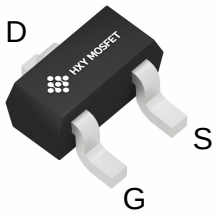
# SI1317DL-T1-GE3

P-Channel Enhancement Mode MOSFET

## Description

The SI1317DL-T1-GE3 uses advanced trench technology to provide excellent $R_{DS(ON)}$, This device is suitable for use as a load switch or in PWM applications.




**SOT-323**
**(SOT-323-3)**

## General Features

$V_{DS}$ = -20V,$I_D$ = -1.8A

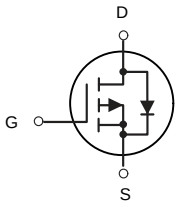
$R_{DS(ON)}$ < 150mΩ @ $V_{GS}$=-4.5V

## Application

Battery protection

Load switch

Uninterruptible power supply




P-Channel MOSFET

## Package Marking and Ordering Information

| Product ID | Pack | Marking | Qty(PCS) |
|---|---|---|---|
| SI1317DL-T1-GE3 | SOT-323(SOT-323-3) | TS1 | 3000 |

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

| Symbol | Parameter | Limit | Unit |
|---|---|---|---|
| $V_{DS}$ | Drain-Source Voltage | -20 | V |
| $V_{GS}$ | Gate-Source Voltage | ±8 | V |
| $I_D$ | Drain Current-Continuous | -1.8 | A |
| $I_{DM}$ | Drain Current-Pulsed (Note 1) | -3 | A |
| $P_D$ | Maximum Power Dissipation | 0.29 | W |
| $T_J$,$T_{STG}$ | Operating Junction and Storage Temperature Range | -55 To 150 | ℃ |
| $R_{\theta JA}$ | Thermal Resistance,Junction-to-Ambient (Note 2) | 431 | ℃/W |

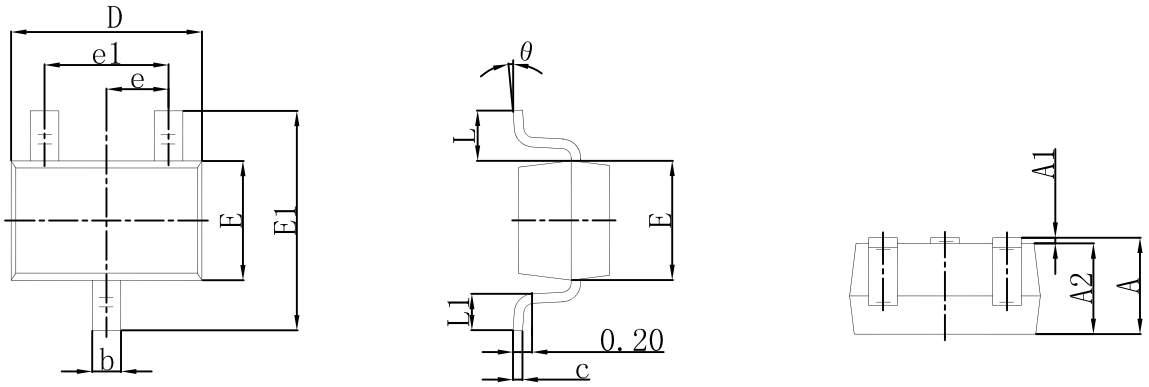
## Electrical Characteristics ($T_A$=25°C unless otherwise noted)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Static Characteristics** | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS}$ = 0V, $I_D$ =-250μA | -20 | | | V |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{DS}$ =-18V,$V_{GS}$ = 0V | | | -1 | μA |
| Gate-body leakage current | $I_{GSS}$ | $V_{GS}$ =±12V, $V_{DS}$ = 0V | | | ±100 | nA |
| Gate threshold voltage (note2) | $V_{GS(th)}$ | $V_{DS}$ =$V_{GS}$, $I_D$ =-250μA | -0.4 | -0.7 | -1.0 | V |
| Drain-source on-resistance (note2) | $R_{DS(on)}$ | $V_{GS}$ =-4.5V, $I_D$ =-2A | | | 150 | mΩ |
| | | $V_{GS}$ =-2.5V, $I_D$ =-1.0A | | | 230 | mΩ |
| Maximum Continuous Drain to Source Diode Forward Current | $I_S$ | -- | | | -1.0 | A |
| Diode forward voltage | $V_{SD}$ | $I_S$=-1.0A, $V_{GS}$ =0V | | | -1.2 | V |
| **Dynamic Characteristics** (note3) | | | | | | |
| Input capacitance | $C_{iss}$ | $V_{DS}$ =-8V,$V_{GS}$ =0V, f =1MHz | | | 680 | pF |
| Output capacitance | $C_{oss}$ | | | | 130 | pF |
| Reverse transfer capacitance | $C_{rss}$ | | | | 95 | pF |
| **Switching Characteristics** (note3) | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{GS}$=-4.5V,$V_{DS}$=-10V, $I_D$=-1.0A,$R_G$=5.1Ω | | | 10 | nS |
| Turn-on rise time | $t_r$ | | | | 20 | nS |
| Turn-off delay time | $t_{d(off)}$ | | | | 35 | nS |
| Turn-off fall time | $t_f$ | | | | 18 | nS |

Notes:

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test : Pulse Width=300μs, Duty Cycle=2%.
3. These parameters have no way to verify.

## SOT-323(SOT-323-3) Package Outline Dimensions




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 0.900 | 1.100 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.000 | 0.035 | 0.039 |
| b | 0.200 | 0.400 | 0.008 | 0.016 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.000 | 2.200 | 0.079 | 0.087 |
| E | 1.150 | 1.350 | 0.045 | 0.053 |
| E1 | 2.150 | 2.450 | 0.085 | 0.096 |
| e | 0.650 TYP | | 0.026 TYP | |
| e1 | 1.200 | 1.400 | 0.047 | 0.055 |
| L | 0.525 REF | | 0.021 REF | |
| L1 | 0.260 | 0.460 | 0.010 | 0.018 |
| K | 0° | 8° | 0° | 8° |

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