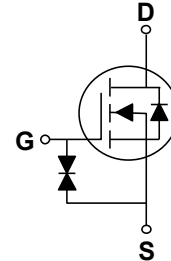


SOT-883



Features

- $R_{DS(ON)} \leq 3\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 4\Omega @ V_{GS}=4.5V$
- High Density Cell Design For Ultra Low On-Resistance
- Very Low Leakage Current In Off Condition
- ESD Protected 2KV HBM

Mechanical Data

- Case : SOT-883
- Marking : X1

Ordering Information

| Part No. | Remark | Package |
|------------|--------------|---------|
| TVMNG30H | General | SOT-883 |
| TVMNG30H-H | Halogen Free | |

Maximum Ratings (TA=25°C unless otherwise noted)

| Parameter | Symbol | Limit | Unit |
|--|-----------------|---------|------|
| Drain-Source Voltage | V_{DSS} | 60 | V |
| Gate-Source Voltage | V_{GSS} | ±20 | V |
| Continuous Drain | I_D | 300 | mA |
| Pulsed Drain Current (NOTE 1) | I_{DM} | 1.8 | A |
| Power Dissipation | P_D | 350 | mW |
| Junction and Storage Temperature Range | T_J, T_{STG} | -55~150 | °C |
| Typical Thermal Resistance | $R_{\theta JA}$ | 357 | °C/W |

NOTE :

- 1.Maximum DC current limited by the package
- 2.Pulse test : pulse width $\leq 300\mu s$, duty cycle $\leq 2.0\%$.



Electrical Characteristics (TA=25°C unless otherwise noted)

| Parameter | Conditions | Symbol | Min. | Typ. | Max. | Unit |
|---------------------------------|-------------------------------|---------------|------|------|----------|----------|
| Static | | | | | | |
| Drain-source breakdown voltage | $V_{GS}=0V, I_D=10\mu A$ | $V_{(BR)DSS}$ | 60 | - | - | V |
| Gate-threshold voltage | $V_{DS}=V_{GS}, I_D=250\mu A$ | $V_{GS(th)}$ | 1.1 | - | 1.6 | V |
| Drain-Source On-Resistance | $V_{GS}=5V, I_D=50mA$ | $R_{DS(on)}$ | - | - | 2.8 | Ω |
| | $V_{GS}=4.5V, I_D=200mA$ | | - | - | 4.0 | |
| | $V_{GS}=10V, I_D=500mA$ | | - | - | 3.0 | |
| Zero gate voltage drain current | $V_{DS}=60V, V_{GS}=0V$ | I_{DSS} | - | - | 1 | μA |
| Gate-source leakage current | $V_{DS}=0V, V_{GS}=\pm 20V$ | I_{GSS} | - | - | ± 10 | μA |
| Forward Transconductance | $V_{DS}=15V, I_D=250mA$ | g_{fs} | 100 | - | - | mS |

Dynamic Characteristics

| | | | | | | |
|------------------------------|---|--------------|---|---|-----|----|
| Total Gate Charge | $V_{DS} = 15V, V_{GS} = 5V, I_D=200mA$ | Q_g | - | - | 0.8 | nC |
| Turn-On Time | $V_{DD}=30V, R_L=150\Omega, I_D=200mA, V_{GEN}=10V, R_G=10\Omega$ | $t_{d(on)}$ | - | - | 20 | ns |
| Turn-Off Time | | $t_{d(off)}$ | - | - | 40 | |
| Input capacitance | $V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$ | C_{iss} | - | - | 35 | pF |
| Output capacitance | | C_{oss} | - | - | 12 | |
| Reverse transfer capacitance | | C_{rss} | - | - | 7 | |

Source-Drain Diode

| | | | | | | |
|---------------------------|------------------------|----------|---|------|-----|----|
| Diode Forward Voltage | $V_{GS}=0V, I_S=200mA$ | V_{SD} | - | 0.82 | 1.3 | V |
| Continuous Source Current | | I_S | - | - | 300 | mA |



