

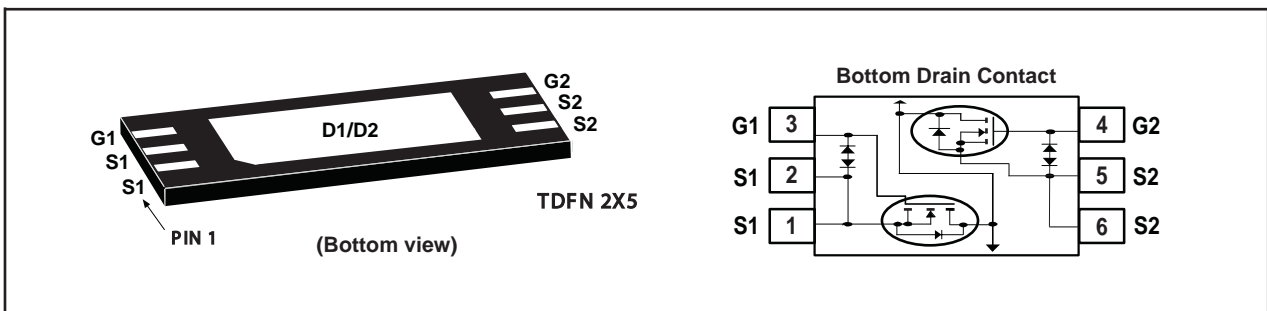


Dual N-Channel Enhancement Mode Field Effect Transistor

| PRODUCT SUMMARY | | |
|------------------|----------------|------------------------------|
| V _{DSS} | I _D | R _{DS(ON)} (mΩ) Max |
| 24V | 12A | 6.2 @ V _{GS} =10V |
| | | 7.5 @ V _{GS} =4.5V |
| | | 8.0 @ V _{GS} =4.0V |
| | | 8.6 @ V _{GS} =3.7V |
| | | 10.3 @ V _{GS} =3.1V |
| | | 16.3 @ V _{GS} =2.5V |

FEATURES

- Super high dense cell design for low R_{DS(ON)}.
- Rugged and reliable.
- Surface Mount Package.
- ESD Protected.



ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

| Symbol | Parameter | Limit | Units |
|-----------------------------------|--|----------------------|-------|
| V _{DS} | Drain-Source Voltage | 24 | V |
| V _{GS} | Gate-Source Voltage | ±16 | V |
| I _D | Drain Current-Continuous ^a c | T _A =25°C | 12 |
| | | T _A =70°C | 9.6 |
| I _{DM} | -Pulsed ^c | 58 | A |
| P _D | Maximum Power Dissipation ^a | T _A =25°C | 1.67 |
| | | T _A =70°C | 1.07 |
| T _J , T _{STG} | Operating Junction and Storage Temperature Range | -55 to 150 | °C |

THERMAL CHARACTERISTICS

| | | | |
|------------------|---|----|------|
| R _{θJA} | Thermal Resistance, Junction-to-Ambient | 75 | °C/W |
|------------------|---|----|------|

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ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

