# GTT3434

**N-CHANNEL ENHANCEMENT MODE POWER MOSFET**

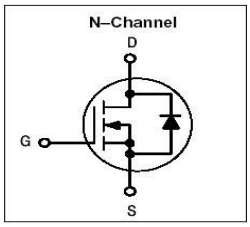
| | |
|---|---|
| $BV_{DSS}$ | 30V |
| $R_{DS(ON)}$ | 34mΩ |
| $I_D$ | 6.1A |

## Description

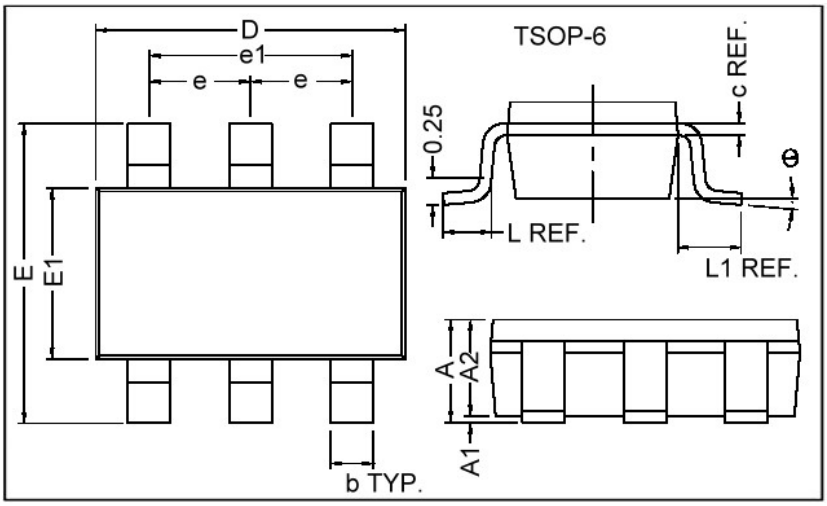
The GTT3434 uses advanced trench technology to provide excellent on-resistance and low gate charge.
The TSSOP-6 package is universally used for all commercial-industrial surface mount applications.

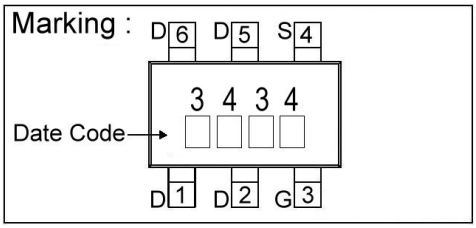
## Features

* Low on-resistance
*Capable of 2.5V gate drive




## Package Dimensions




| REF. | Millimeter | | REF. | Millimeter | |
|---|---|---|---|---|---|
| | Min. | Max. | | Min. | Max. |
| A | 1.10 MAX. | | L | 0.45 REF. | |
| A1 | 0 | 0.10 | L1 | 0.60 REF. | |
| A2 | 0.70 | 1.00 | θ | 0° | 10° |
| c | 0.12 REF. | | b | 0.30 | 0.50 |
| D | 2.70 | 3.10 | e | 0.95 REF. | |
| E | 2.60 | 3.00 | e1 | 1.90 REF. | |
| E1 | 1.40 | 1.80 | | | |

## Absolute Maximum Ratings

| Parameter | Symbol | Ratings | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 30 | V |
| Gate-Source Voltage | $V_{GS}$ | ±12 | V |
| Continuous Drain Current[3], $V_{GS}$@4.5V | $I_D$ @$T_A$=25℃ | 6.1 | A |
| Continuous Drain Current[3], $V_{GS}$@4.5V | $I_D$ @$T_A$=70℃ | 4.9 | A |
| Pulsed Drain Current[1] | $I_{DM}$ | 30 | A |
| Total Power Dissipation | $P_D$ @$T_A$=25℃ | 1.14 | W |
| Linear Derating Factor | | 0.01 | W/℃ |
| Operating Junction and Storage Temperature Range | Tj, Tstg | -55 ~ +150 | ℃ |

