

Product Summary

| $V_{(BR)DSS}$ | $R_{DS(on)TYP}$ | I_D |
|---------------|-----------------|-------|
| 80V | 3.8mΩ@10V | 130A |

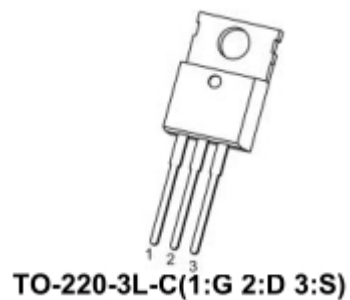
Feature

- Fast Switching
- Low Gate Charge and Rdson
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

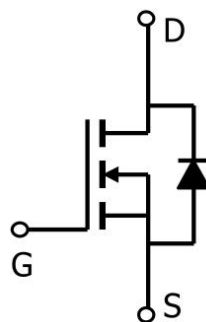
Applications

- Power switching application
- DC-DC Converter
- Uninterruptible power supply

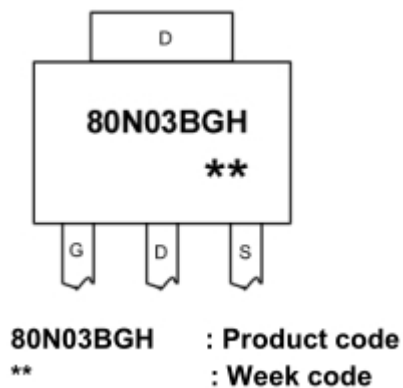
Package



Circuit diagram



Marking



Absolute maximum ratings

(T_a=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|-----------------------------------|------------|------|
| Drain source voltage | V _{DS} | 80 | V |
| Gate source voltage | V _{GS} | ±20 | V |
| Continuous drain current(Tc=25°C) | I _D | 130 | A |
| Pulsed drain current | I _{DM} | 520 | A |
| Power dissipation(Tc=25°C) | P _D | 160 | W |
| Single pulsed avalanche energy ¹⁾ | E _{AS} | 625 | mJ |
| Thermal resistance, junction-case | R _{θJC} | 0.78 | °C/W |
| Operation and storage temperature | T _J , T _{STG} | -55 to 150 | °C |

