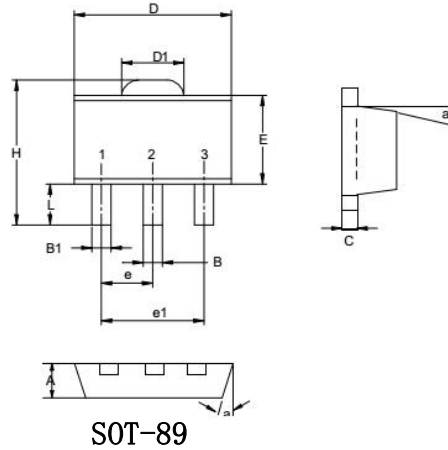


Features

- Low On resistance.
- -4.5V drive.
- Lead Free and Green Devices Available (RoHS compliant) .



Package Dimensions



Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|-----------|---|----------|------|
| Drain-to-Source Voltage | V_{DSS} | | -30 | V |
| Gate-to-Source Voltage | V_{GSS} | | +20 | V |
| Drain Current (DC) | I_D | | -5.0 | A |
| Drain Current (Pulse) | I_{DP} | $PW \leq 10\mu S$, duty cycle $\leq 1\%$ | -20 | A |
| Allowable Power Dissipation | P_D | Mounted on a ceramic board (1000mm ² ×0.8mm) 1unit | 1.3 | W |
| Total Dissipation | P_T | Mounted on a ceramic board (1000mm ² ×0.8mm) | 1.7 | W |
| Channel Temperature | T_{ch} | | 150 | °C |
| Storage Temperature | T_{stg} | | -55~+150 | °C |

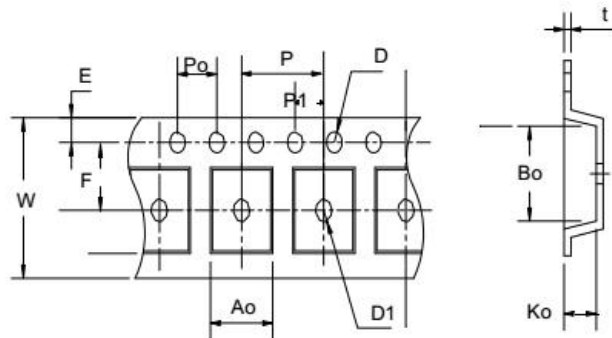
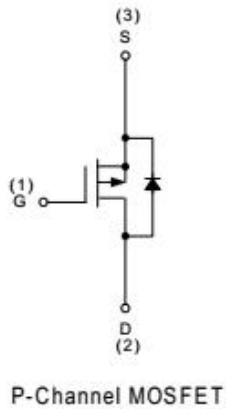
Electrical Characteristics at $T_a=25^{\circ}C$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|--|---------|-----|-----------|------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D=-250\mu A$, $V_{GS}=0V$ | -30 | | | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=-30V$, $V_{GS}=0V$ | | | -1 | uA |
| Gate-to-Source Leakage Current | I_{GSS} | $V_{GS}=\pm 20V$, $V_{DS}=0V$ | | | ± 100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}$, $I_D=-250\mu A$ | -1.0 | | -3.0 | V |
| Static Drain-to-Source On-State Resistance | $R_{DS(ON)}$ | $I_D=-5.0A$, $V_{GS}=-10V$ | | 47 | 60 | mΩ |
| | $R_{DS(ON)}$ | $I_D=-4A$, $V_{GS}=-4.5V$ | | 75 | 95 | mΩ |
| Input Capacitance | C_{iss} | $V_{DS}=-15V$, $V_{GS}=0V$, $f=1MHz$ | | 680 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=-15V$, $V_{GS}=0V$, $f=1MHz$ | | 120 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=-15V$, $V_{GS}=0V$, $f=1MHz$ | | 75 | | pF |

