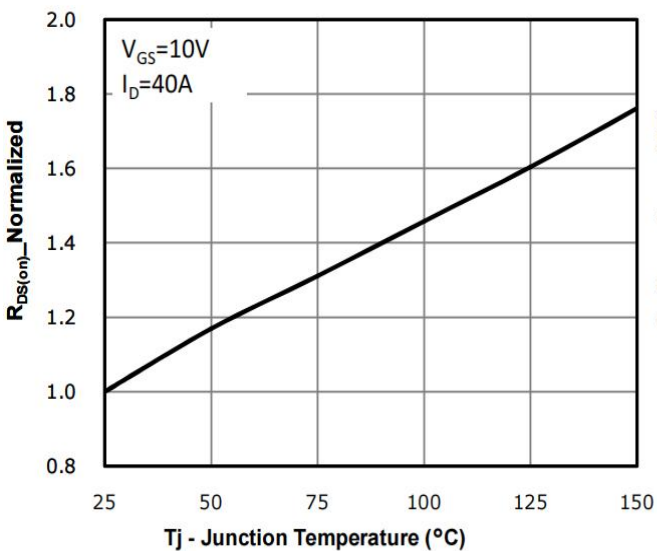
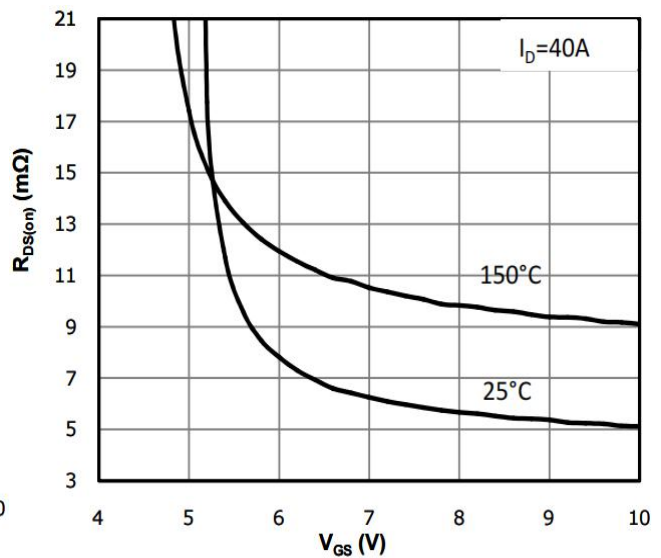
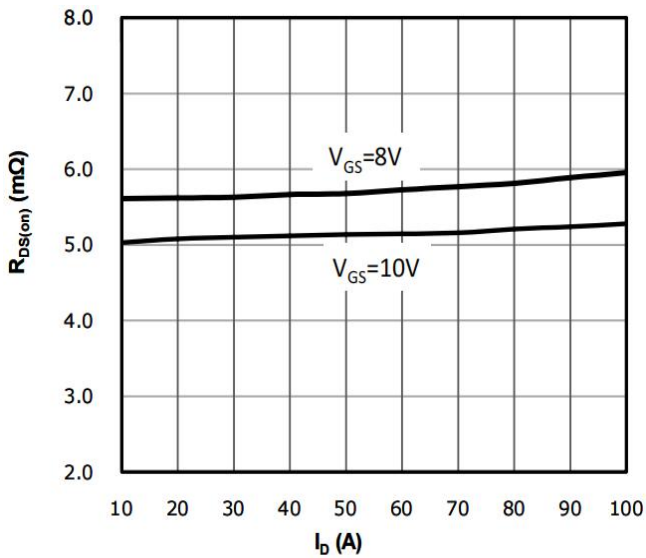
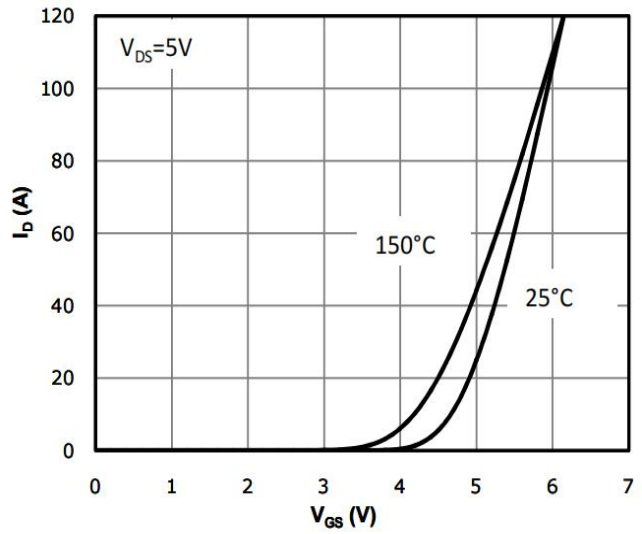
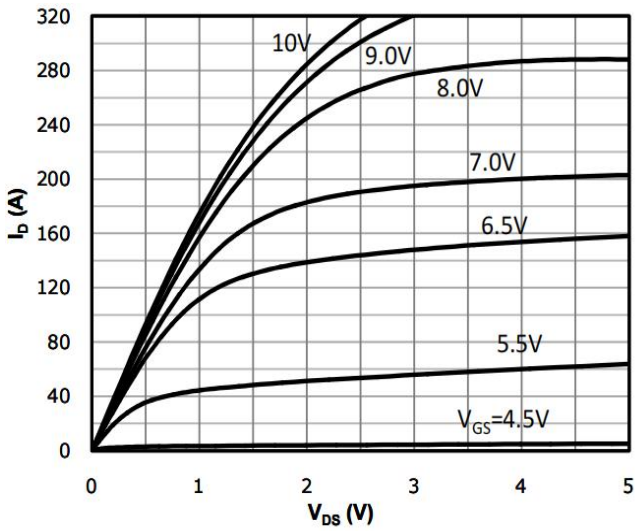
Maximum Ratings at Tc=25°C unless otherwise specified

