

GSM3411

30V P-Channel Enhancement Mode MOSFET

Product Description

GSM3411, P-Channel enhancement mode MOSFET, uses Advanced Trench Technology to provide excellent $R_{DS(ON)}$, low gate charge.

These devices are particularly suited for low voltage power management, and low in-line power loss are needed in commercial industrial surface mount applications.

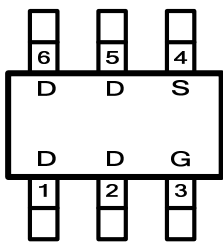
Features

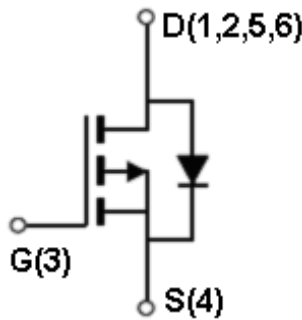
- -30V/-6.0A, $R_{DS(ON)}=36m\Omega@V_{GS}=10V$
- -30V/-4.5A, $R_{DS(ON)}=46m\Omega@V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- TSOP-6 package design

Applications

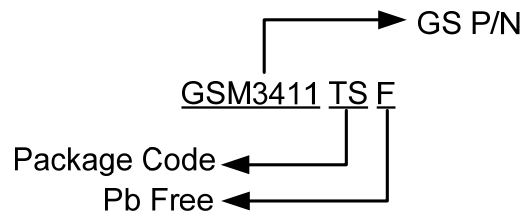
- Power Management in Note book
- LED Display
- DC-DC System
- LCD Panel

Packages & Pin Assignments

| GSM3411TSF(TSOP-6) | |
|---|-------------|
|  | |
| Pin | Description |
| 1 | Drain |
| 2 | Drain |
| 3 | Gate |
| 4 | Source |
| 5 | Drain |
| 6 | Drain |

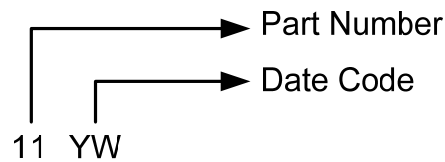


Ordering Information



| Part Number | Package | Quantity Reel |
|-------------|---------|---------------|
| GSM3411TSF | TSOP-6 | 3000 PCS |