Electrical characteristics

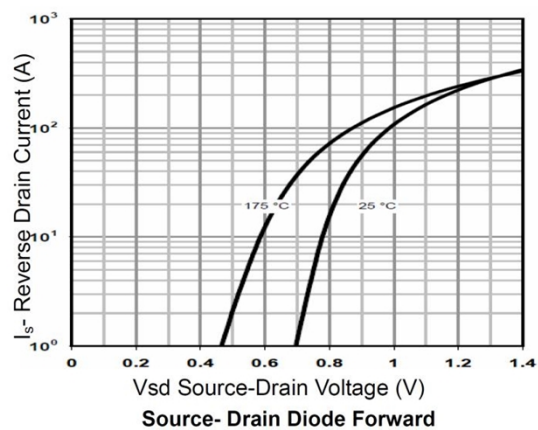
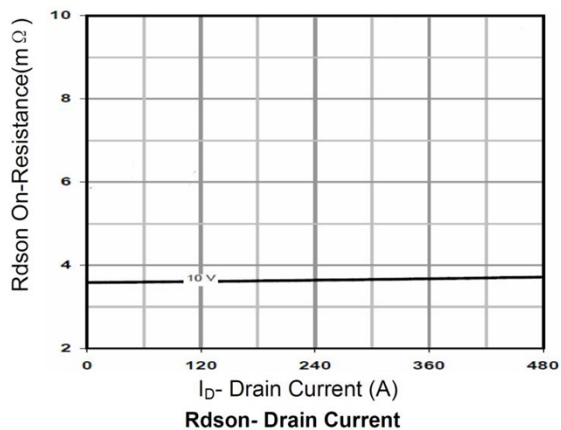
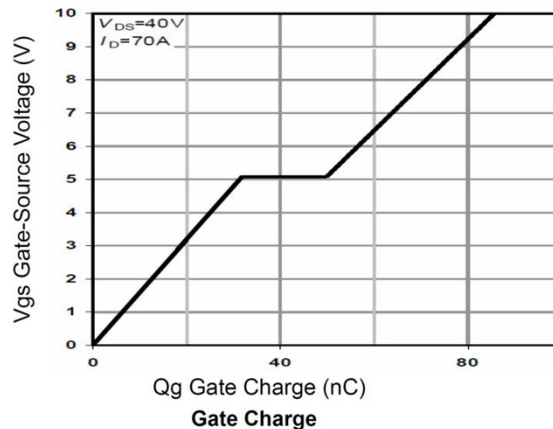
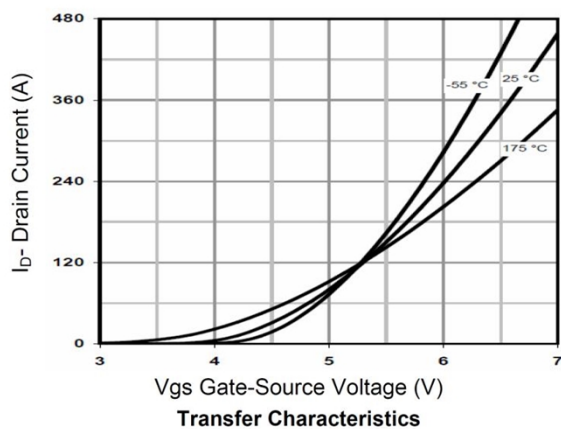
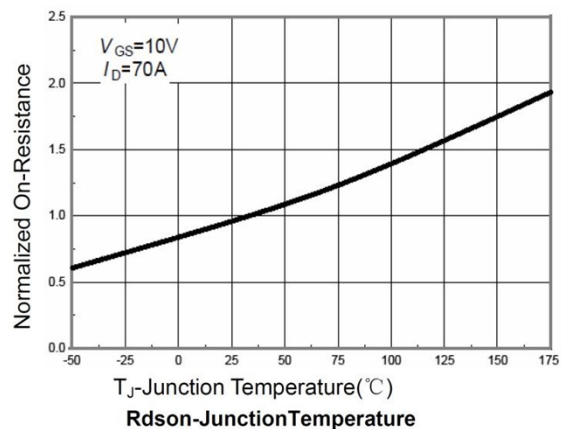
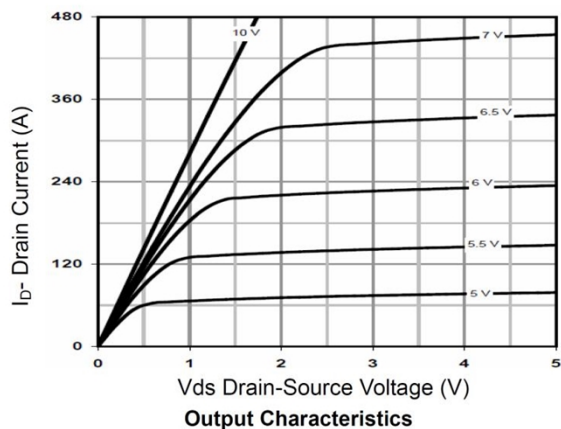
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

