## Description

The NP2302FHR uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and high density cell Design for ultra low on-resistance. This device is suitable for use as a load switch or in PWM applications.

## General Features

$V_{DS}$ =20V $I_D$ =3A

$R_{DS(ON)}$(Typ.)=45mΩ @$V_{GS}$=4.5V

$R_{DS(ON)}$(Typ.)=73mΩ @$V_{GS}$=2.5V

High power and current handing capability

Lead free product is acquired

Surface mount package

## Application

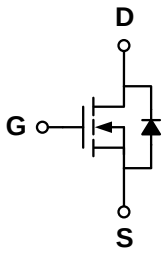
PWM applications

Load switch

## Package

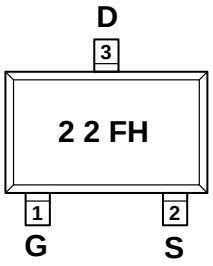
ESOT-23-3L

## Schematic diagram




## Marking and pin assignment

ESOT-23-3L
(TOP VIEW)




## Ordering Information

| Part Number | Storage Temperature | Package | Devices Per Reel |
|---|---|---|---|
| NP2302FHR-G | -55°C to +150°C | ESOT-23-3L | 3000 |

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

| parameter | symbol | limit | unit |
|---|---|---|---|
| Drain-source voltage | $V_{DS}$ | 20 | V |
| Gate-source voltage | $V_{GS}$ | ±12 | V |