| Symbol | Parameter | Conditions | Min | Typ | Max | Units |
|---|----------------------------------|--|-----|------|------|-------|
| OFF CHARACTERISTICS | | | | | | |
| B _{Vbss} | Drain-Source Breakdown Voltage | V _{GS} =0V, I _D =250uA | 24 | | | V |
| I _{DSS} | Zero Gate Voltage Drain Current | V _{DS} =20V, V _{GS} =0V | | | 1 | uA |
| I _{GSS} | Gate-Body Leakage Current | V _{GS} = ±16V, V _{DS} =0V | | | ±10 | uA |
| ON CHARACTERISTICS | | | | | | |
| V _{GS(th)} | Gate Threshold Voltage | V _{DS} =V _{GS} , I _D =1.0mA | 0.5 | 1.0 | 1.5 | V |
| R _{DS(ON)} | Drain-Source On-State Resistance | V _{GS} =10V, I _D =6A | 4.1 | 5.1 | 6.2 | m ohm |
| | | V _{GS} =4.5V, I _D =6A | 4.7 | 6.0 | 7.5 | m ohm |
| | | V _{GS} =4.0V, I _D =6A | 5.0 | 6.4 | 8.0 | m ohm |
| | | V _{GS} =3.7V, I _D =6A | 5.3 | 6.8 | 8.6 | m ohm |
| | | V _{GS} =3.1V, I _D =6A | 6.1 | 8.0 | 10.3 | m ohm |
| | | V _{GS} =2.5V, I _D =6A | 9.4 | 12.5 | 16.3 | m ohm |
| g _{FS} | Forward Transconductance | V _{DS} =5V, I _D =6A | | 27 | | S |
| DYNAMIC CHARACTERISTICS^b | | | | | | |
| C _{iss} | Input Capacitance | V _{DS} =10V, V _{GS} =0V f=1.0MHz | | 1010 | | pF |
| C _{oss} | Output Capacitance | | | 322 | | pF |
| C _{rSS} | Reverse Transfer Capacitance | | | 283 | | pF |
| SWITCHING CHARACTERISTICS^b | | | | | | |
| t _{D(ON)} | Turn-On Delay Time | V _{DD} =20V I _D =6A | | 35 | | ns |
| t _r | Rise Time | | | 75 | | ns |
| t _{D(OFF)} | Turn-Off Delay Time | V _{GS} =10V R _{GEN} =6 ohm | | 37 | | ns |
| t _f | Fall Time | | | 80 | | ns |
| Q _g | Total Gate Charge | V _{DS} =20V, I _D =12A, V _{GS} =10V | | 35 | | nC |
| | | V _{DS} =20V, I _D =12A, V _{GS} =4.5V | | 18 | | nC |
| Q _{gs} | Gate-Source Charge | V _{DS} =20V, I _D =12A, V _{GS} =10V | | 2 | | nC |
| Q _{gd} | Gate-Drain Charge | | | 11 | | nC |
| DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS | | | | | | |
| V _{SD} | Diode Forward Voltage | V _{GS} =0V, I _S =12A | | 0.83 | 1.2 | V |

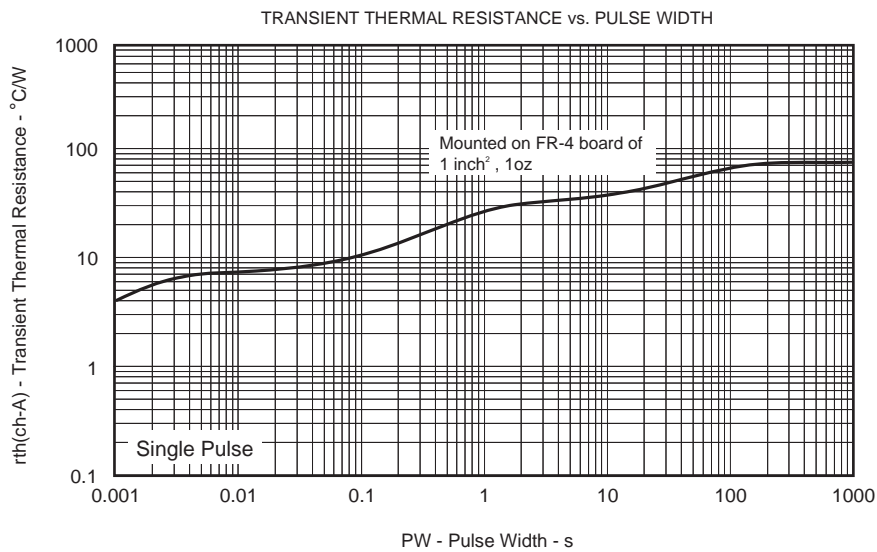
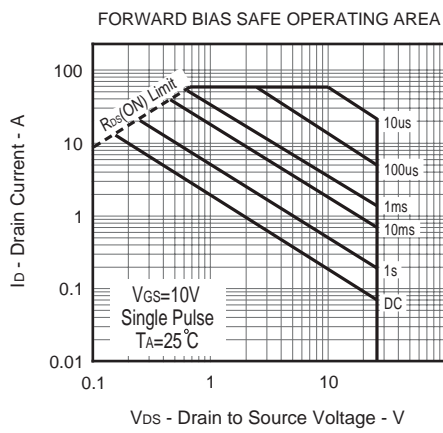
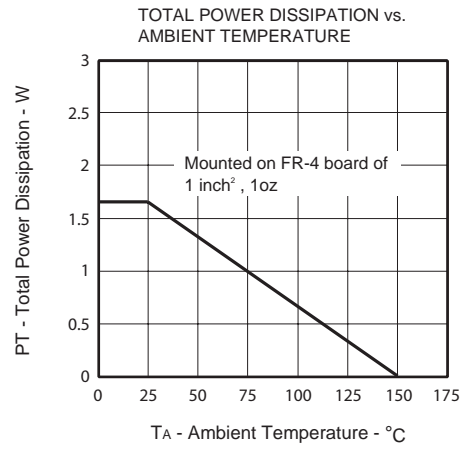
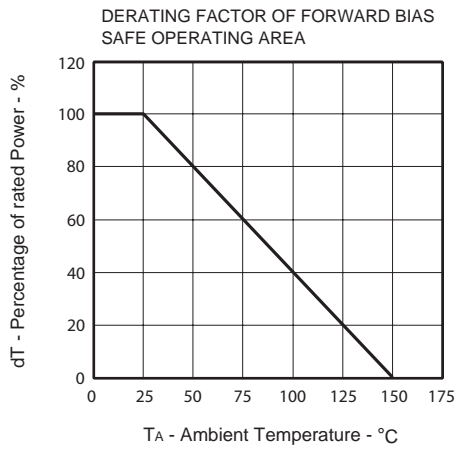
Notes