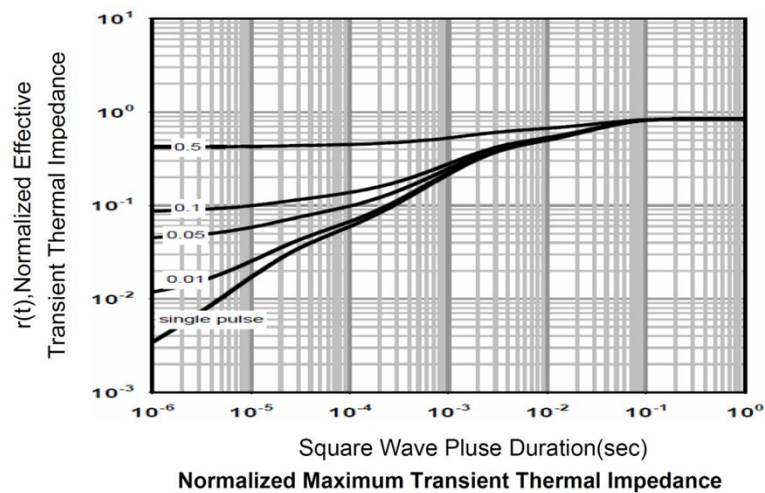
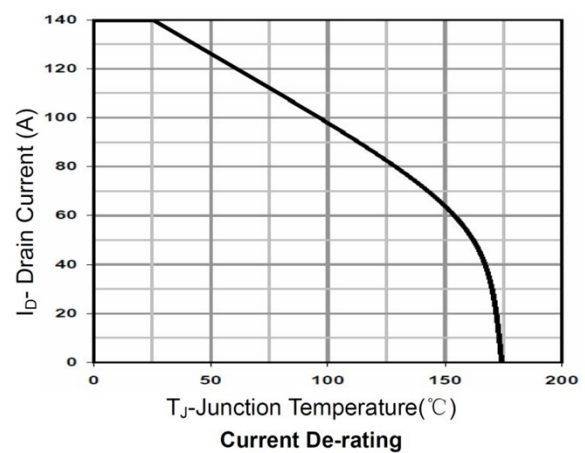
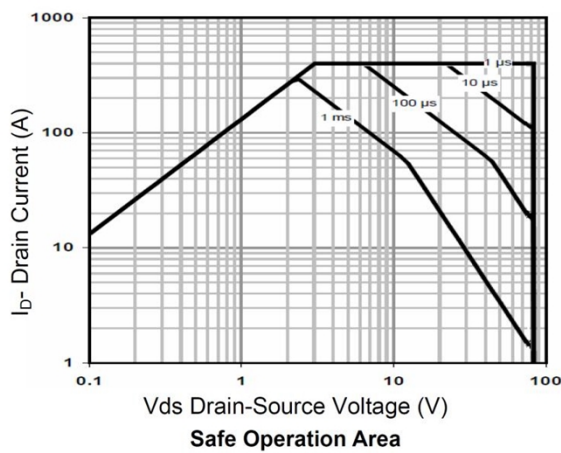
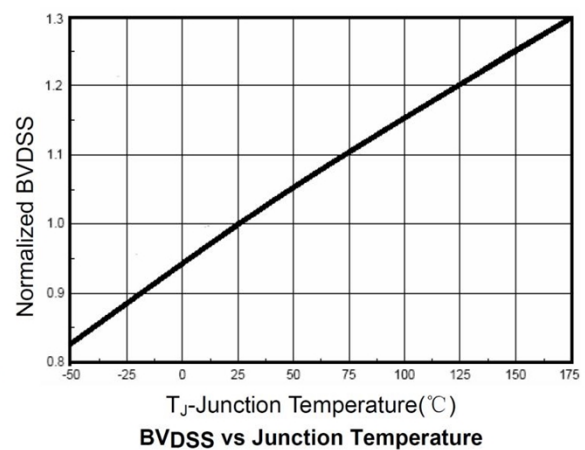
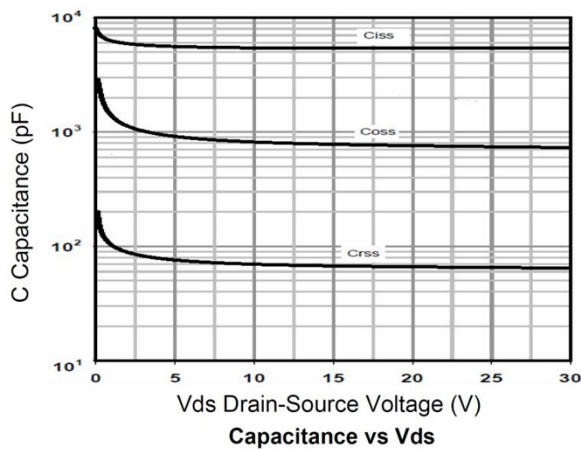
| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---------------------|---|------|------|------|------|
| Static Characteristics | | | | | | |
| Drain-Source Breakdown Voltage | BV (BR)DSS | V _{GS} = 0V, I _D =250μA | 80 | | | V |
| Drain Cut-Off Current | I _{DSS} | V _{DS} =64V, V _{GS} = 0V | | | 1 | uA |
| Gate-Body Leakage Current | I _{GSS} | V _{GS} = ±20V, V _{DS} = 0V | | | ±0.1 | uA |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250μA | 2 | 3 | 4 | V |
| Drain-Source On-State Resistance | R _{DS(on)} | V _{GS} =10V, I _D =20A | | 3.8 | 4.8 | mΩ |
| Dynamic Characteristics | | | | | | |
| Input capacitance | C _{iss} | V _{DS} =40V, V _{GS} =0V, f=1MHz | | 5360 | | pF |
| Output capacitance | C _{oss} | | | 850 | | |
| Reverse transfer capacitance | C _{rss} | | | 56 | | |
| Switching Characteristics | | | | | | |
| Total Gate Charge | Q _g | V _{DS} =40V, V _{GS} =10V, I _D =20A | | 42 | | pF |
| Gate-Source Charge | Q _{gs} | | | 15 | | |
| Gate-Drain Charge | Q _{gd} | | | 20 | | |
| Turn-on Delay Time | T _{d(on)} | V _{GS} =10V, V _{DS} =40V, R _L =2.0Ω, R _G =3Ω | | 17 | | nS |
| Turn-on Rise Time | T _r | | | 39 | | |
| Turn-Off Delay Time | T _{d(off)} | | | 64 | | |
| Turn-Off Fall Time | t _f | | | 42 | | |
| Drain-Source Body Diode Characteristics | | | | | | |
| Source-Drain Diode Forward Voltage | V _{SD} | I _s = 1A, V _{GS} = 0V | | | 1.2 | V |