Marking Information



Absolute Maximum Ratings

$T_A=25^{\circ}\text{C}$, unless otherwise noted

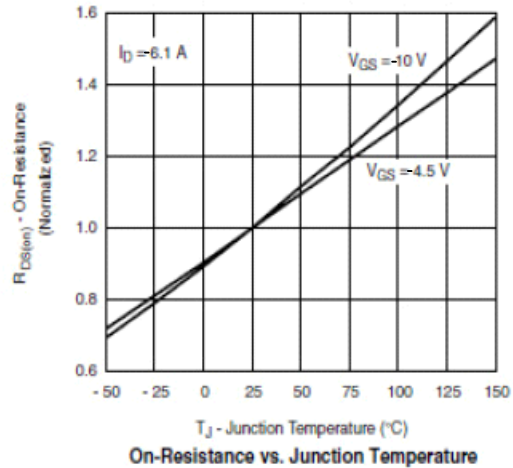
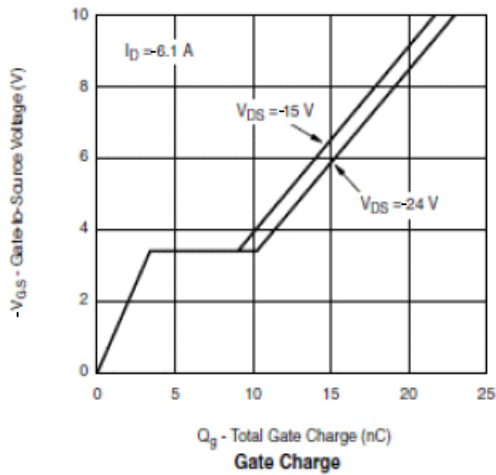
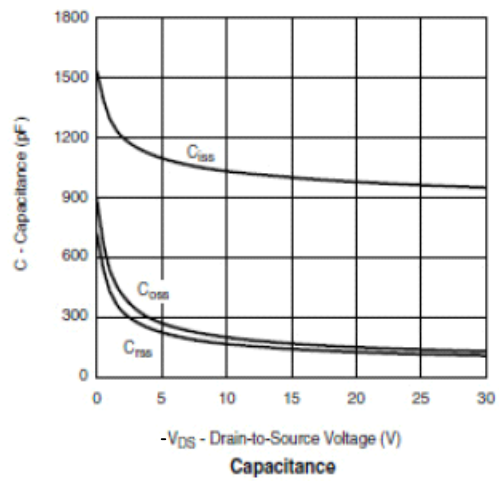
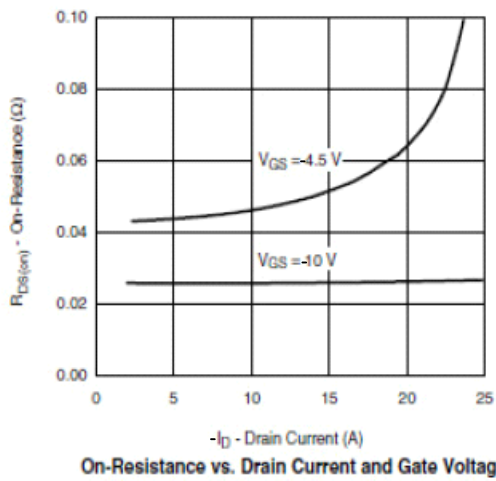
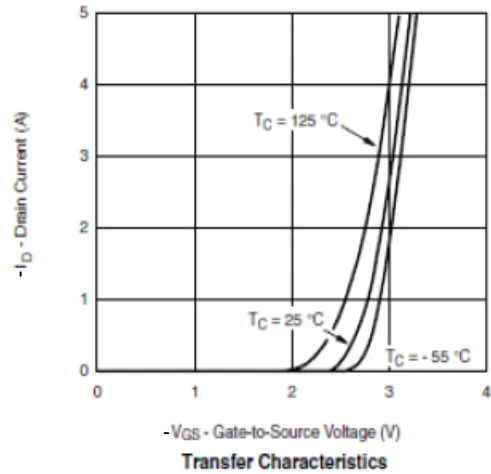
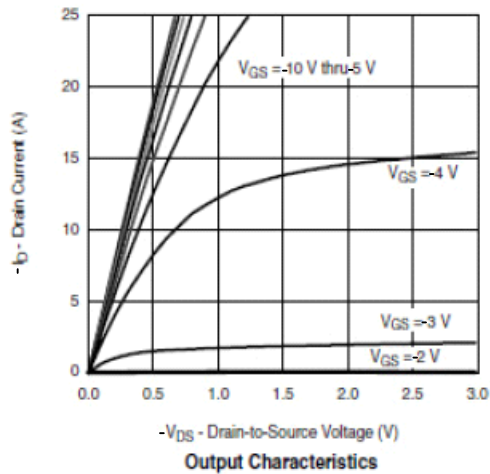
| Symbol | Parameter | Typical | Unit | |
|-----------------|---|--------------------------|-----------------------------|---|
| V_{DSS} | Drain-Source Voltage | -30 | V | |
| V_{GSS} | Gate-Source Voltage | ± 20 | V | |
| I_D | Continuous Drain Current($T_J=150^{\circ}\text{C}$) | $T_A=25^{\circ}\text{C}$ | -6.0 | A |
| | | $T_A=70^{\circ}\text{C}$ | -4.5 | A |
| I_{DM} | Pulsed Drain Current | -30 | A | |
| I_S | Continuous Source Current(Diode Conduction) | -1.7 | A | |
| P_D | Power Dissipation | $T_A=25^{\circ}\text{C}$ | 2.0 | W |
| | | $T_A=70^{\circ}\text{C}$ | 1.3 | W |
| T_J | Operating Junction Temperature | 150 | $^{\circ}\text{C}$ | |
| T_{STG} | Storage Temperature Range | -55/150 | $^{\circ}\text{C}$ | |
| $R_{\theta JA}$ | Thermal Resistance-Junction to Ambient | 120 | $^{\circ}\text{C}/\text{W}$ | |