- Surface Mounted on FR4 Board of 1 inch², 1oz.
- Guaranteed by design, not subject to production testing.
- Drain current limited by maximum junction temperature.

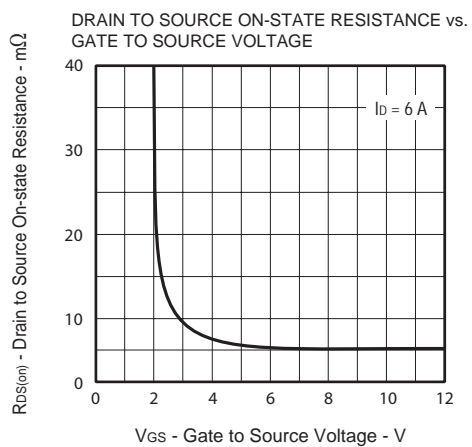
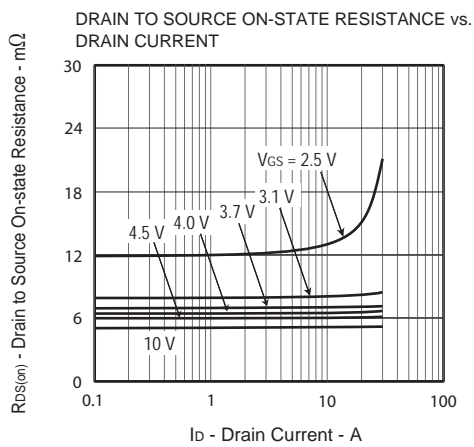
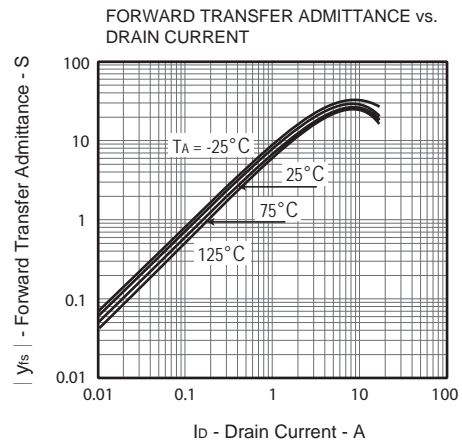