| Characteristics | Test Condition | Symbols | Min | Typ | Max | Units |
|----------------------------------|---|--------------|-----|------|-----------|-----------|
| Drain-Source Breakdown Voltage | $V_{GS} = 0\text{ V}, I_D = 250\ \mu\text{A}$ | BV_{DSS} | 80 | - | - | V |
| Drain-Source Leakage Current | $V_{DS} = 80\text{ V}, V_{GS} = 0\text{ V}$ | I_{DSS} | - | - | 1 | uA |
| | $V_{DS} = 80\text{ V}, T_c = 125^\circ\text{C}$ | | - | - | 100 | |
| Gate Leakage Current | $V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$ | I_{GSS} | - | - | ± 100 | nA |
| Gate-Source Threshold Voltage | $V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$ | $V_{GS(th)}$ | 2 | - | 4 | V |
| Drain-Source On-State Resistance | $V_{GS} = 10\text{ V}, I_D = 40\text{ A}$ | $R_{DS(on)}$ | - | 5.8 | 6.5 | mΩ |
| Forward Transconductance | $V_{DS} = 5\text{ V}, I_D = 40\text{ A}$ | g_{fs} | - | 90 | - | S |
| Input Capacitance | $V_{GS} = 0\text{ V}, V_{DS} = 40\text{ V}, f = 1\text{ MHz}$ | C_{iss} | - | 3400 | - | pF |
| Output Capacitance | | C_{oss} | - | 770 | - | |
| Reverse Transfer Capacitance | | C_{rss} | - | 25 | - | |
| Turn-on Delay Time | $V_{DD} = 40\text{ V}, V_{DS} = 10\text{ V}, R_G = 2.7\ \Omega$ | $td(ON)$ | - | 15.2 | - | nS |
| Rise Time | | tr | - | 35 | - | |
| Turn-Off Delay Time | | $td(OFF)$ | - | 36.7 | - | |
| Fall Time | | tf | - | 18.1 | - | |
| Total Gate Charge | $V_{DS} = 40\text{ V}, I_D = 40\text{ A}, V_{GS} = 10\text{ V}, f = 1\text{ MHz}$ | Q_G | - | 46.6 | - | nC |
| Gate to Source Charge | | Q_{GS} | - | 19.4 | - | |
| Gate to Drain Charge | | Q_{GD} | - | 10.2 | - | |