Characteristics Curves

FIG. 1-Output Characteristics

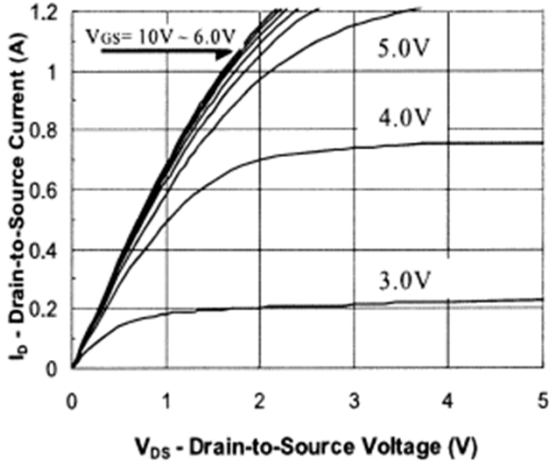


FIG. 2-Breakdown Voltage VS. Junction Temperature

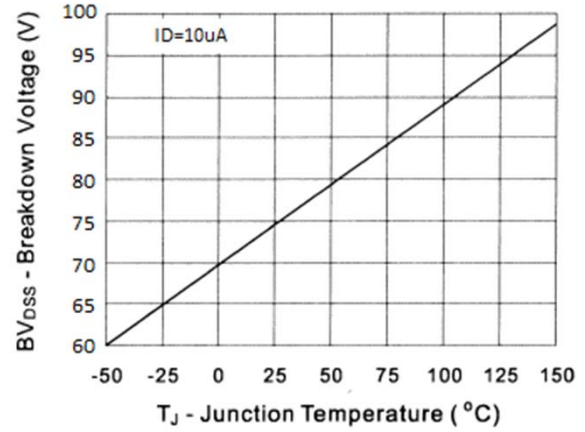


FIG. 3-On-Resistance VS. Drain Current

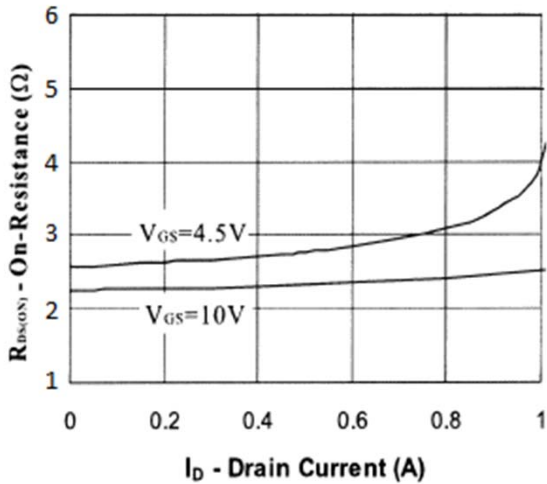


FIG. 4-On-Resistance VS. Gate-Source voltage

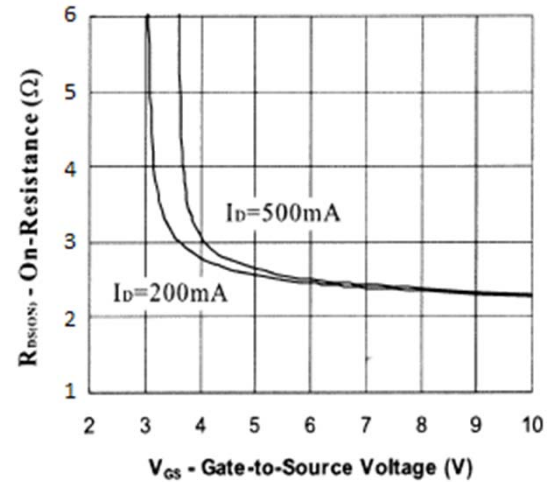


FIG. 5-On-Resistance VS. Junction Temperature

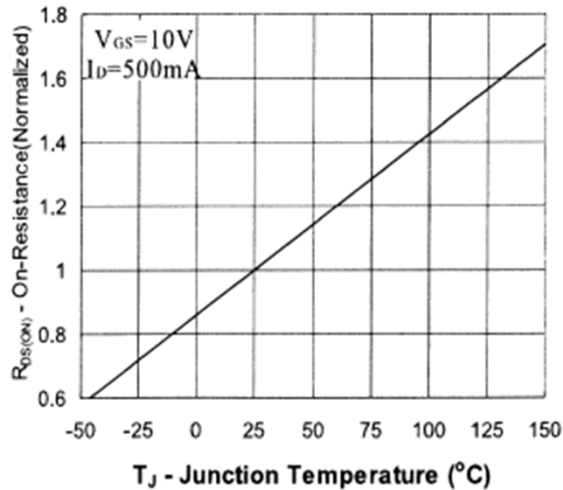
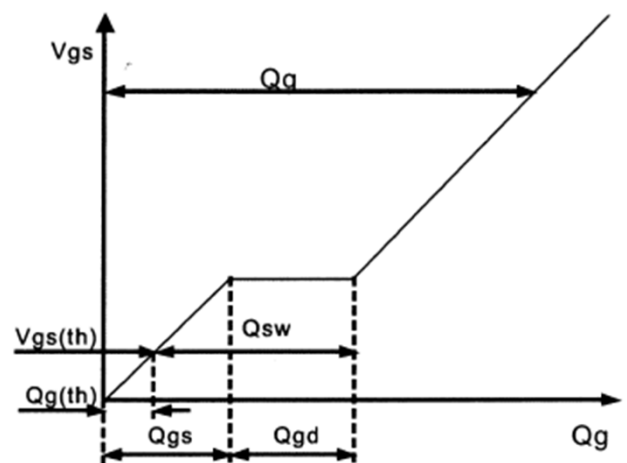


