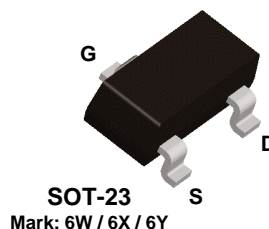
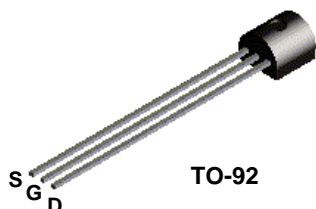


**J174**  
**J175**  
**J176**  
**J177**

**MMBFJ175**  
**MMBFJ176**  
**MMBFJ177**



## P-Channel Switch

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

### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>DG</sub>	Drain-Gate Voltage	- 30	V
V <sub>GS</sub>	Gate-Source Voltage	30	V
I <sub>GF</sub>	Forward Gate Current	50	mA
T <sub>J</sub> , T <sub>stg</sub>	Operating and Storage Junction Temperature Range	-55 to +150	°C

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

#### NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max		Units
		J174 - J177	*MMBFJ175	
P <sub>D</sub>	Total Device Dissipation	350	225	mW
	Derate above 25°C	2.8	1.8	mW/°C
R <sub>θJC</sub>	Thermal Resistance, Junction to Case	125		°C/W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	357	556	°C/W

\*Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06."

# P-Channel Switch

(continued)

## Electrical Characteristics

TA = 25°C unless otherwise noted

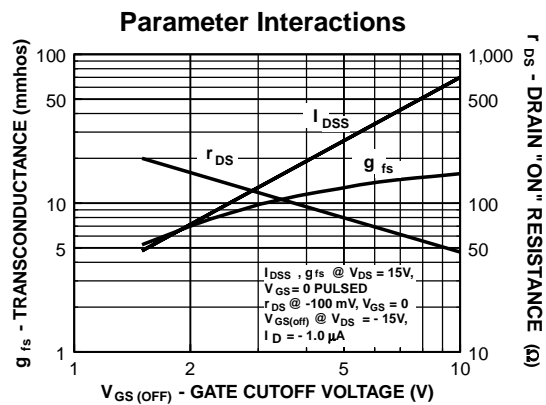
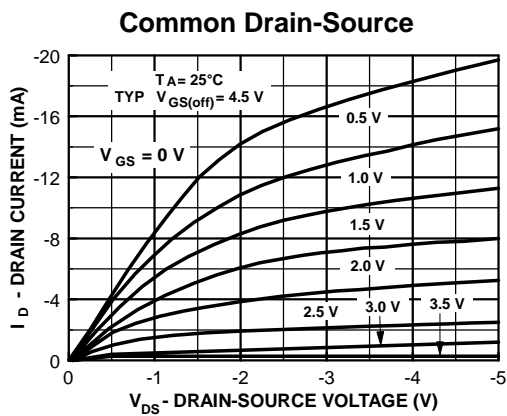
Symbol	Parameter	Test Conditions	Min	Max	Units	
<b>OFF CHARACTERISTICS</b>						
$B_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = 1.0 \mu A, V_{DS} = 0$	30		V	
$I_{GSS}$	Gate Reverse Current	$V_{GS} = 20 V, V_{DS} = 0$		1.0	nA	
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = -15 V, I_D = -10 nA$	<b>J174</b>	5.0	10	V
			<b>J175</b>	3.0	6.0	V
			<b>J176</b>	1.0	4.0	V
			<b>J177</b>	0.8	2.5	V

## ON CHARACTERISTICS

$I_{DSS}$	Zero-Gate Voltage Drain Current*	$V_{DS} = -15 V, V_{GS} = 0$	<b>J174</b>	-20	-100	mA
			<b>J175</b>	-7.0	-60	mA
			<b>J176</b>	-2.0	-25	mA
			<b>J177</b>	-1.5	-20	mA
$r_{DS(on)}$	Drain-Source On Resistance	$V_{DS} \leq 0.1 V, V_{GS} = 0$	<b>J174</b>		85	$\Omega$
			<b>J175</b>		125	$\Omega$
			<b>J176</b>		250	$\Omega$
			<b>J177</b>		300	$\Omega$

\*Pulse Test: Pulse Width  $\leq 300 \mu s$ , Duty Cycle  $\leq 2.0\%$

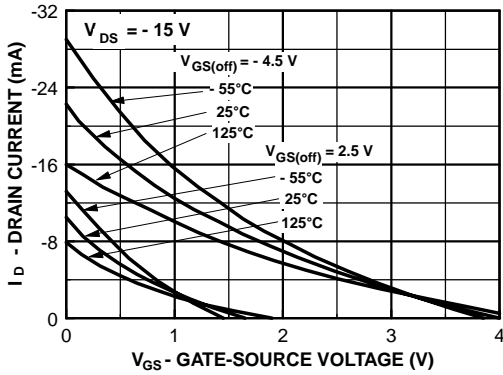
## Typical Characteristics



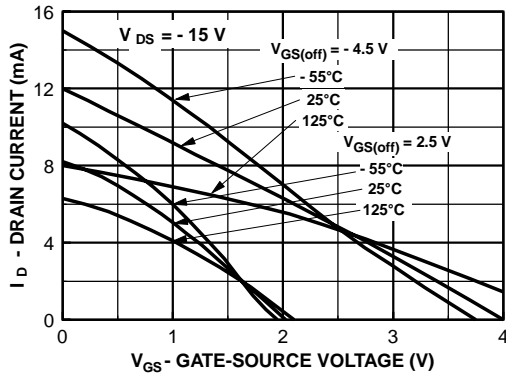
J174 / J175 / J176 / J177 / MMBFJ175 / MMBFJ176 / MMBFJ177

