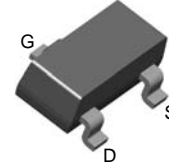


# MMBFJ270

## P-Channel Switch

### Features

- This device is designed for low level analog switching sample and hold circuits and chopper stabilized amplifiers.
- Sourced from process 88.



SOT-23  
Mark : 61S

### Absolute Maximum Ratings (Note1) $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol         | Parameter  | Value     | Units            |
|----------------|--|-----------|------------------|
| $V_{DG}$       | Drain-Gate Voltage                               | -30       | V                |
| $V_{GS}$       | Gate-Source Voltage                              | 30        | V                |
| $I_{GF}$       | Forward Gate Current                             | 50        | mA               |
| $T_J, T_{STG}$ | Operating and Storage Junction Temperature Range | -55 ~ 150 | $^\circ\text{C}$ |

Note1 : These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.  
These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations

### Thermal Characteristics

| Symbol          | Parameter   | Value | Units                      |
|-----------------|---|-------|----------------------------|
| $P_D$           | Total Device Dissipation<br>Derate above $25^\circ\text{C}$ | 225   | mW                         |
|                 |   | 1.8   | $\text{mW}/^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient (Note2)             | 556   | $^\circ\text{C}/\text{W}$  |

Note2 : Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch

### Electrical Characteristics $T_C = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | MIN | MAX | Units |
|--------|-----------|----------------|-----|-----|-------|
|--------|-----------|----------------|-----|-----|-------|

#### Off Characteristics (Note3)

|               |                               |   |     |     |    |
|---------------|-------------------------------|---|-----|-----|----|
| $V_{(BR)GSS}$ | Gate-Source Breakdown Voltage | $I_G = 1.0\mu\text{A}, V_{DS} = 0$          | 30  |     | V  |
| $I_{GSS}$     | Gate Reverse Current          | $V_{GS} = 20\text{V}, V_{DS} = 0$           |     | 200 | pA |
| $V_{GS(off)}$ | Gate-Source Cutoff Voltage    | $V_{DS} = -15\text{V}, I_D = -1.0\text{nA}$ | 0.5 | 2.0 | V  |

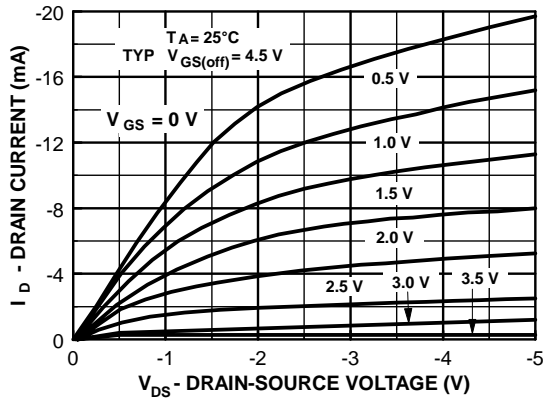
#### On Characteristics (Note3)

|           |                                   |  |      |       |                  |
|-----------|-----------------------------------|--|------|-------|------------------|
| $I_{DSS}$ | Zero-Gate Voltage Drain Current * | $V_{DS} = -15\text{V}, V_{GS} = 0$                           | -2.0 | -15   | mA               |
| gfs       | Forward Transferconductance       | $V_{GS} = 0\text{V}, V_{DS} = 15\text{V}, f = 1.0\text{kHz}$ | 6000 | 15000 | $\mu\text{mhos}$ |
| goss      | Common- Source Output Conductance | $V_{GS} = 0\text{V}, V_{DS} = 15\text{V}, f = 1.0\text{kHz}$ |      | 200   | $\mu\text{mhos}$ |

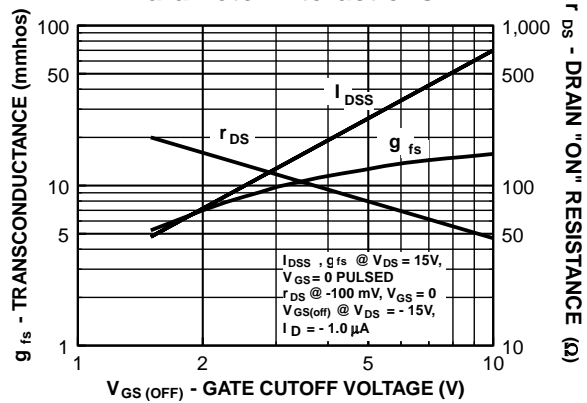
Note3 : Short duration test pulse used to minimize self-heating effect.