FIG. 6-Gate Charge Waveform





Characteristics Curves

FIG. 7-Gate Charge

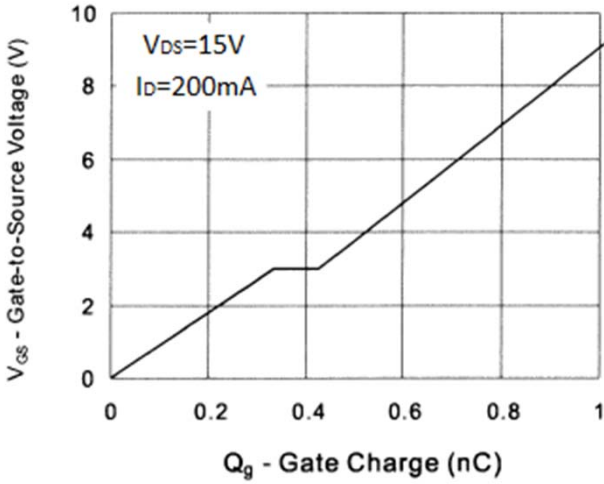


FIG. 8-Threshold Voltage VS. Temperature

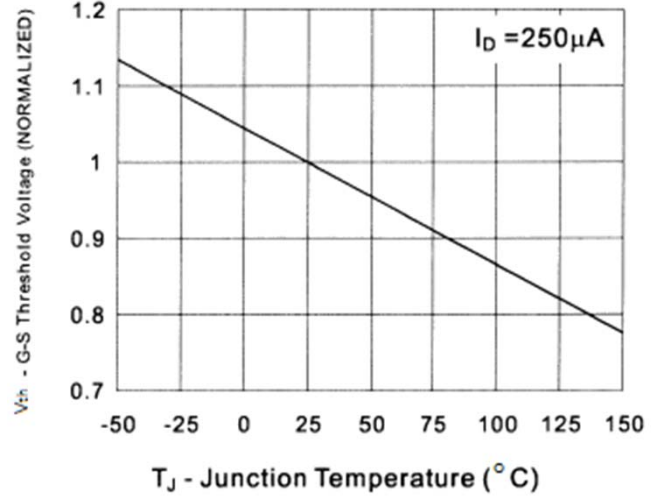


FIG. 9-Capacitance VS. Drain to Source Voltage

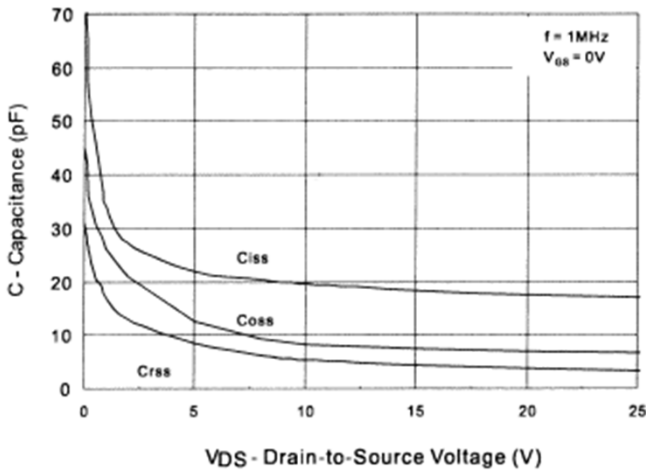
