★ Green Device Available
★ Super Low Gate Charge
★ Excellent Cdv/dt effect decline
★ Advanced high cell density Trench technology

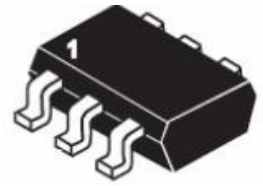
## Product Summary

| BVDSS | RDSON | ID |
|---|---|---|
| 20V | 14mΩ | 7A |

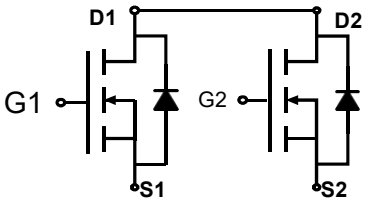
## Description

The ZX 8810 is the low RDSON trenched N-CH MOSFETs with robust ESD protection. This product is suitable for Lithium-ion battery pack applications.
The ZX 8810 meet the RoHS and Green Product requirement with full function reliability approved.

## SOT23-3L Pin Configuration




pin assignment




Schematic diagram

## Package Marking and Ordering Information

| Product | Package | Marking | Packing | Min Unit Quantity |
|---|---|---|---|---|
| ZX 8810 | SOT23-3L | * | 3000PCS/Reel | 3000PCS |

## Absolute Maximum Ratings ($T_A$=25℃unless otherwise noted)

| Parameter | Symbol | Limit | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 20 | V |
| Gate-Source Voltage | $V_{GS}$ | ±10 | V |
| Drain Current-Continuous | $I_D$ | 7 | A |
| Drain Current-Pulsed (Note 1) | $I_{DM}$ | 25 | A |
| Maximum Power Dissipation | $P_D$ | 1.25 | W |
| Operating Junction and Storage Temperature Range | $T_J$,$T_{STG}$ | -55 To 150 | ℃ |

## Thermal Characteristic

| | | | |
|---|---|---|---|
| Thermal Resistance,Junction-to-Ambient (Note 2) | $R_{\theta JA}$ | 100 | ℃/W |

| | | | | | | |
|---|---|---|---|---|---|---|
| Gate-Body Leakage Current | $I_{GSS}$ | $V_{GS}$=±12V,$V_{DS}$=0V | - | - | ±100 | nA |
| **On Characteristics** (Note 3) | | | | | | |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$,$I_D$=250μA | 0.5 | 0.7 | 1.2 | V |
| Drain-Source On-State Resistance | $R_{DS(ON)}$ | $V_{GS}$=4.5V, $I_D$=4.5A | - | 14 | 20 | mΩ |
| | | $V_{GS}$=2.5V, $I_D$=3.5A | - | 19 | 25 | mΩ |
| Forward Transconductance | $g_{FS}$ | $V_{DS}$=5V,$I_D$=4.5A | - | 10 | - | S |
| **Dynamic Characteristics** (Note4) | | | | | | |
| Input Capacitance | $C_{lss}$ | $V_{DS}$=10V,$V_{GS}$=0V, F=1.0MHz | - | 900 | - | PF |
| Output Capacitance | $C_{oss}$ | | - | 220 | - | PF |
| Reverse Transfer Capacitance | $C_{rss}$ | | - | 100 | - | PF |
| **Switching Characteristics** (Note 4) | | | | | | |
| Turn-on Delay Time | $t_{d(on)}$ | $V_{DD}$=10V,$I_D$=1A $V_{GS}$=4.5V,$R_{GEN}$=6Ω | - | 10 | 20 | nS |
| Turn-on Rise Time | $t_r$ | | - | 11 | 25 | nS |
| Turn-Off Delay Time | $t_{d(off)}$ | | - | 35 | 70 | nS |
| Turn-Off Fall Time | $t_f$ | | - | 30 | 60 | nS |
| Total Gate Charge | $Q_g$ | $V_{DS}$=10V,$I_D$=6A, $V_{GS}$=4.5V | - | 12 | 15 | nC |
| Gate-Source Charge | $Q_{gs}$ | | - | 2.3 | - | nC |
| Gate-Drain Charge | $Q_{gd}$ | | - | 1 | - | nC |
| **Drain-Source Diode Characteristics** | | | | | | |
| Diode Forward Voltage (Note 3) | $V_{SD}$ | $V_{GS}$=0V,$I_S$=1.7A | - | 0.75 | 1.2 | V |
| Diode Forward Current (Note 2) | $I_S$ | | - | - | 6.5 | A |