Note:

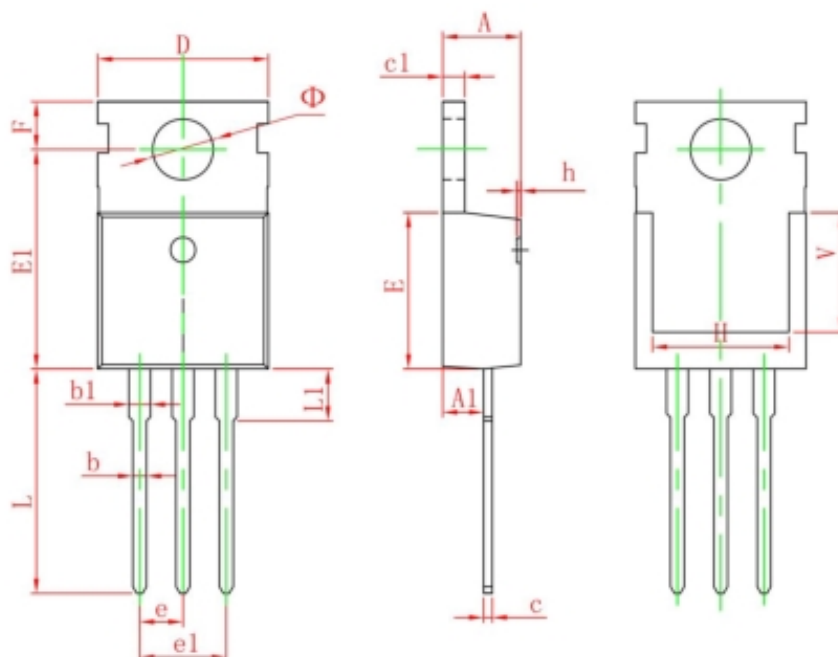
1. E AS is tested at starting $T_j = 25^{\circ}\text{C}$, $V_{DD} = 40V, V_{GS} = 10V, L = 0.5mH, R_g = 25 m\Omega$;

Typical Characteristics





TO-220-3L-C Package Information



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 4.400 | 4.600 | 0.173 | 0.181 |
| A1 | 2.250 | 2.550 | 0.089 | 0.100 |
| b | 0.710 | 0.910 | 0.028 | 0.036 |
| b1 | 1.170 | 1.370 | 0.046 | 0.054 |
| c | 0.330 | 0.650 | 0.013 | 0.026 |
| c1 | 1.200 | 1.400 | 0.047 | 0.055 |
| D | 9.910 | 10.250 | 0.390 | 0.404 |
| E | 8.950 | 9.750 | 0.352 | 0.384 |
| E1 | 12.650 | 13.050 | 0.498 | 0.514 |
| e | 2.540 TYP. | | 0.100 TYP. | |
| e1 | 4.980 | 5.180 | 0.196 | 0.204 |
| F | 2.650 | 2.950 | 0.104 | 0.116 |
| H | 7.900 | 8.100 | 0.311 | 0.319 |
| h | 0.000 | 0.300 | 0.000 | 0.012 |
| L | 12.900 | 13.400 | 0.508 | 0.528 |
| L1 | 2.850 | 3.250 | 0.112 | 0.128 |
| V | 6.900 REF. | | 0.276 REF. | |
| Φ | 3.400 | 3.800 | 0.134 | 0.150 |