# Typical Characteristics

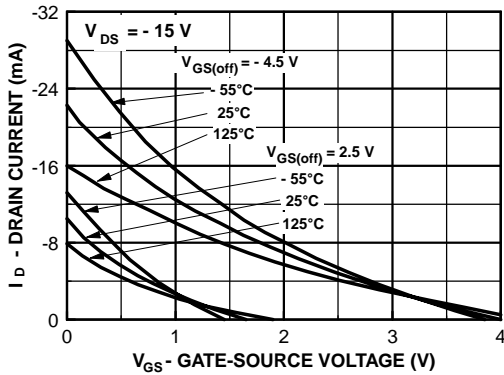
### Common Drain-Source



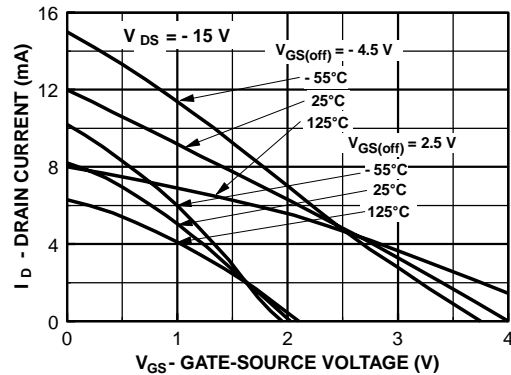
### Parameter Interactions



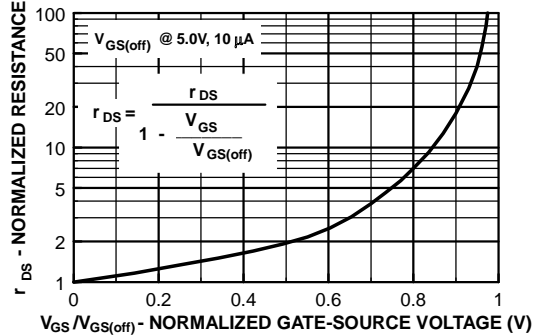
### Transfer Characteristics



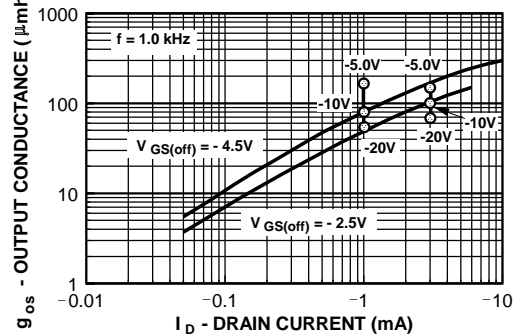
### Transfer Characteristics



### Normalized Drain Resistance vs Bias Voltage

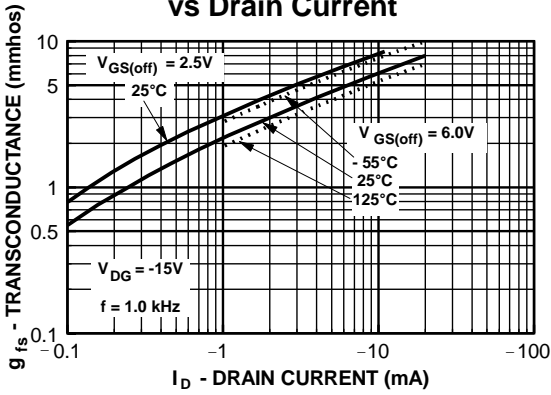


### Output Conductance vs Drain Current

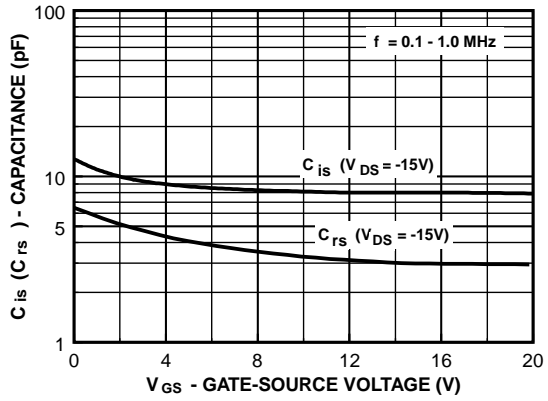


Typical Characteristics (Continued)