## Thermal Data

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Thermal Resistance Junction-ambient[3] Max. | Rthj-a | 110 | ℃/W |

## Electrical Characteristics (Tj = 25℃ unless otherwise specified)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | 30 | - | - | V | $V_{GS}$=0, $I_D$=250uA |
| Gate Threshold Voltage | $V_{GS(th)}$ | 0.6 | - | - | V | $V_{DS}$=$V_{GS}$, $I_D$=1mA |
| Forward Transconductance | $g_{fs}$ | - | 20 | - | S | $V_{DS}$=10V, $I_D$=6.1A |
| Gate-Source Leakage Current | $I_{GSS}$ | - | - | ±100 | nA | $V_{GS}$= ±12V |
| Drain-Source Leakage Current(Tj=25℃) | $I_{DSS}$ | - | - | 1 | uA | $V_{DS}$=30V, $V_{GS}$=0 |
| Drain-Source Leakage Current(Tj=70℃) | | - | - | 5 | uA | $V_{DS}$=24V, $V_{GS}$=0 |
| Static Drain-Source On-Resistance[2] | $R_{DS(ON)}$ | - | - | 34 | mΩ | $V_{GS}$=4.5V, $I_D$=6.1A |
| | | - | - | 50 | | $V_{GS}$=2.5V, $I_D$=2.0A |
| Total Gate Charge[2] | $Q_g$ | - | 8 | 12 | nC | $I_D$=6.1A<br>$V_{DS}$=15V<br>$V_{GS}$=4.5V |
| Gate-Source Charge | $Q_{gs}$ | - | 1.9 | - | | |
| Gate-Drain (“Miller”) Change | $Q_{gd}$ | - | 2.6 | - | | |
| Turn-on Delay Time[2] | $T_{d(on)}$ | - | 21 | - | ns | $V_{DS}$=15V<br>$I_D$=1A<br>$V_{GS}$=4.5V<br>$R_G$=6Ω<br>$R_L$=15Ω |
| Rise Time | $T_r$ | - | 45 | - | | |
| Turn-off Delay Time | $T_{d(off)}$ | - | 40 | - | | |
| Fall Time | $T_f$ | - | 30 | - | | |

## Source-Drain Diode

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| Forward On Voltage[2] | $V_{SD}$ | - | - | 1.2 | V | $I_S$=1.7A, $V_{GS}$=0V |
| Reverse Recovery Time[2] | $T_{rr}$ | - | 40 | - | ns | $I_S$=1.7A, dI/dt=100A/μs |

Notes: 1. Pulse width limited by Max. junction temperature.