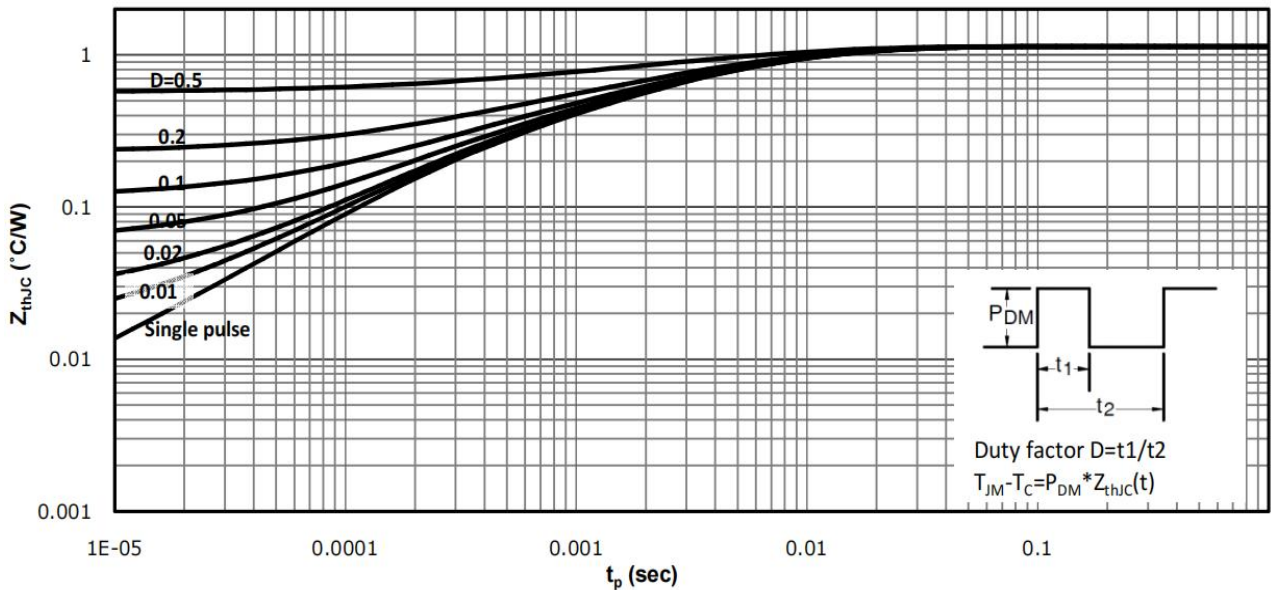
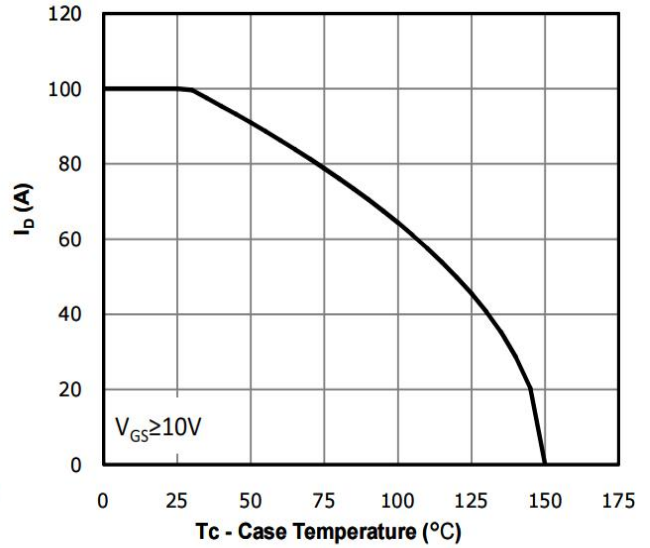
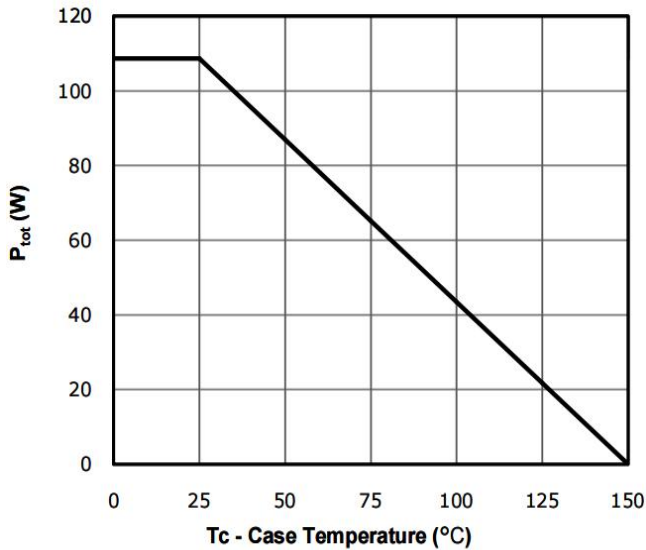
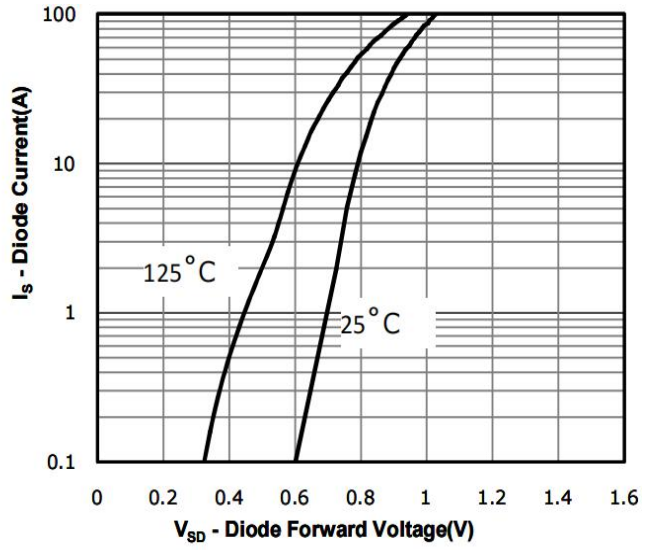
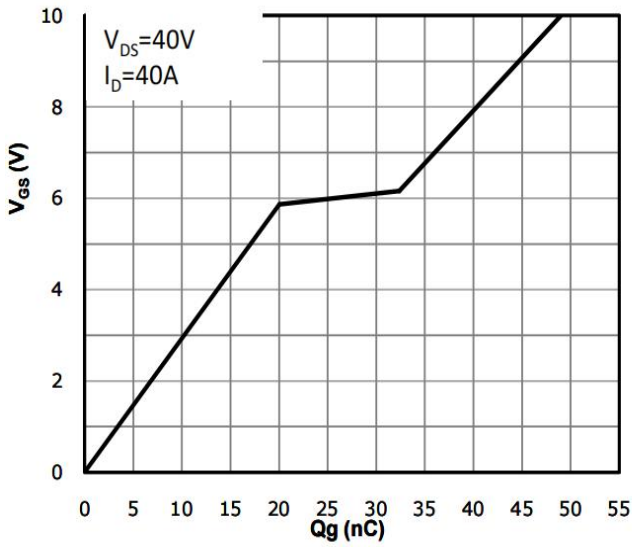
Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

