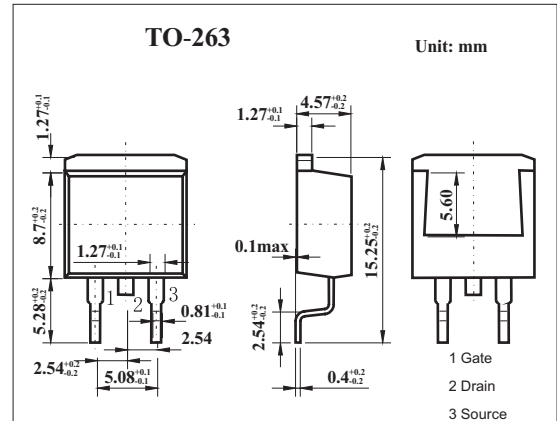


■ Features

- 4.5 V drive available
- Low on-state resistance  
 $R_{DS(on)1} = 6.0 \text{ m}\Omega \text{ MAX. (} V_{GS} = 10 \text{ V, } I_D = 40 \text{ A)}$
- Low gate charge  
 $Q_G = 55 \text{ nC TYP. (} I_D = 80 \text{ A, } V_{DD} = 16 \text{ V, } V_{GS} = 10 \text{ V)}$
- Built-in gate protection diode
- Surface mount device available



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

| Parameter               | Symbol     | Rating                 | Unit             |
|-------------------------|------------|------------------------|------------------|
| Drain to source voltage | $V_{DS}$   | 20                     | V                |
| Gate to source voltage  | $V_{GS}$   | $\pm 20$               | V                |
| Drain current           | $I_D$      | $\pm 80$               | A                |
|                         | $I_{DP}^*$ | $\pm 320$              | A                |
| Power dissipation       | $P_D$      | $T_C=25^\circ\text{C}$ | 76               |
|                         |            | $T_A=25^\circ\text{C}$ | 1.5              |
| Channel temperature     | $T_{ch}$   | 150                    | $^\circ\text{C}$ |
| Storage temperature     | $T_{stg}$  | -55 to +150            | $^\circ\text{C}$ |

\*  $PW \leq 10 \mu\text{s, Duty Cycle} \leq 1\%$

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$

| Parameter                           | Symbol        | Testconditions   | Min  | Typ  | Max      | Unit             |
|-------------------------------------|---------------|--|--|------|----------|------------------|
| Drain cut-off current               | $I_{DSS}$     | $V_{DS}=20\text{V, } V_{GS}=0$   |  |      | 10       | $\mu\text{A}$    |
| Gate leakage current                | $I_{GSS}$     | $V_{GS}=\pm 20\text{V, } V_{DS}=0$   |  |      | $\pm 10$ | $\mu\text{A}$    |
| Gate cutoff voltage                 | $V_{GS(off)}$ | $V_{DS}=10\text{V, } I_D=1\text{mA}$                                       | 1.5  |      | 2.5      | V                |
| Forward transfer admittance         | $ Y_{fs} $    | $V_{DS}=10\text{V, } I_D=40\text{A}$                                       | 20   |      |          | S                |
| Drain to source on-state resistance | $R_{DS(on)1}$ | $V_{GS}=10\text{V, } I_D=40\text{A}$                                       |  | 4.8  | 6.0      | $\text{m}\Omega$ |
|                                     | $R_{DS(on)2}$ | $V_{GS}=4.5\text{V, } I_D=40\text{A}$                                      |  | 6.7  | 9.5      | $\text{m}\Omega$ |
| Input capacitance                   | $C_{iss}$     | $V_{DS}=10\text{V, } V_{GS}=0, f=1\text{MHz}$                              |  | 2800 |          | pF               |
| Output capacitance                  | $C_{oss}$     |  |  | 1200 |          | pF               |
| Reverse transfer capacitance        | $C_{rss}$     |  |  | 600  |          | pF               |
| Turn-on delay time                  | $t_{on}$      |  |  | 16   |          | ns               |
| Rise time                           | $t_r$         | $I_D=40\text{A, } V_{GS(on)}=10\text{V, } R_G=10\Omega, V_{DD}=10\text{V}$ |  | 23   |          | ns               |
| Turn-off delay time                 | $t_{off}$     |  |  | 74   |          | ns               |
| Fall time                           | $t_f$         |  |  | 31   |          | ns               |
| Total Gate Charge                   | $Q_G$         |  | $I_D=80\text{A, } V_{DD}=16\text{V, } V_{GS}=10\text{V}$ |      | 55       |                  |
| Gate to Source Charge               | $Q_{GS}$      |  |  | 9    |          | nC               |
| Gate to Drain Charge                | $Q_{GD}$      |  |  | 17   |          | nC               |