2. Pulse width≦300us, duty cycle≦2%.

3. Surface mounted on 1 $in^2$ copper pad of FR4 board, t≦5sec; 180℃/W when mounted on Min. copper pad.

## Characteristics Curve

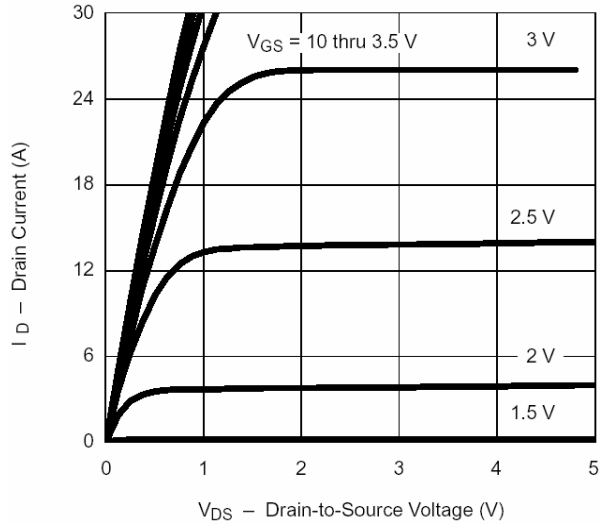



**Fig 1. Typical Output Characteristics**

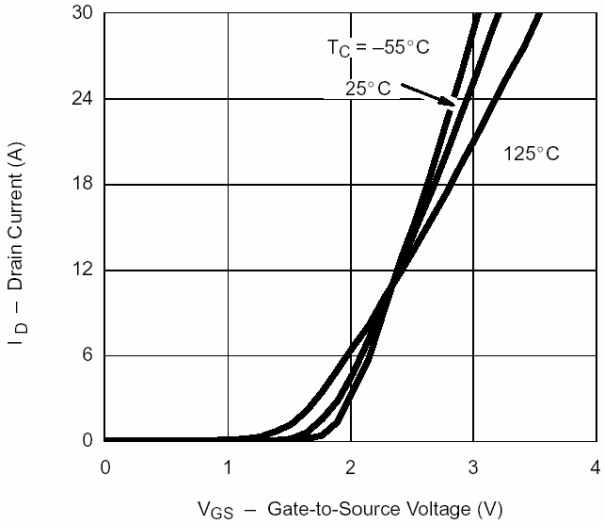



**Fig 2. Transfer Characteristics**

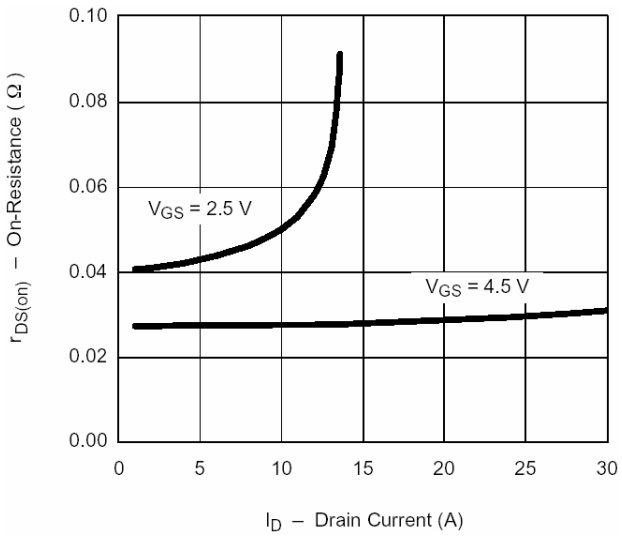