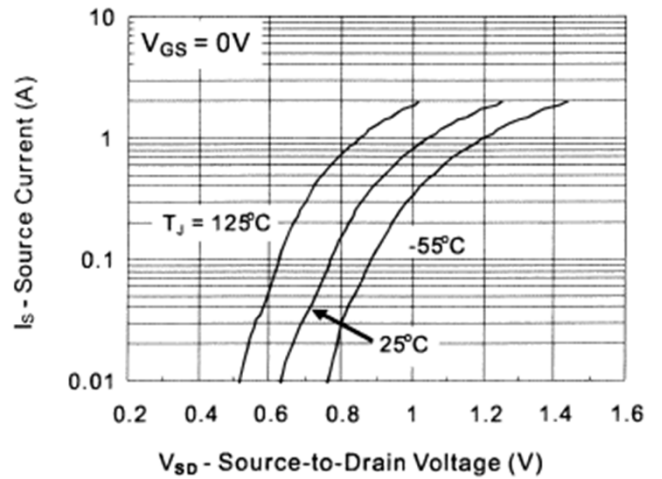
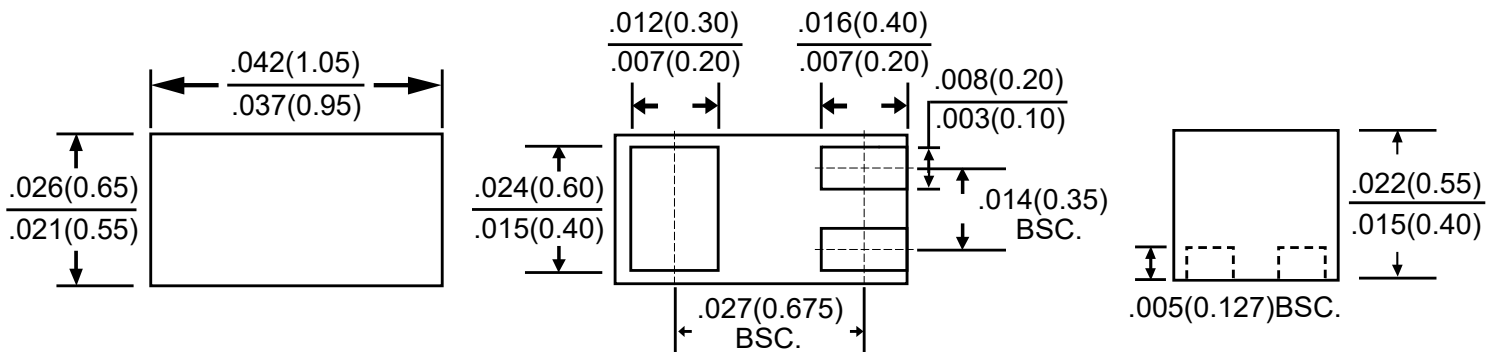


FIG. 10-Source-Drain Diode Forward Voltage



Package Outline Dimensions



SOT-883

Dimensions in inches and (millimeters)



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