Electrical Characteristics

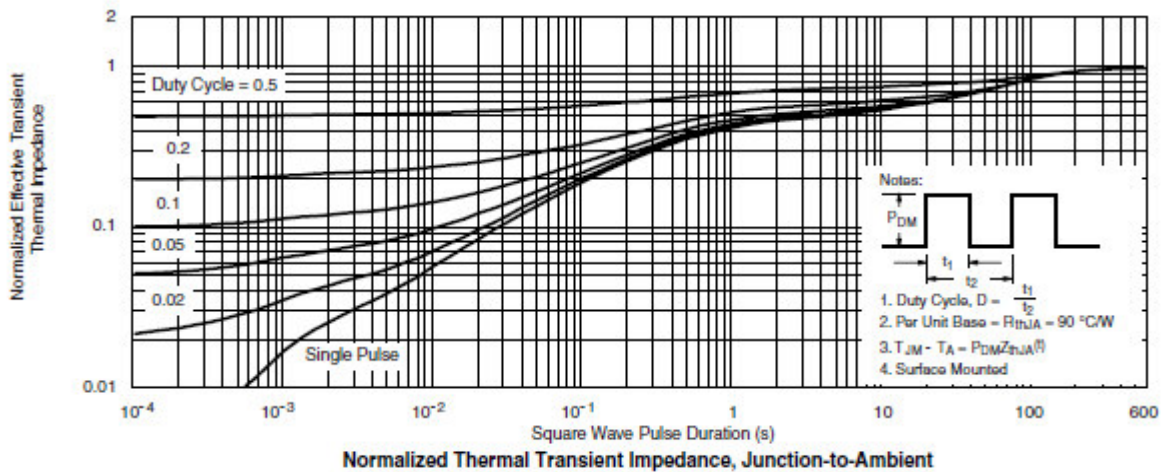
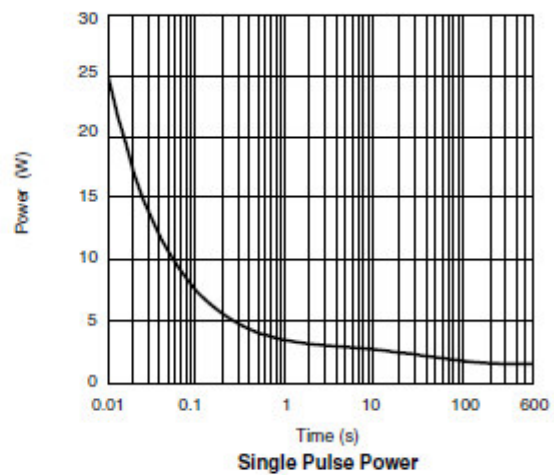
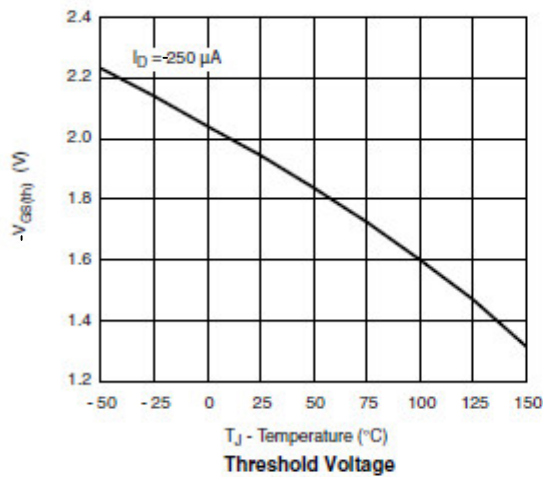
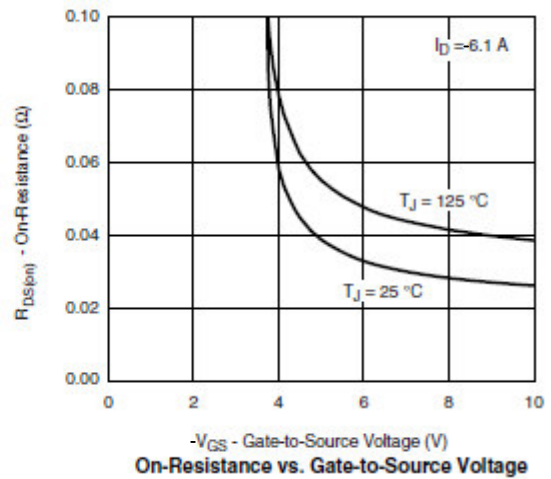
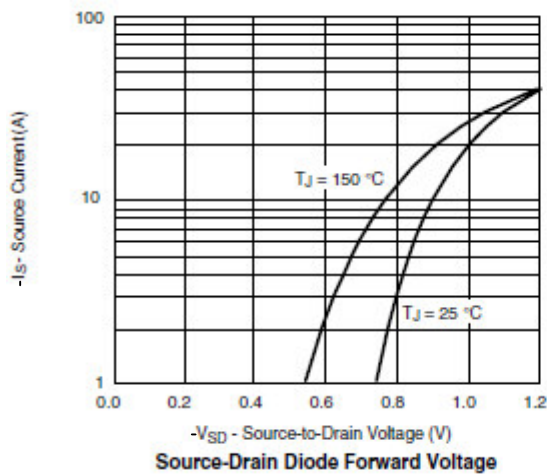
T_A=25°C, unless otherwise noted

