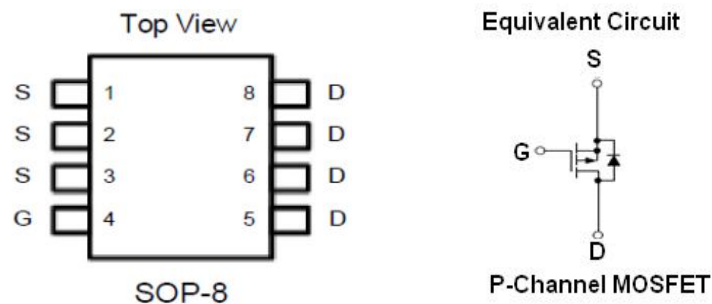




## GENERAL DESCRIPTION

The RZC4435 uses advanced trench technology to provide excellent  $R_{DS(ON)}$ . This device is suitable for use as a load switch or in PWM applications. Standard product RZC4435 is Pb-free (meets ROHS specifications). RZC4435 is a Green Product ordering option.

## PIN CONFIGURATION



## FEATURES

- $V_{DS(max)} = -30V$ ;
- $I_{D(max)} = -10A$
- Low on-state resistance  
 $R_{DS(on)} \leq 16m\Omega$  TYP. ( $V_{GS} = -10V$ )  
 $R_{DS(on)} \leq 21m\Omega$  TYP. ( $V_{GS} = -4.5V$ )
- Super High Dense Cell Design
- Reliable and Rugged
- Lead Free and Green Devices Available  
(RoHS Compliant)

## APPLICTIONS

- High Side Load Switch
- Power Management in LCD TV, Monitor, Notebook  
Computer, Portable Equipment and Battery Powered Systems

## ORDERING INFORMATION

| Part Number | Package | Top Marking | Packing      |
|-------------|---------|-------------|--------------|
| RZC4435S    | SOP-8   | S4435       | 3000PCS/Real |

**MAXIMUM RATINGS** ( $T_a = 25^\circ\text{C}$ )

| Parameter   | Symbol                  | Value              | Units            |   |
|---|-------------------------|--------------------|------------------|---|
| Drain to Source Voltage   | $V_{DSS}$               | -30                | V                |   |
| Gate to Source Voltage  | $V_{GSS}$               | $\pm 20$           | V                |   |
| Continuous Drain Current  | $I_D$                   | $25^\circ\text{C}$ | -10              | A |
|   |                         | $85^\circ\text{C}$ | -8               | A |
| Pulsed Drain Current  | $I_{D(pulse)}$          | -50                | A                |   |
| Maximum Power Dissipation   | $P_D(25^\circ\text{C})$ | 3.0                | W                |   |
| Operating Junction Temperature                                      | $T_J$                   | +150               | $^\circ\text{C}$ |   |
| Storage Temperature   | $T_{STG}$               | -55-+150           | $^\circ\text{C}$ |   |
| Lead Temperature for Soldering<br>Purposes(1/8" from case for 10 s) | $T_L$                   | 260                | $^\circ\text{C}$ |   |

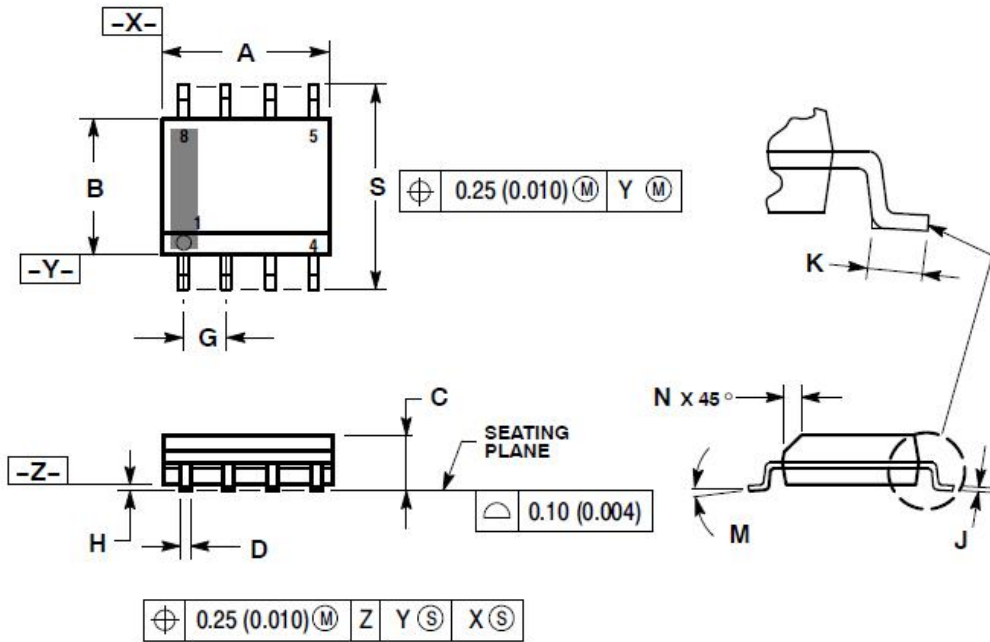
**ELECTRICAL CHARACTERISTICS** (TA = 25°C)