**Fig 3. On-Resistance v.s. Drain Current**

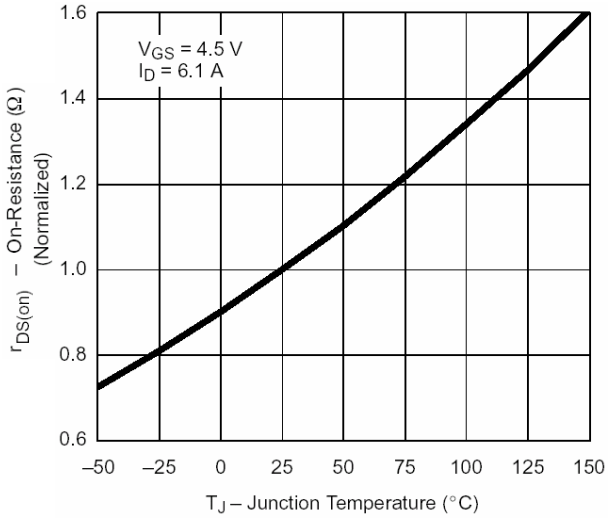



**Fig 4. On-Resistance v.s. Junction Temperature**

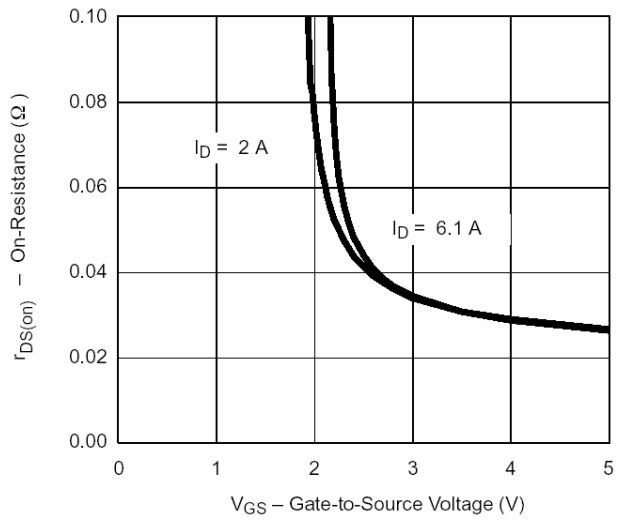



**Fig 5. On-Resistance v.s. Gate-Source Voltage**

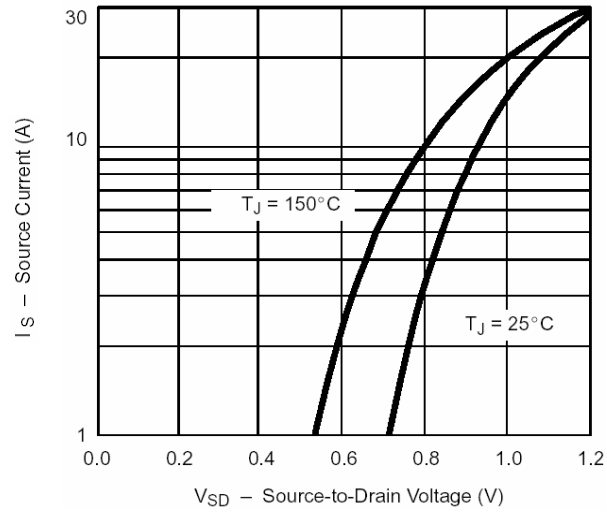



**Fig 6. Body Diode Characteristics**

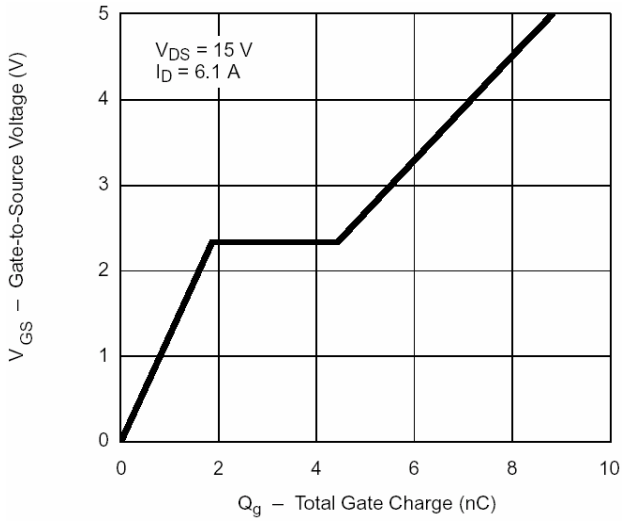



**Fig 7. Gate Charge Characteristics**

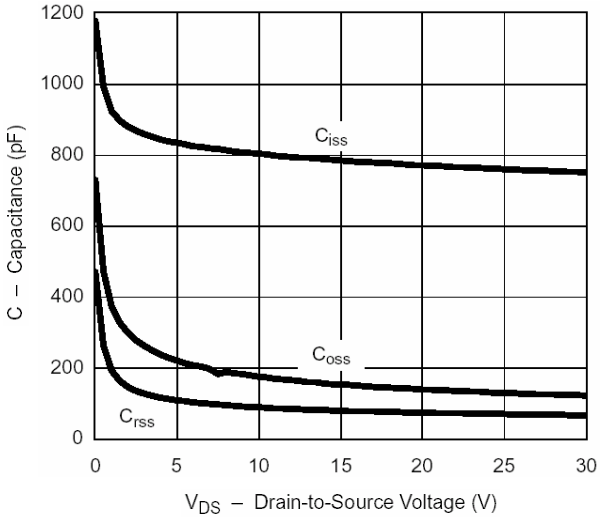