## Typical Electrical and Thermal Characteristics

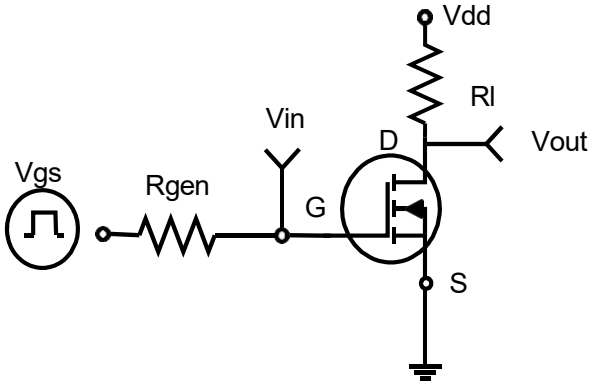



**Figure 1:Switching Test Circuit**

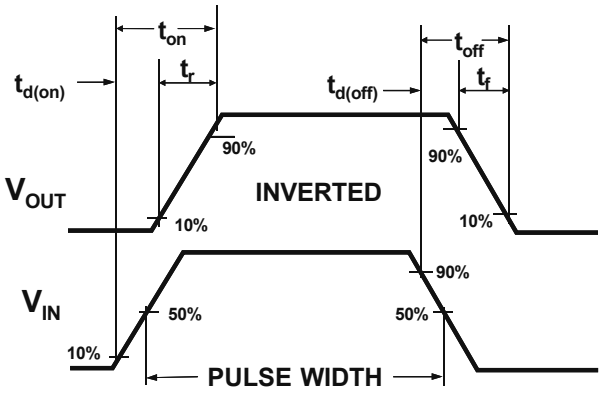



**Figure 2:Switching Waveforms**

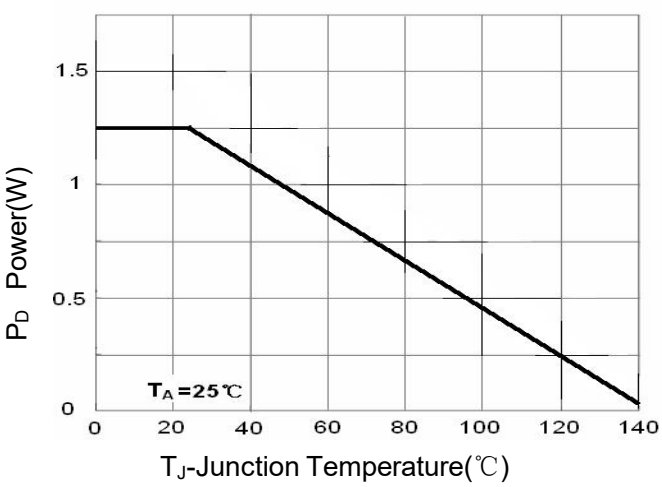



**Figure 3 Power Dissipation**

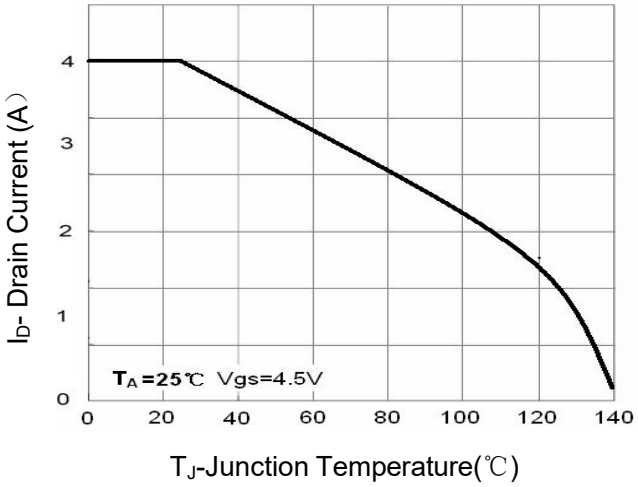



**Figure 4 Drain Current**

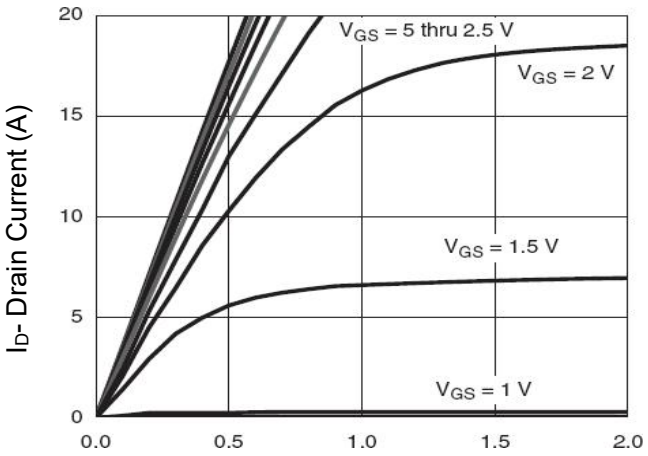



**Figure 5 Output Characteristics**

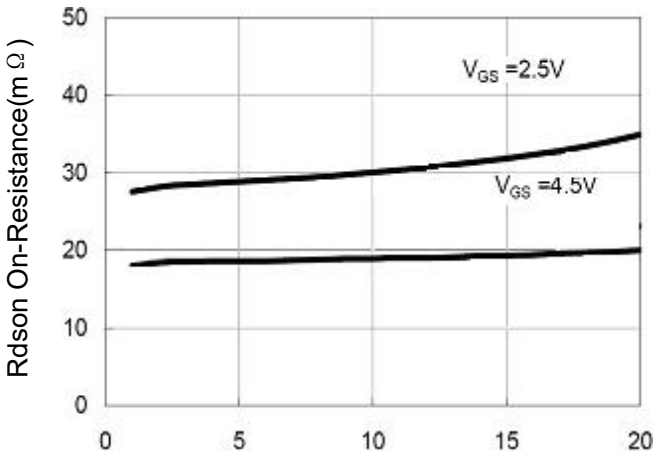