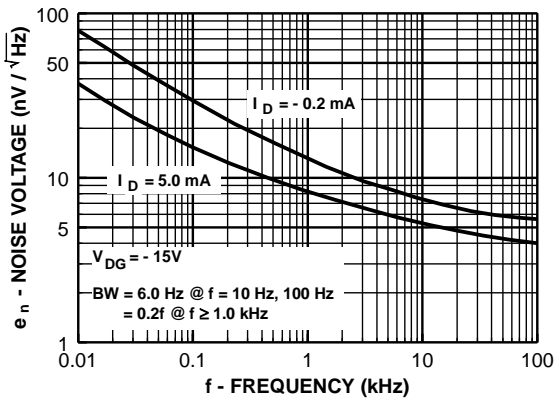
Transconductance vs Drain Current



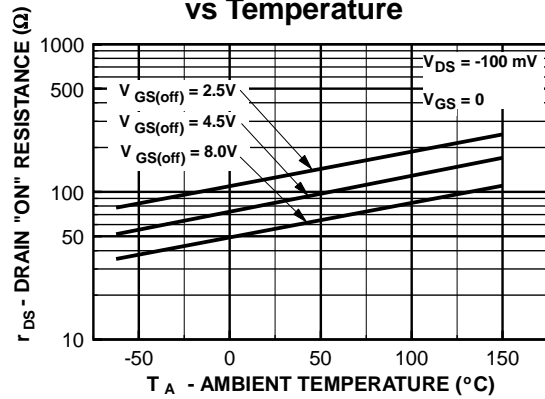
Capacitance vs Voltage



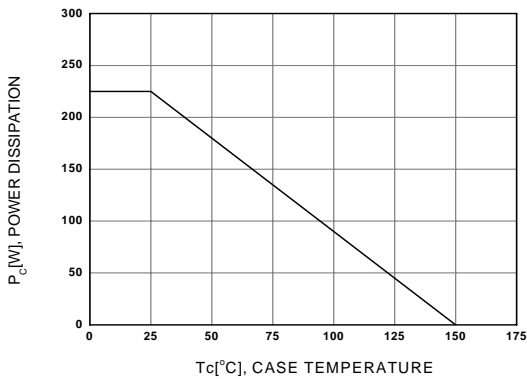
Noise Voltage vs Frequency



Channel Resistance vs Temperature

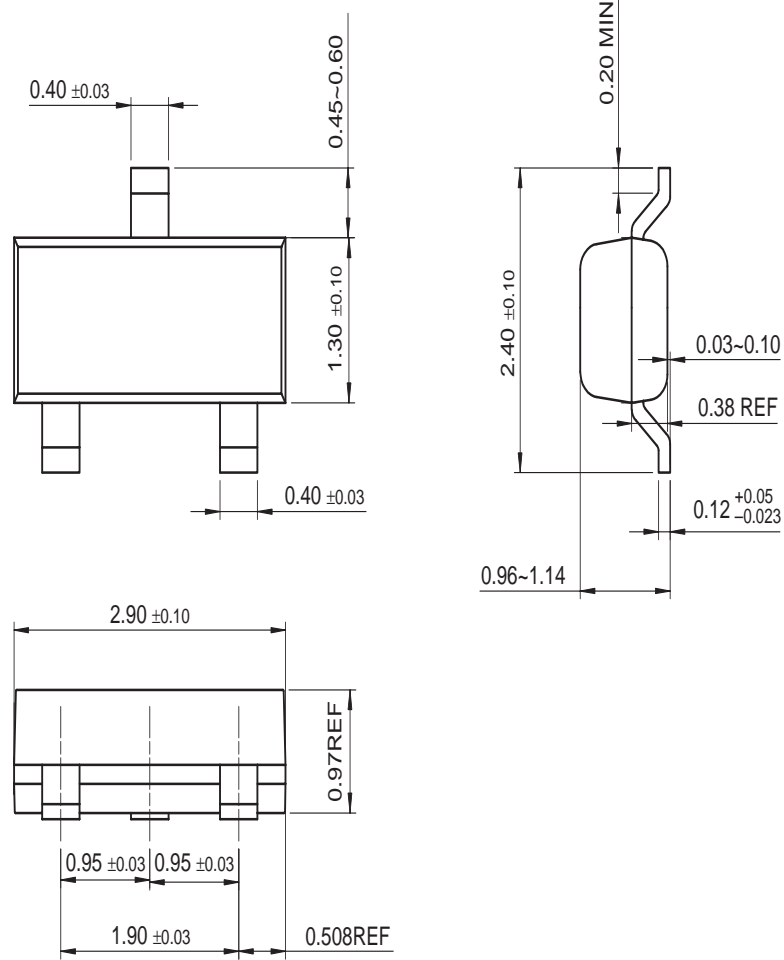


Power Derating



# Package Dimensions

## SOT-23






Dimensions in Millimeters



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