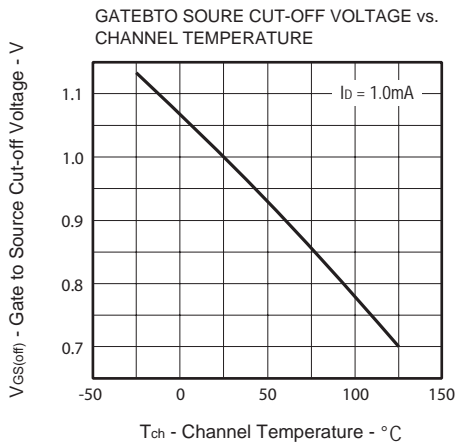
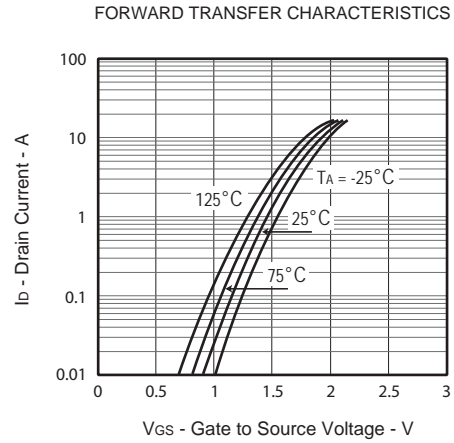
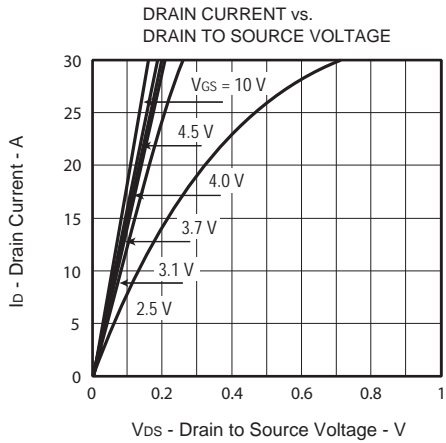
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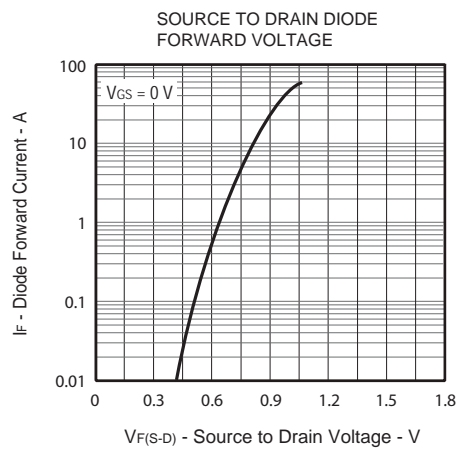
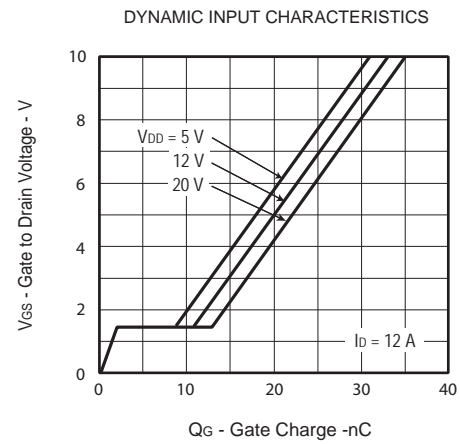
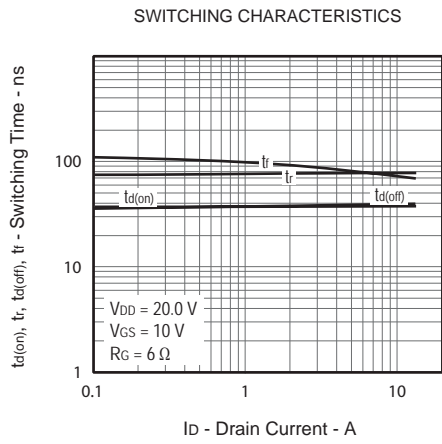