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|----------------------|---------------------------------|---|------|------|------|------|
| Static | | | | | | |
| V _{(BR)DSS} | Drain-Source Breakdown Voltage | V _{GS} =0V, I _D =-250μA | -30 | | | V |
| V _{GS(th)} | Gate Threshold Voltage | V _{DS} =V _{GS} , I _D =-250μA | -0.5 | | -1.8 | |
| I _{GSS} | Gate Leakage Current | V _{DS} =0V, V _{GS} =±12V | | | ±100 | nA |
| I _{DSS} | Zero Gate Voltage Drain Current | V _{DS} =-24V, V _{GS} =0V | | | -1 | μA |
| | | V _{DS} =-24V, V _{GS} =0V, T _J =85°C | | | -30 | |
| I _{D(on)} | On-State Drain Current | V _{DS} ≤ -5V, V _{GS} =-10V | -10 | | | A |
| R _{DS(on)} | Drain-Source On-Resistance | V _{GS} =-10V, I _D =-6A | | 32 | 36 | mΩ |
| | | V _{GS} =-4.5V, I _D =-4.5A | | 38 | 46 | |
| g _{FS} | Forward Transconductance | V _{DS} =-5V, I _D =-4.0A | | 10 | | S |
| V _{SD} | Diode Forward Voltage | I _S =-1.7A, V _{GS} =0V | | -0.7 | -1.3 | V |
| Dynamic | | | | | | |
| Q _q | Total Gate Charge | V _{DS} =-15V, V _{GS} =-4.5V, I _D =-6.0A | | 10 | 18 | nC |
| Q _{gs} | Gate-Source Charge | | | 1.6 | | |
| Q _{gd} | Gate-Drain Charge | | | 3.0 | | |
| C _{iss} | Input Capacitance | V _{DS} =-15V, V _{GS} =0V, f=1MHz | | 900 | | pF |
| C _{oss} | Output Capacitance | | | 150 | | |
| C _{rss} | Reverse Transfer Capacitance | | | 120 | | |
| t _{d(on)} | Turn-On Time | V _{DD} =-15V, R _L =15Ω, I _D =-5.0A, V _{GEN} =-10V, R _G =6Ω | | 8 | 18 | ns |
| t _r | | | | 8 | 18 | |
| t _{d(off)} | Turn-Off Time | | | 25 | 50 | |
| t _f | | | | 25 | 35 | |

