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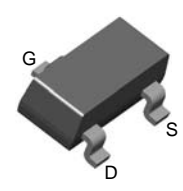
August 2008

# 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	225	mW
	Derate above $25^\circ\text{C}$	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
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#### 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

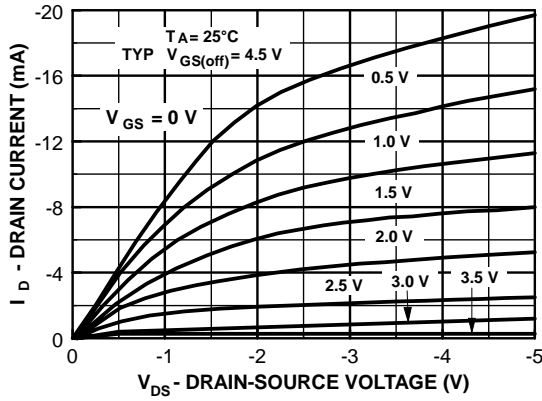
#### On Characteristics (Note3)

$I_{DSS}$	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	$\mu\text{mhos}$

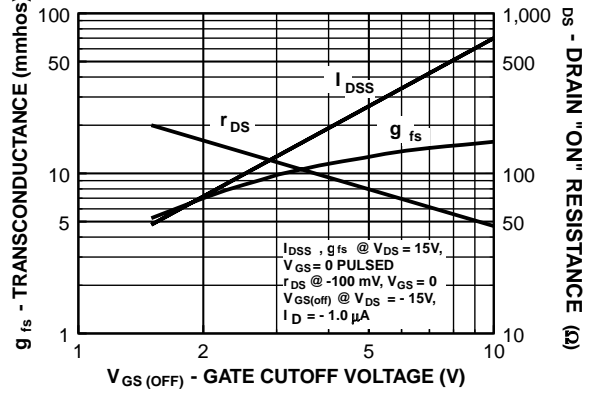
Note3 : Short duration test pulse used to minimize self-heating effect.

# Typical Characteristics

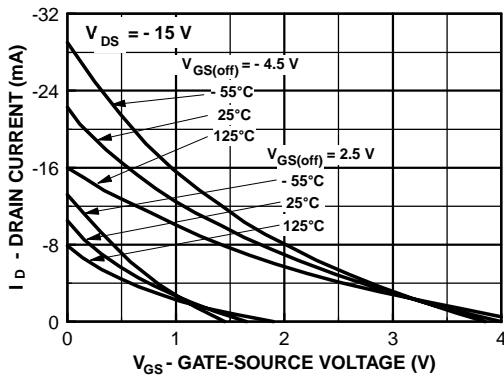
### Common Drain-Source



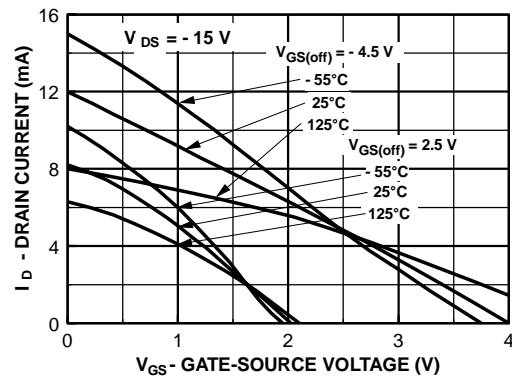
### Parameter Interactions



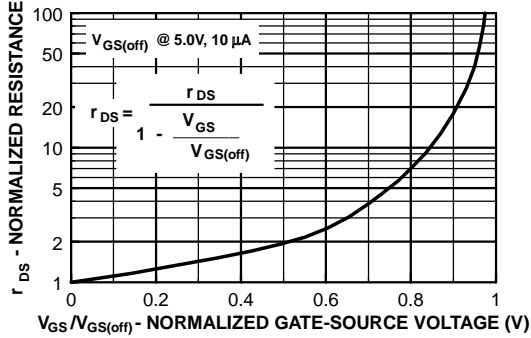
### Transfer Characteristics



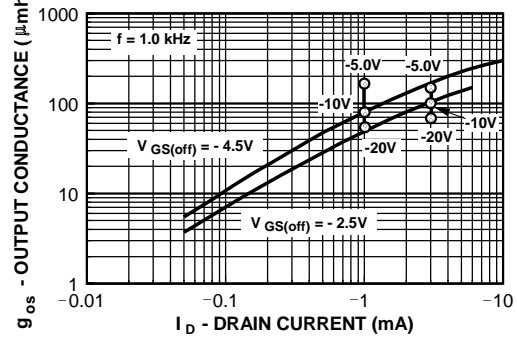
### Transfer Characteristics



### Normalized Drain Resistance vs Bias Voltage

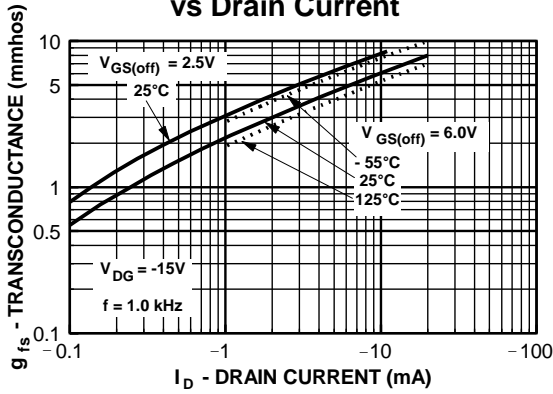


### Output Conductance vs Drain Current

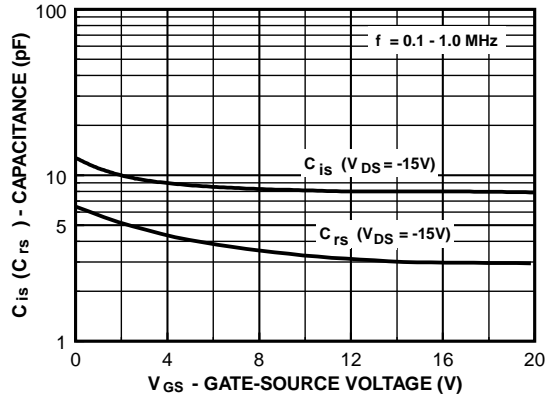


Typical Characteristics (Continued)