| Characteristics | Test Condition | Symbols | Min | Typ | Max | Units |
|---------------------------------------|--|----------|-----|------|-----|-----------|
| Maximun Body-Diode Continuous Current | | I_S | - | - | 100 | A |
| Drain-Source Diode Forward Voltage | $I_{SD} = 100\text{ A}$ | V_{SD} | - | - | 1.3 | V |
| Reverse Recovery Time | $I_S = I_F, I_{SD} = 40\text{ A}, V_{GS} = 0\text{ V}, di_F / dt = 100\text{ A}/\mu\text{s}$ | trr | - | 46.3 | - | nS |
| Reverse Recovery Charge | | Q_{rr} | - | 59.1 | - | uC |

Ratings and characteristic Curves



Ratings and Characteristic Curves



Package Outline Dimensions millimeters

TO-220C

| Dim. | Min. | Max. |
|------------------------------|--------------|-------|
| A | 9.8 | 10.2 |
| A2 | 4.8 | 5.2 |
| C | 4.35 | 4.65 |
| C1 | 1.45 | 1.05 |
| D | 0.65 | 0.95 |
| E | 3.45 | 3.75 |
| F | 2.85 | 3.15 |
| G | 6.4 | 6.8 |
| H | 0.35 | 0.65 |
| J | 28.68 | 28.98 |
| K | 2.8 | 3.2 |
| M | 1.15 | 1.45 |
| N | Typical 2.54 | |
| P | 2.2 | 2.6 |
| Q | 9 | 9.4 |
| S | 0.15 | 0.35 |
| U | 2.65 | 2.95 |
| DIA | 宽1.50±0.10 | |
| | 深0.50 MAX | |
| All Dimensions in millimeter | | |