Typical Performance Characteristics

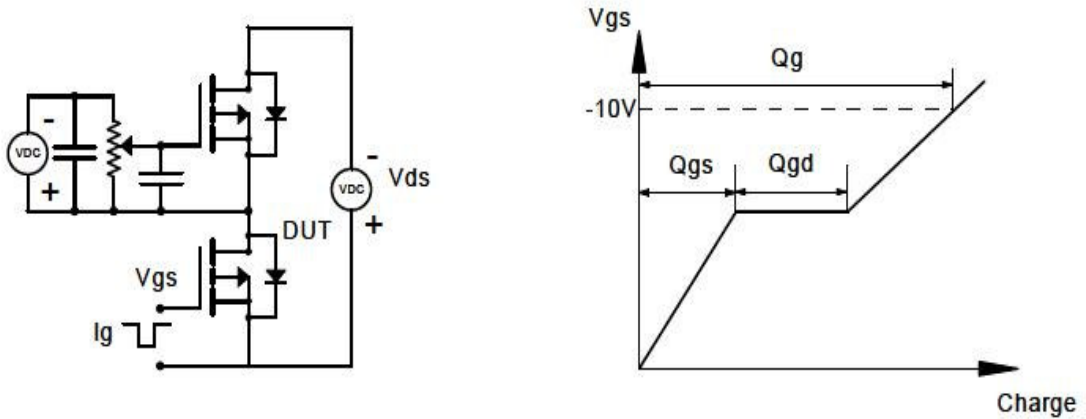


Typical Performance Characteristics (continue)

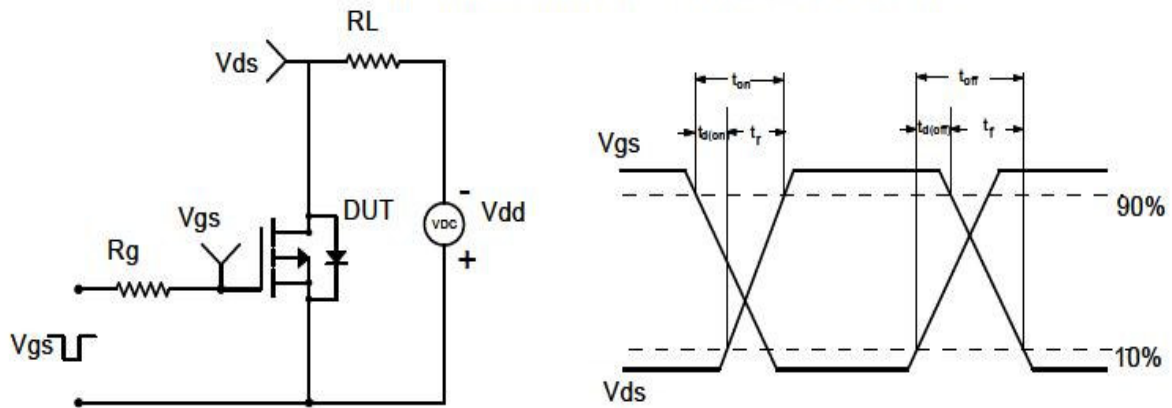


Typical Performance Characteristics (continue)

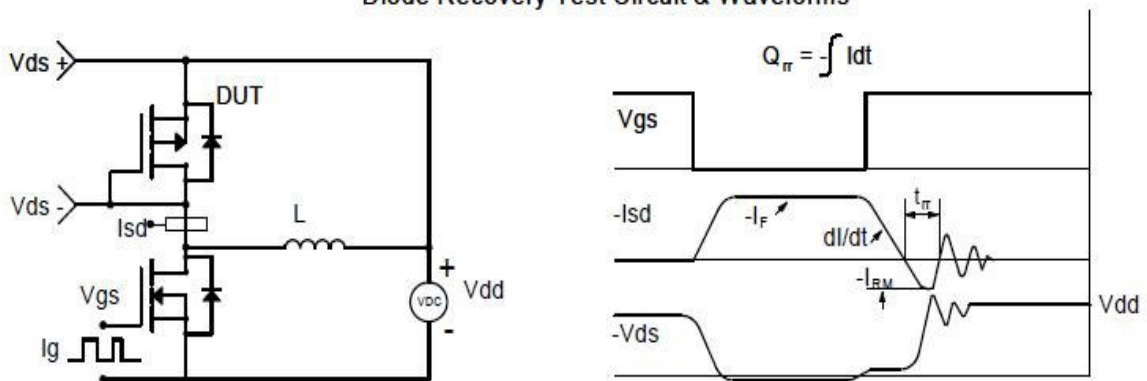
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms