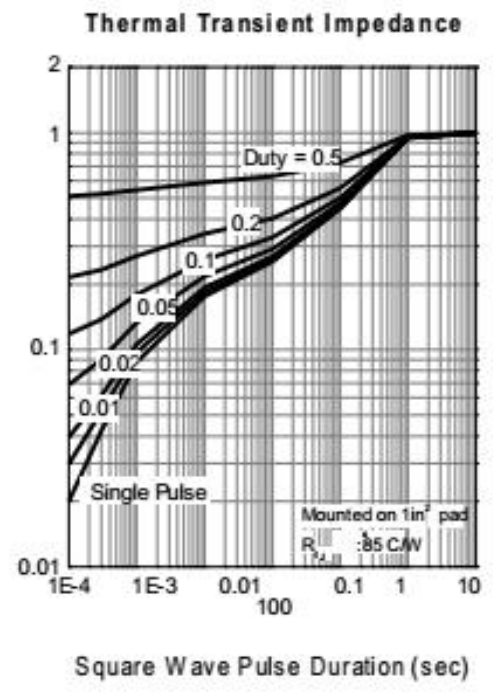
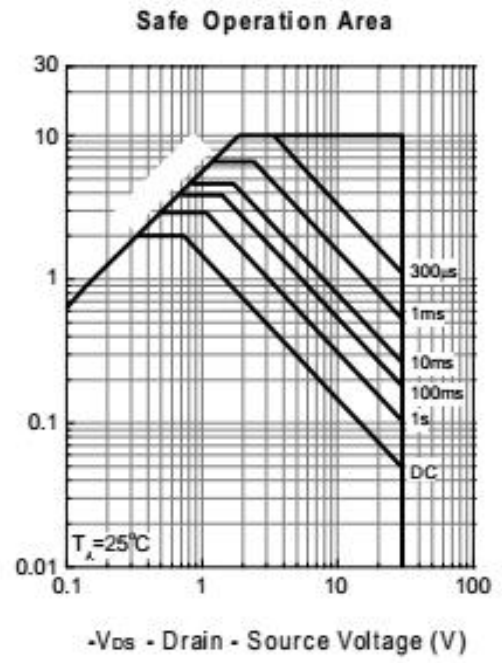
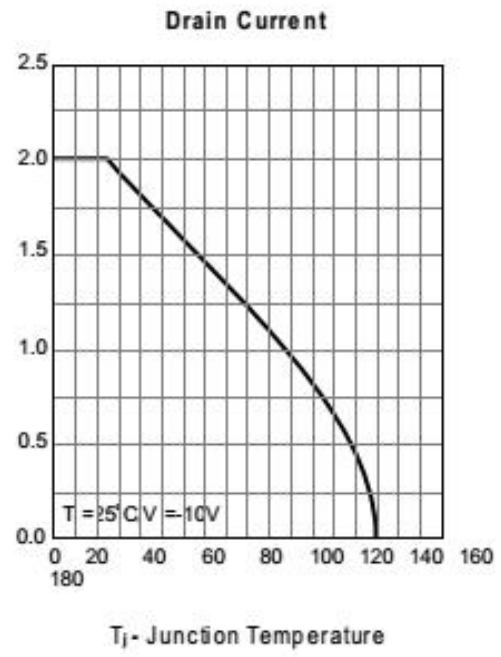
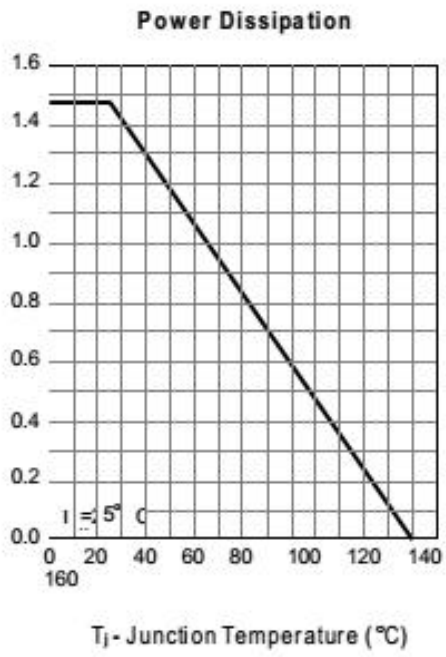
Electrical Characteristics at $T_a=25^0\text{C}$ (Continued)

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-------------------------------|--------------|---|---------|------|------|------|
| | | | min | Typ | max | |
| Turn-on Delay Time | $t_{d(on)}$ | $V_{GEN}=-10\text{V}, V_{DS}=-15\text{V}, R_L=15\Omega,$ $I_D=-1\text{A}, R_{GEN}=6\Omega$ | | 7.0 | 15 | nS |
| Rise Time | t_r | | | 10 | 20 | nS |
| Turn-off Delay Time | $t_{d(off)}$ | | | 40 | 80 | nS |
| Fall Time | t_f | | | 20 | 40 | nS |
| Total Gate Charge | Q_g | $V_{DS}=-15\text{V}, V_{GS}=-10\text{V}, I_D=-5\text{A}$ | | 10 | 15 | nC |
| Gate-to-Source Charge | Q_{gs} | | | 4.0 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | | | 2.0 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=-2\text{A}, V_{GS}=0\text{V}$ | | -0.8 | -1.2 | V |