| Parameter   | Symbol              | Test Conditions   | MIN  | TYP  | MAX  | Units |
|---|---------------------|---|------|------|------|-------|
| Drain-Source Breakdown Voltage                        | BV <sub>DSS</sub>   | V <sub>GS</sub> =0V, I <sub>DS</sub> =-250uA  | -30  |      |      | V     |
| Zero Gate Voltage Drain Current                       | I <sub>DSS</sub>    | V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V  |      |      | -1   | uA    |
| Gate Leakage Current                                  | I <sub>GSS</sub>    | V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V  |      |      | ±100 | nA    |
| Gate threshold voltage                                | V <sub>GS(TH)</sub> | V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> = -250μA                              | -1.0 | -1.5 | -2.5 | V     |
| Drain to Source On-state Resistance                   | R <sub>DS(on)</sub> | V <sub>GS</sub> =-10V, I <sub>D</sub> =-8.0A  |      | 16   | 23   | mΩ    |
|   |                     | V <sub>GS</sub> = -4.5V, I <sub>D</sub> =-6.0A  |      | 21   | 34   | mΩ    |
| Drain-Source Diode Forward Voltage                    | V <sub>SD</sub>     | I <sub>S</sub> =-10A, V <sub>GS</sub> =0V   |      | -0.8 | -1.3 | V     |
| Input Capacitance                                     | C <sub>ISS</sub>    | V <sub>DS</sub> =-15V, V <sub>GS</sub> =0V, f=1MHz                                      |      | 1550 |      | pF    |
| Output Capacitance                                    | C <sub>OSS</sub>    |   |      | 327  |      |       |
| Reverse Transfer Capacitance                          | C <sub>RSS</sub>    |   |      | 278  |      |       |
| Total Gate Charge                                     | Q <sub>g</sub>      | V <sub>DS</sub> =-15V, V <sub>GS</sub> =-10V, I <sub>D</sub> =-8.0A                     |      | 30   |      | nC    |
| Gate-Source Charge                                    | Q <sub>gs</sub>     |   |      | 5.3  |      |       |
| Gate-Drain Charge                                     | Q <sub>gd</sub>     |   |      | 7.6  |      |       |
| Turn-On Delay Time                                    | T <sub>d(on)</sub>  | V <sub>DD</sub> =-15V, V <sub>GS</sub> =-10V, R <sub>G</sub> =2.5Ω, I <sub>D</sub> =-6A |      | 14   |      | nS    |
| Rise Time   | T <sub>r</sub>      |   |      | 20   |      |       |
| Turn-Off Delay Time                                   | T <sub>d(off)</sub> |   |      | 95   |      |       |
| Fall Time   | T <sub>f</sub>      |   |      | 65   |      |       |
| Drain-Source Diode Forward Voltage                    | V <sub>SD</sub>     | I <sub>S</sub> =-10A, V <sub>GS</sub> =0V, T <sub>C</sub> =25°C                         |      | -0.8 | -1.2 | V     |
| Maximum Continuous Drain-Source Diode Forward Current | I <sub>D</sub>      | T <sub>C</sub> =25°C  |      |      | -50  | A     |

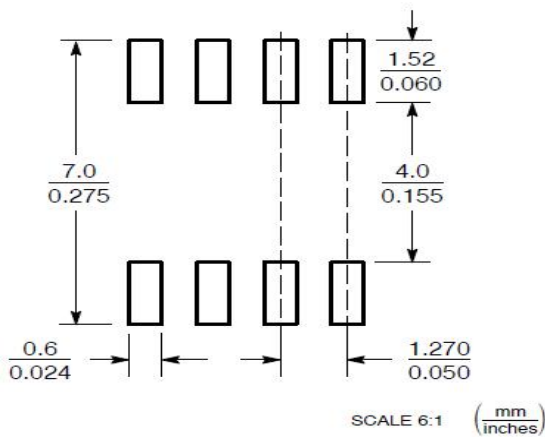


PACKAGE DIMENSIONS

SOP-8



SOLDERING FOOTPRINT\*



| DIM | MILLIMETERS |      | INCHES    |       |
|-----|-------------|------|-----------|-------|
|     | MIN         | MAX  | MIN       | MAX   |
| A   | 4.80        | 5.00 | 0.189     | 0.197 |
| B   | 3.80        | 4.00 | 0.150     | 0.157 |
| C   | 1.35        | 1.75 | 0.053     | 0.069 |
| D   | 0.33        | 0.51 | 0.013     | 0.020 |
| G   | 1.27 BSC    |      | 0.050 BSC |       |
| H   | 0.10        | 0.25 | 0.004     | 0.010 |
| J   | 0.19        | 0.25 | 0.007     | 0.010 |
| K   | 0.40        | 1.27 | 0.016     | 0.050 |
| M   | 0 °         | 8 °  | 0 °       | 8 °   |
| N   | 0.25        | 0.50 | 0.010     | 0.020 |
| S   | 5.80        | 6.20 | 0.228     | 0.244 |