**Fig 8. Typical Capacitance Characteristics**

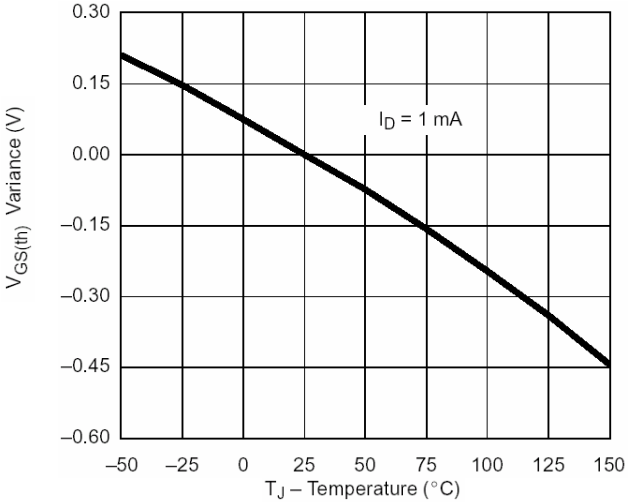



**Fig 9. Threshold Voltage**

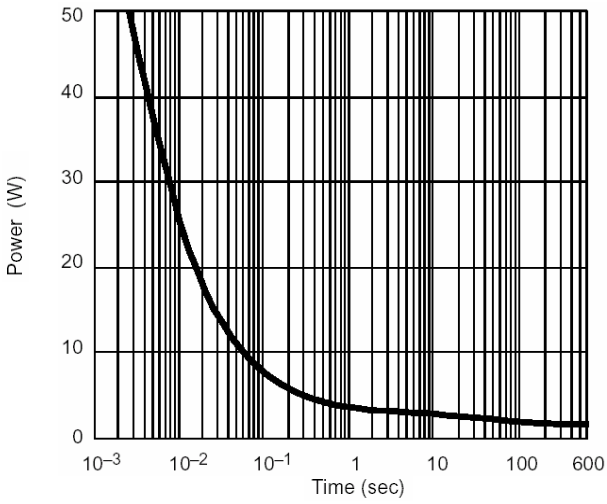



**Fig 10. Single Pulse Power**

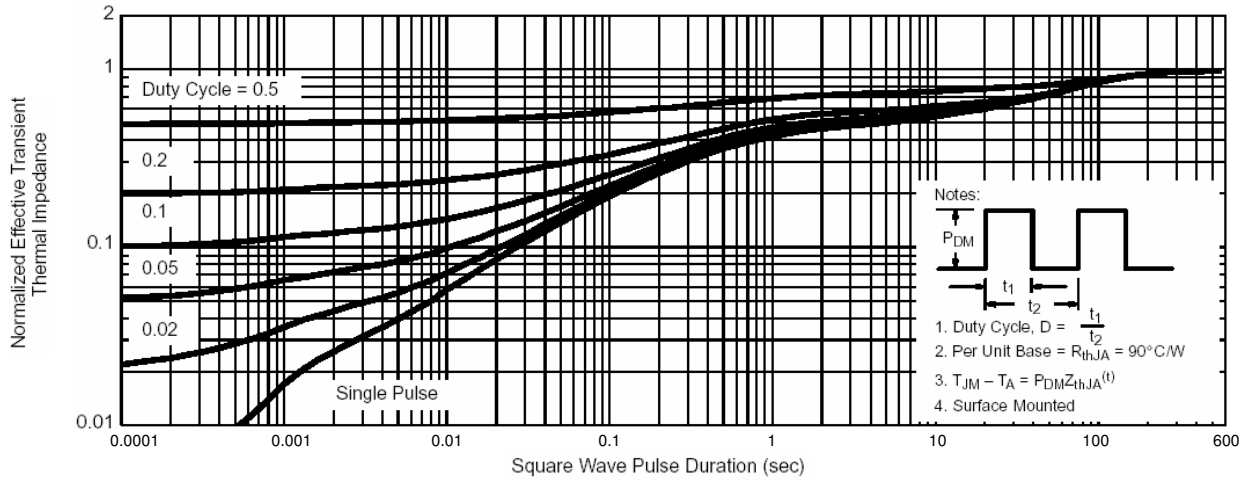



**Fig 11. Normalized Maximum Transient Thermal Impedance**

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