**Figure 6 Drain-Source On-Resistance**

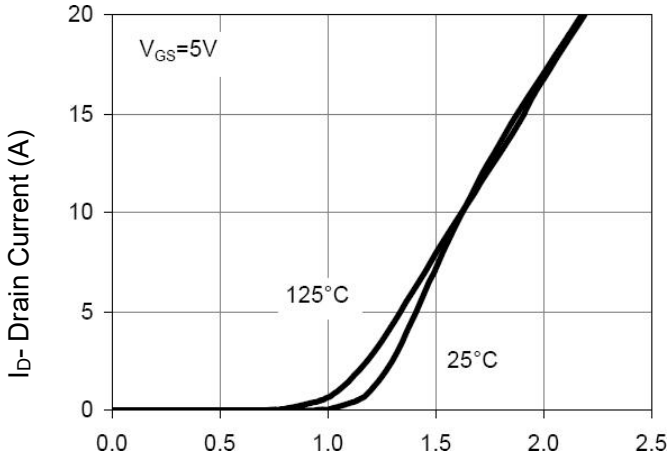



**Figure 7 Transfer Characteristics**

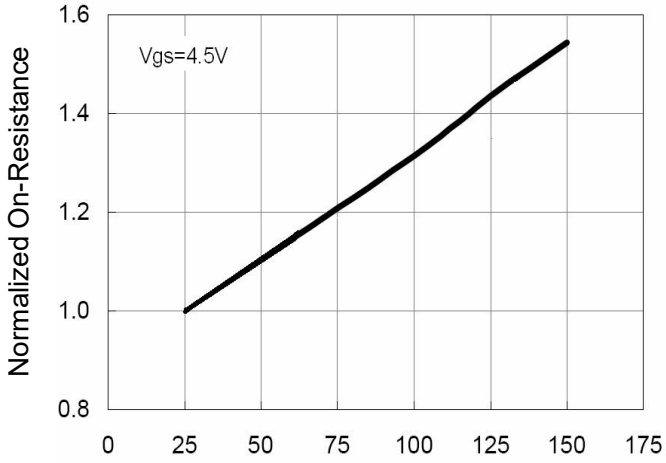



**Figure 8 Drain-Source On-Resistance**

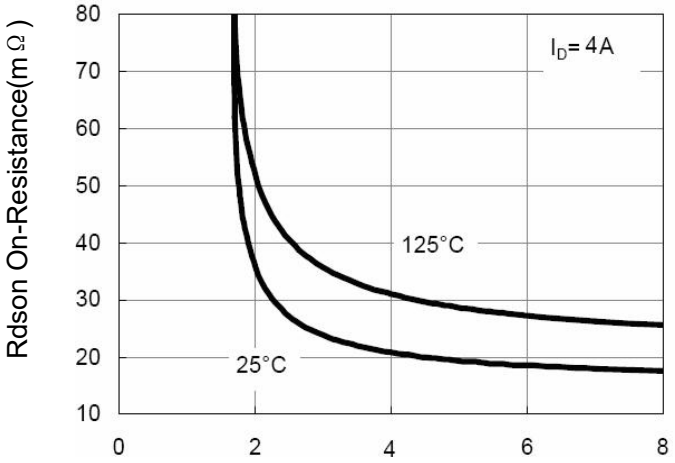



**Figure 9 Rdson vs Vgs**

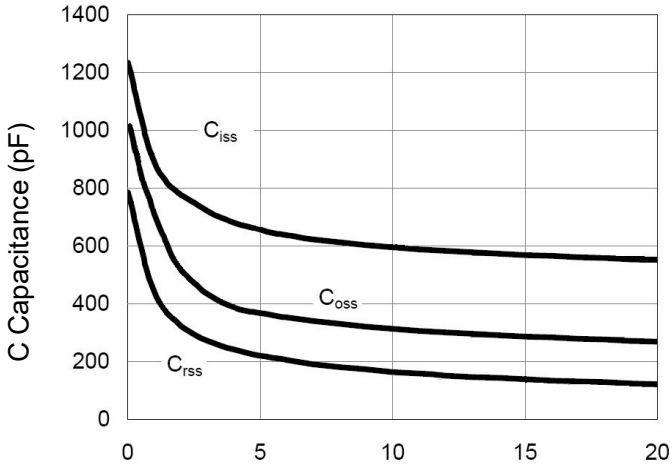



**Figure 10 Capacitance vs Vds**

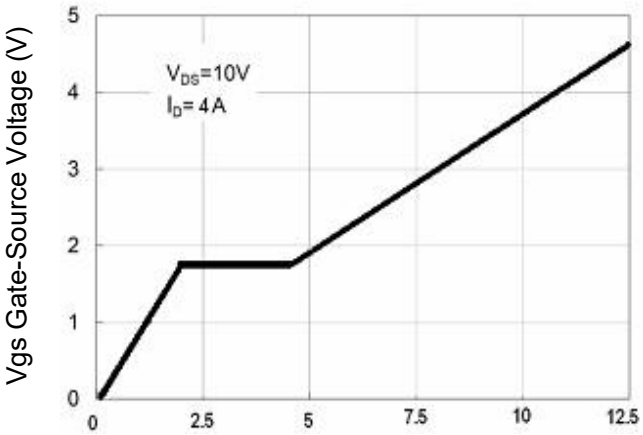