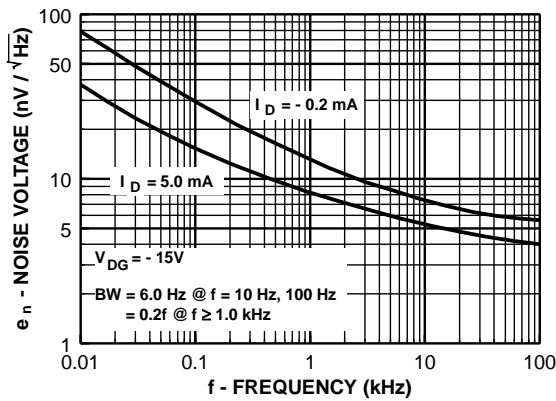
Transconductance vs Drain Current



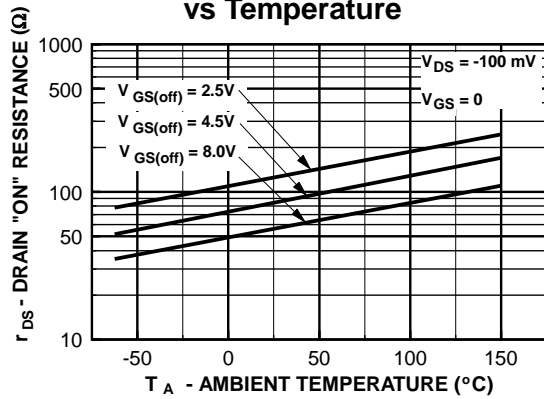
Capacitance vs Voltage



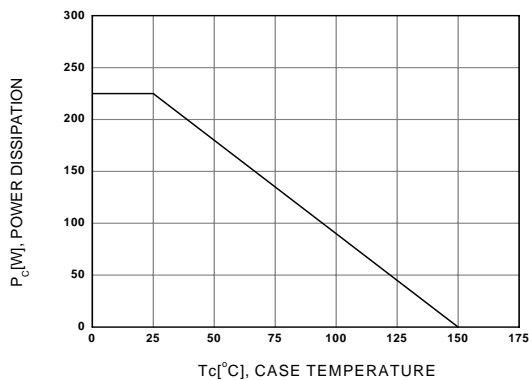
Noise Voltage vs Frequency



Channel Resistance vs Temperature

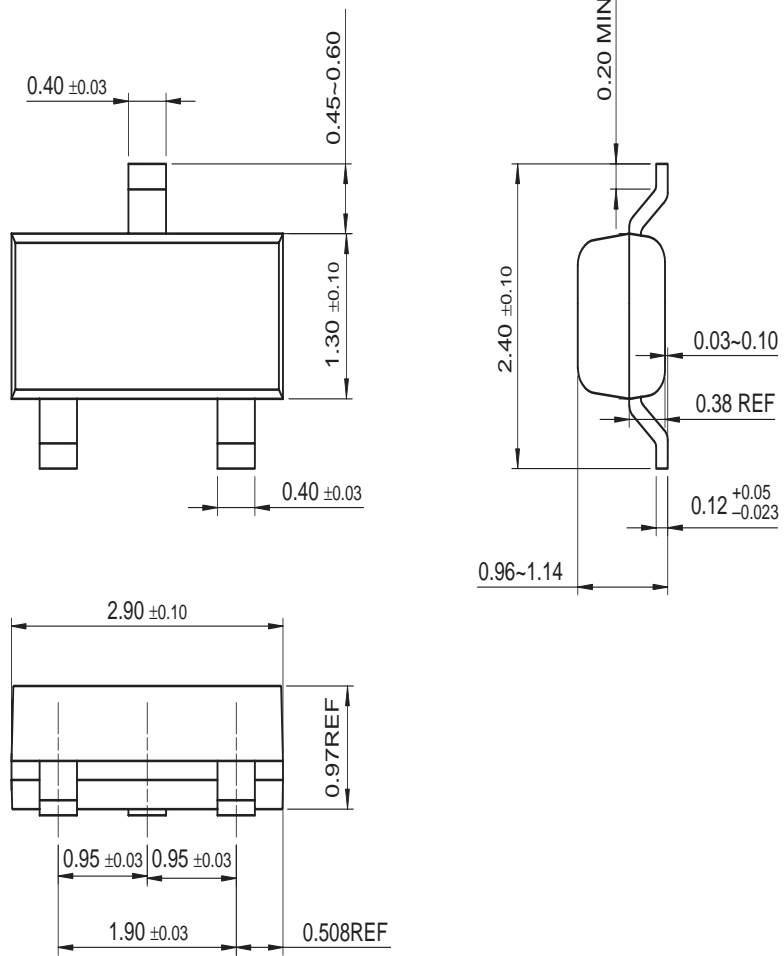


Power Derating



# Package Dimensions

## SOT-23



Dimensions in Millimeters



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