## Typical Performance Characteristics

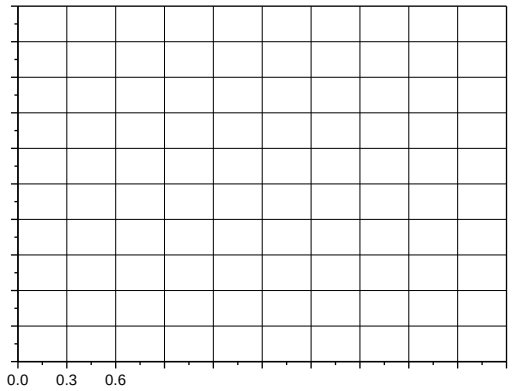



**Fig1 Output Characteristics**

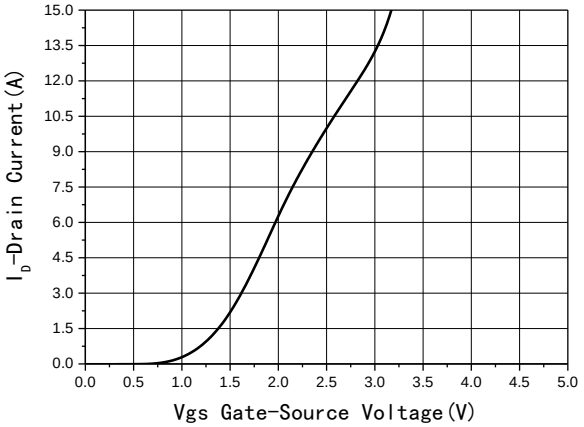



**Fig2 Transfer Characteristics**

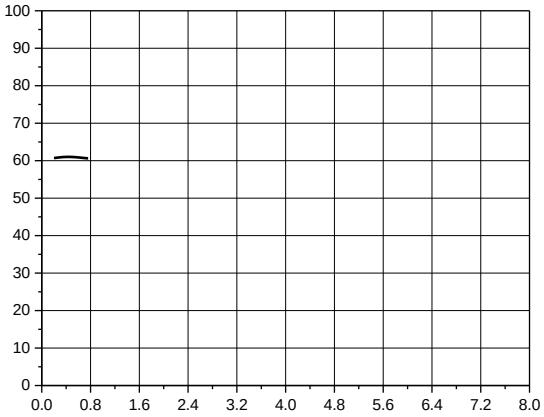



**Fig3 Rdson-Drain current**

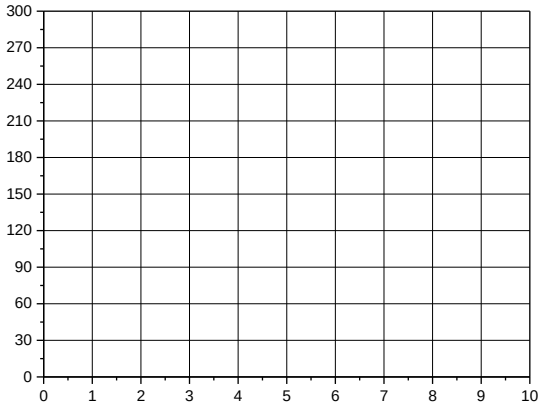



**Fig4 Capacitance vs Vds**

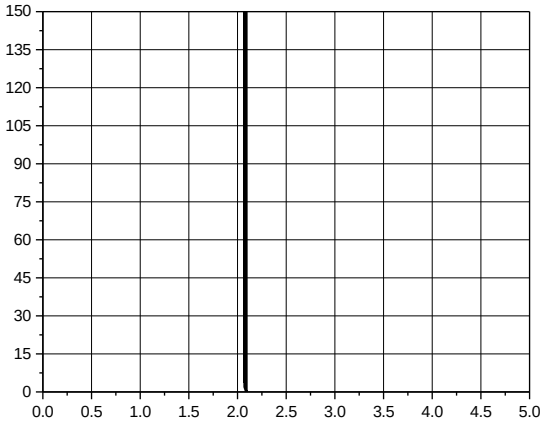



**Fig5 Rdson-Gate Drain voltage**

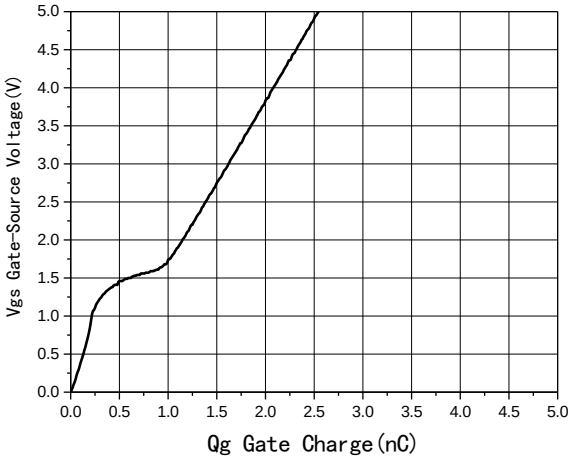



**Fig6 Gate Charge**

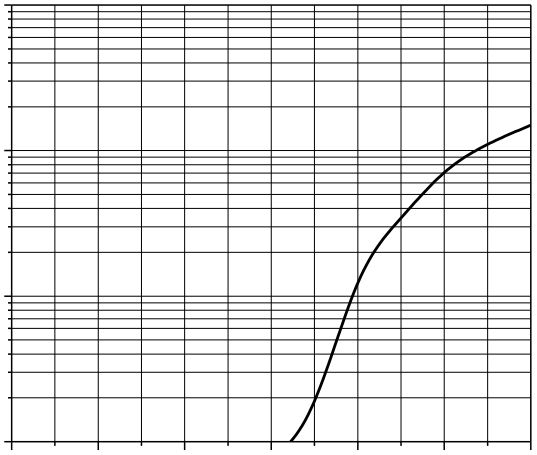


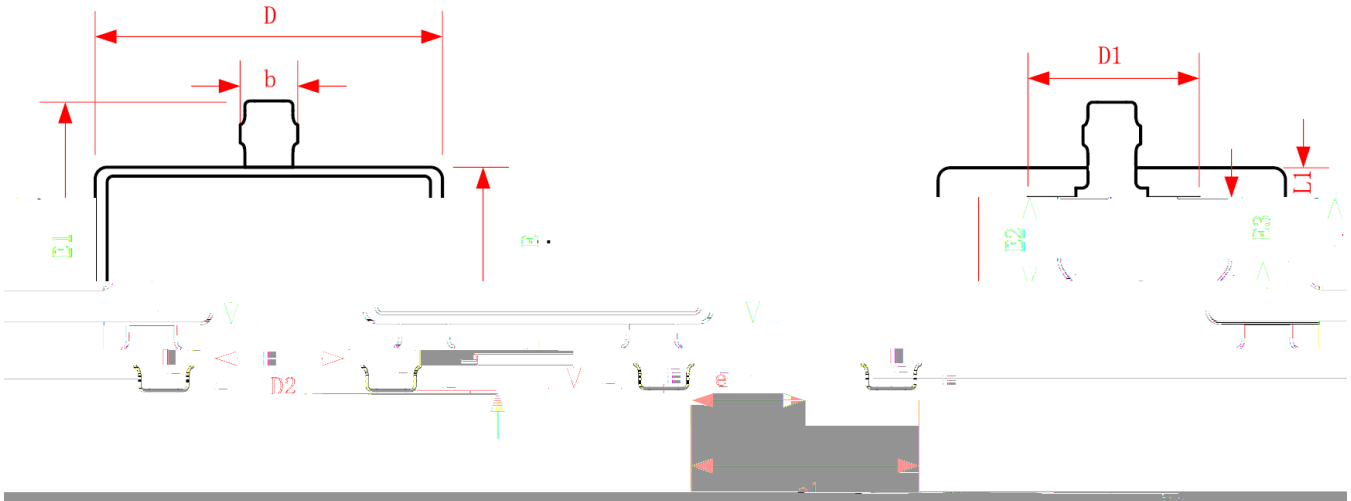
**Fig7 Power De-rating**



**Fig8 Source-Drain Diode Forward**

# Package Information

## ESOT-23-3L




| Symbol | Dimensions In Millimeters | | |
|---|---|---|---|
| | Min. | REF. | Max. |
| A | 0.500 | 0.550 | 0.600 |
| A1 | 0.368 | 0.398 | 0.428 |

| | | | | |
|---|---|---|---|---|
| 0.000 | 0.030 | | A2 | -0.030 |
| 0.152Ref | | | | |

(贝祝图)

| | | |
|---|---|---|
| 1.350 | E | 1.250 | 1.300 |
| 2.450 | E1 | 2.350 | 2.400 |
| 1.455 | D1 | 1.405 | 1.430 |
| 1.045 | D2 | 0.995 | 1.020 |

| | | | |
|---|---|---|---|
| L | 0.525 | 0.550 | 0.575 |
| L1 | 0.235 | 0.260 | 0.285 |
| | 0.950Ref | | |
| e1 | 1.800 | 1.900 | 2.000 |
| b | 0.410 | 0.480 | 0.550 |
| θ | 14° | 15° | 16° |