**Figure 11 Gate Charge**

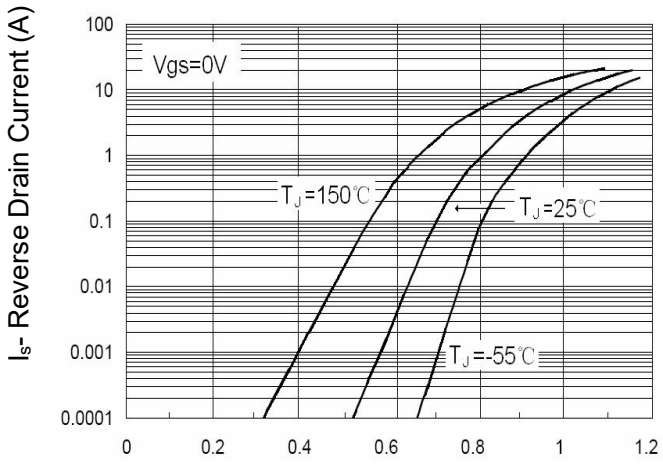



**Figure 12 Source- Drain Diode Forward**

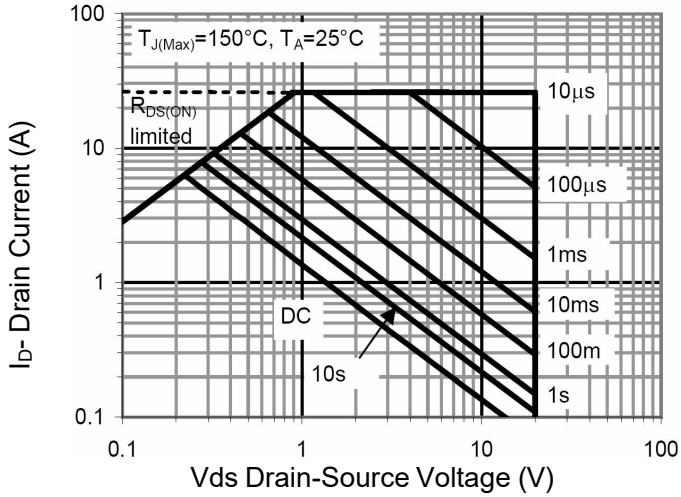



**Figure 13 Safe Operation Area**

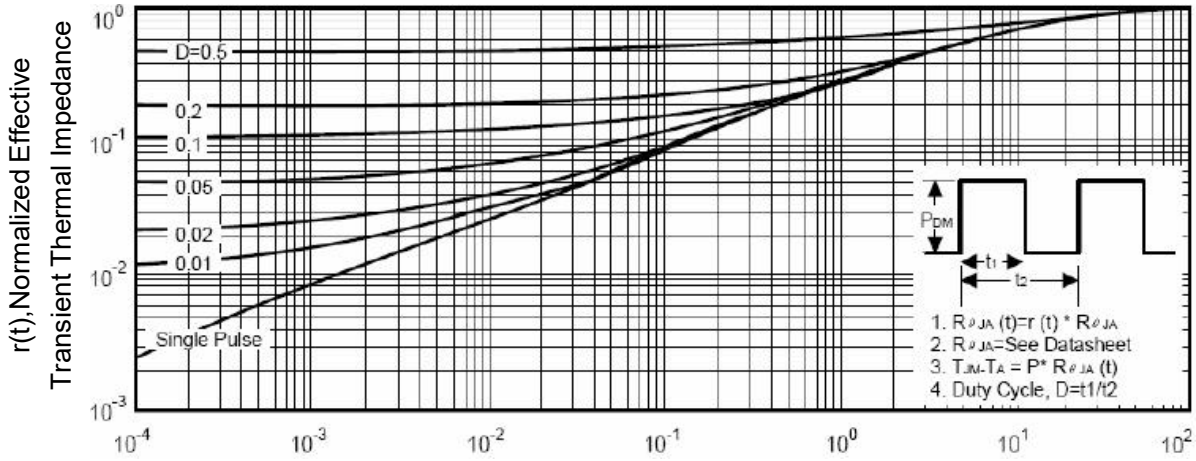
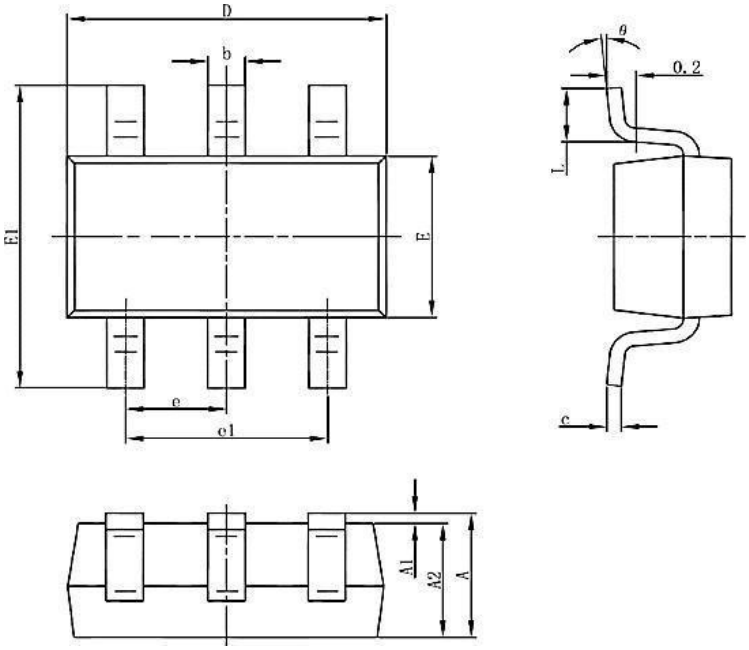



**Figure 14 Normalized Maximum Transient Thermal Impedance**

## SOT23-3L Package Information




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 1.050 | 1.250 | 0.041 | 0.049 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.050 | 1.150 | 0.041 | 0.045 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| C | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 2.820 | 3.020 | 0.111 | 0.119 |
| E | 1.500 | 1.700 | 0.059 | 0.067 |
| E1 | 2.650 | 2.950 | 0.104 | 0.116 |
| e | 0.950（BSC） | | 0.037(BSC) | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.300 | 0.600 | 0.012 | 0.024 |
| θ | 0 | 8 | 0 | 8 |