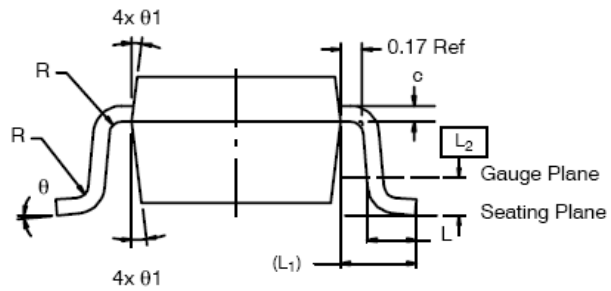
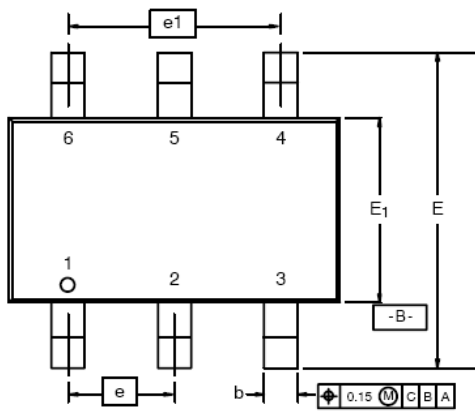


Diode Recovery Test Circuit & Waveforms



Package Dimension

TSOP-6







| Symbol | Dimensions In Millimeters | | | Dimensions In Inches | | |
|-----------|---------------------------|------|------|----------------------|-------|-------|
| | Min | Nom | Max | Min | Nom | Max |
| A | 0.91 | - | 1.10 | 0.036 | - | 0.043 |
| A1 | 0.01 | - | 0.10 | 0.0004 | - | 0.004 |
| A2 | 0.90 | - | 1.00 | 0.035 | 0.038 | 0.039 |
| b | 0.30 | 0.32 | 0.45 | 0.012 | 0.013 | 0.018 |
| c | 0.10 | 0.15 | 0.20 | 0.004 | 0.006 | 0.008 |
| D | 2.95 | 3.05 | 3.10 | 0.116 | 0.120 | 0.122 |
| E | 2.70 | 2.85 | 2.98 | 0.106 | 0.112 | 0.117 |
| E1 | 1.55 | 1.65 | 1.70 | 0.061 | 0.065 | 0.067 |
| e | 1.00 BSC | | | 0.0394 BSC | | |
| e1 | 1.90 | 2.00 | 2.10 | 0.075 | 0.080 | 0.085 |
| L | 0.35 | - | 0.50 | 0.014 | - | 0.020 |
| L1 | 0.60 Ref | | | 0.024 Ref | | |
| L2 | 0.25 BSC | | | 0.010 BSC | | |
| R | 0.10 | - | - | 0.004 | - | - |
| θ | 0° | 4° | 8° | 0° | 4° | 8° |
| θ1 | 7° Nom | | | 7° Nom | | |



NOTICE

Information furnished is believed to be accurate and reliable. However Globaltech Semiconductor assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties, which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Globaltech Semiconductor. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information without express written approval of Globaltech Semiconductor.

CONTACT US

| GS Headquarter | |
|---|--|
|  | 4F.,No.43-1,Lane11,Sec.6,Minquan E.Rd NeiHu District Taipei City 114, Taiwan (R.O.C) |
|  | 886-2-2657-9980 |
|  | 886-2-2657-3630 |
|  | sales_twn@gs-power.com |

| Wu-Xi Branch | |
|---|--|
|  | No.21 Changjiang Rd., WND, Wuxi, Jiangsu, China (INFO. & TECH. Science Park Building A 210 Room) |
|  | 86-510-85217051 |
|  | 86-510-85211238 |
|  | sales_cn@gs-power.com |

| RD Division | |
|---|--------------------------------------|
|  | 824 Bolton Drive Milpitas. CA. 95035 |
|  | 1-408-457-0587 |