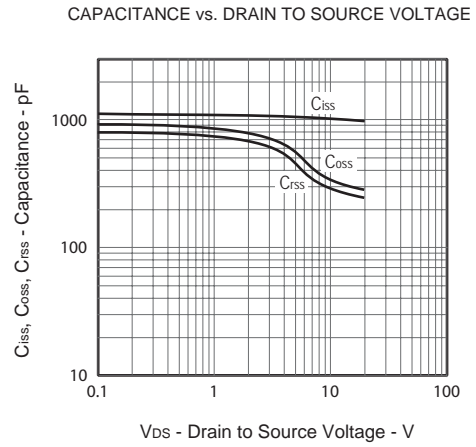
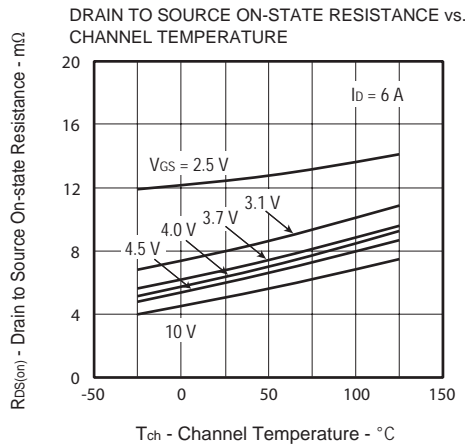
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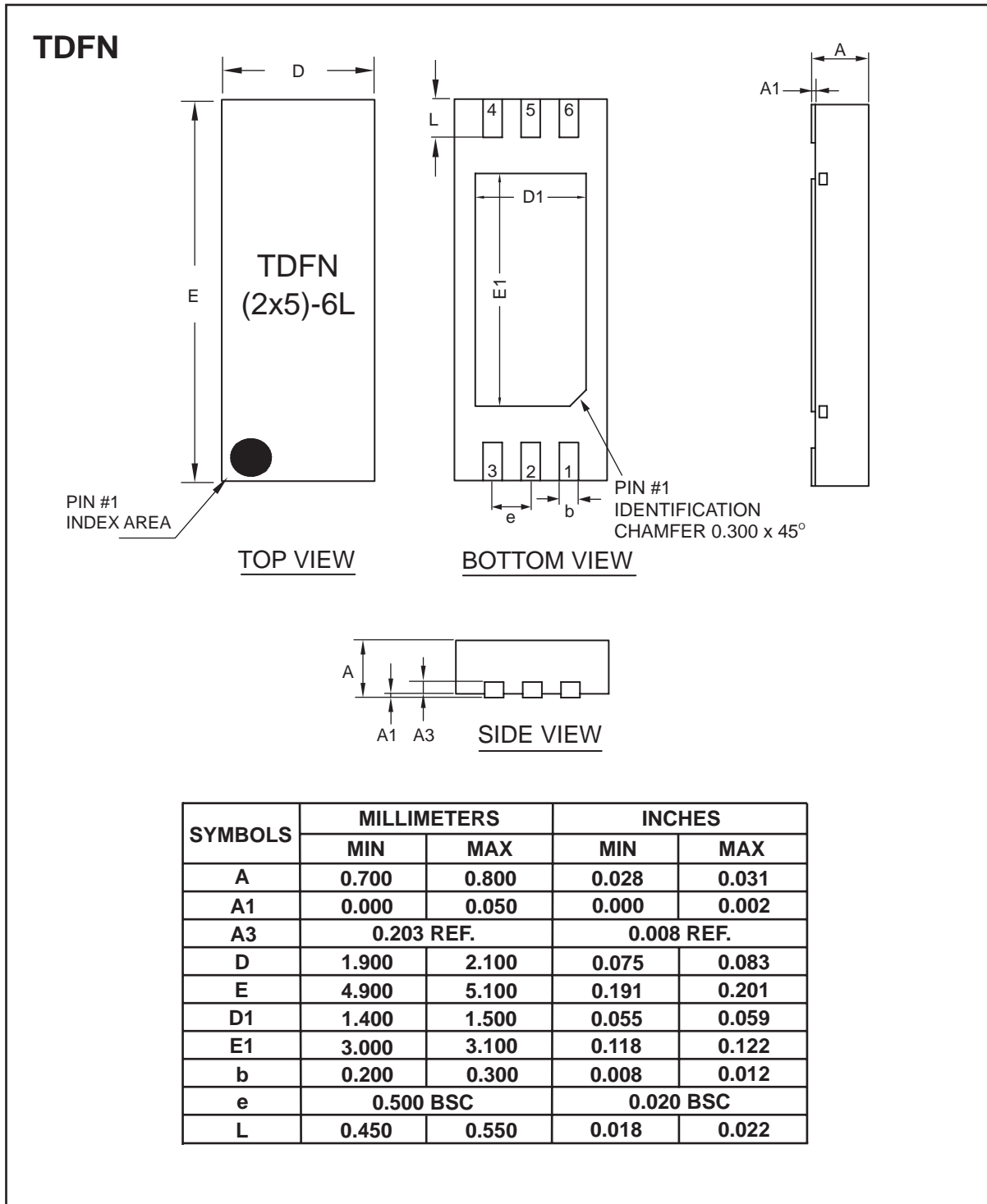


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PACKAGE OUTLINE DIMENSIONS



TOP MARKING DEFINITION