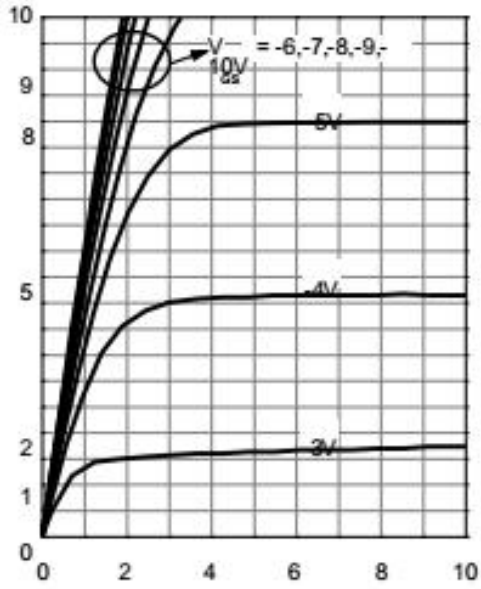
Pin Description



Typical Characteristics at $T_a=25^0\text{C}$

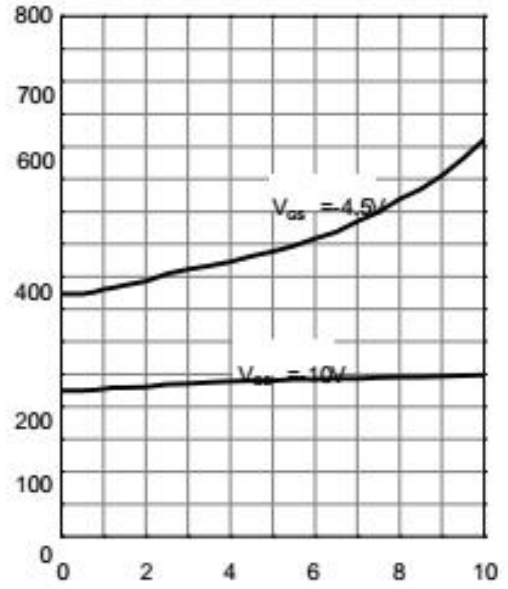


Output Characteristics



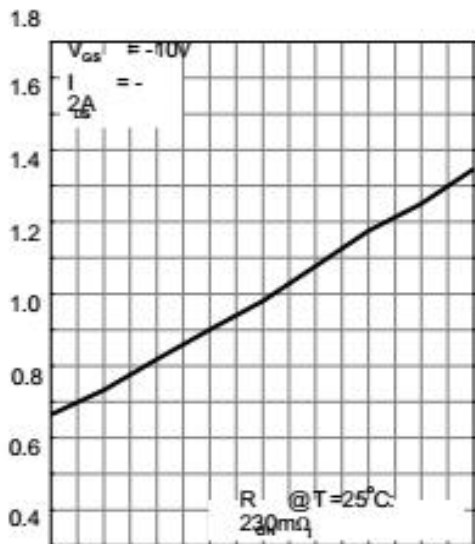
$-V_{DS}$ - Drain - Source Voltage (V)

Drain-Source On Resistance



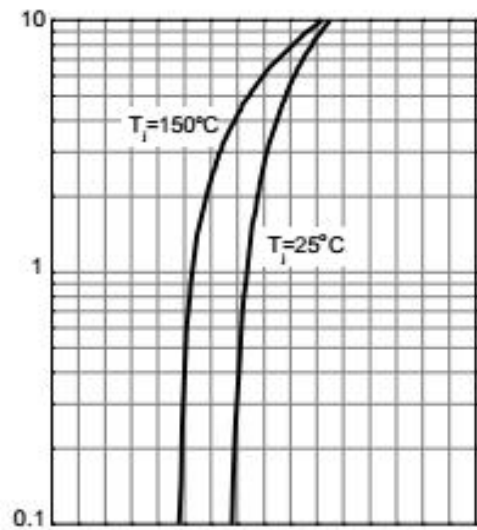
$-I_D$ - Drain Current (A)

Drain-Source On Resistance



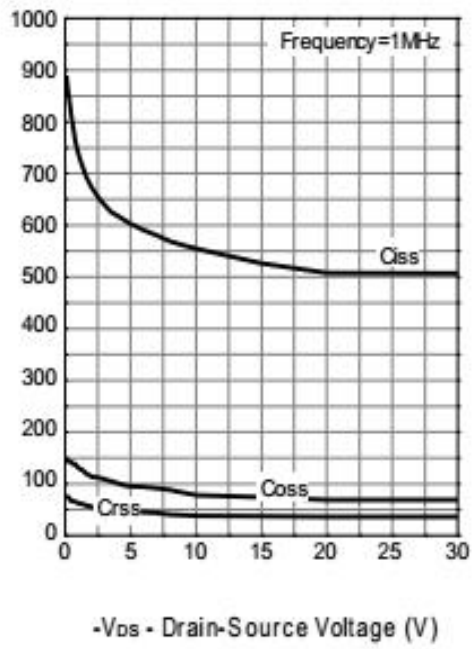
T_J - Junction Temperature ($^{\circ}C$)

Source-Drain Diode Forward



$-V_{SD}$ - Source - Drain Voltage (V)

Capacitance



Gate Charge