Typical Characteristics (continued)

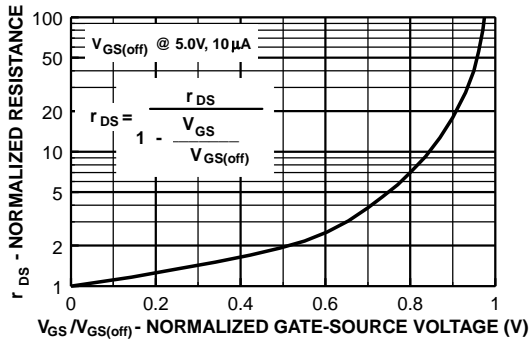
Transfer Characteristics



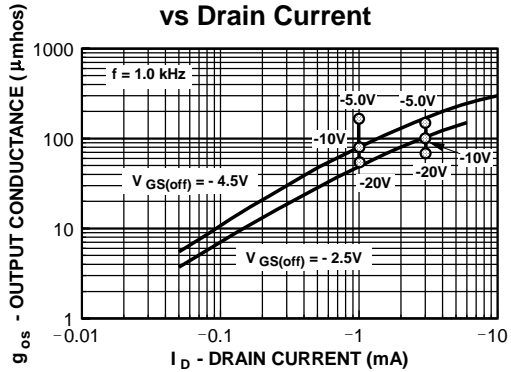
Transfer Characteristics



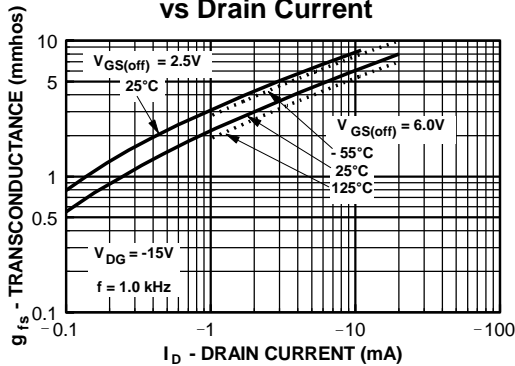
Normalized Drain Resistance vs Bias Voltage



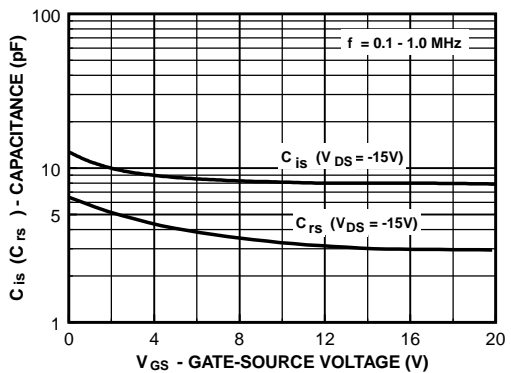
Output Conductance vs Drain Current



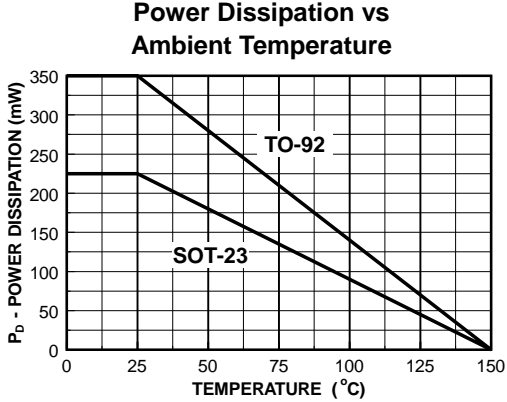
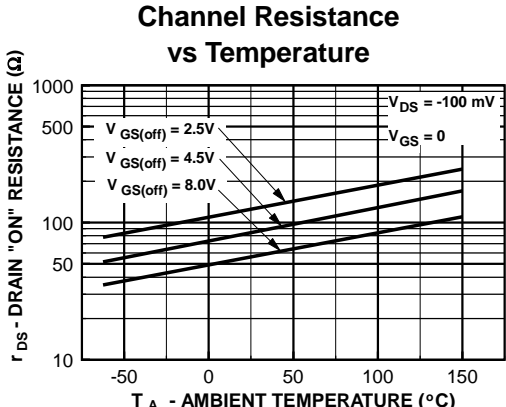
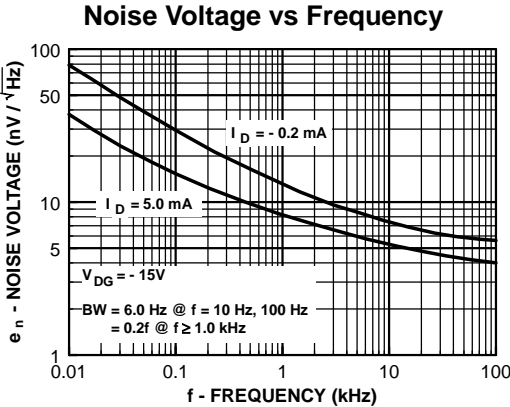
Transconductance vs Drain Current



Capacitance vs Voltage



Typical Characteristics (continued)



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