



MMBF439X

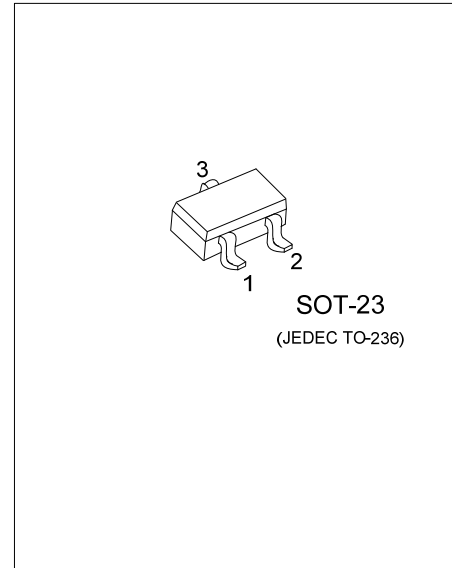
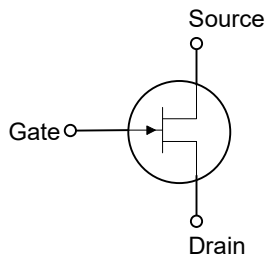
JFET

N-CHANNEL SWITCH

■ DESCRIPTION

The UTC **MMBF439X** is designed for low level analog switching sample and hold circuits and chopper stabilized amplifiers.

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBF4391L-AE3-R	MMBF4391G-AE3-R	SOT-23	D	S	G	Tape Reel
MMBF4392L-AE3-R	MMBF4392G-AE3-R	SOT-23	D	S	G	Tape Reel
MMBF4392L-AE3-A-R	MMBF4392G-AE3-A-R	SOT-23	S	D	G	Tape Reel
MMBF4393L-AE3-R	MMBF4393G-AE3-R	SOT-23	D	S	G	Tape Reel

Note: Pin Assignment: D: Drain S: Source G: Gate

<p>MMBF4392G-AE3-A-R</p>	<p>(1) R: Tape Reel (2) refer to Pin Assignment (3) AE3: SOT-23 (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

MMBF439X	MMBF439X-A

■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	30	V
Drain-Gate Voltage	V_{DG}	30	V
Gate-Source Voltage	V_{GSS}	30	V
Forward Gate Current	I_{GF}	50	mA
Power Dissipation	P_D	225	mW
Junction Temperature	T_J	-55 ~ +150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

PARAMETER	SYMBOL	RATING	UNIT
Junction to Ambient	θ_{JA}	556	$^{\circ}\text{C}/\text{W}$

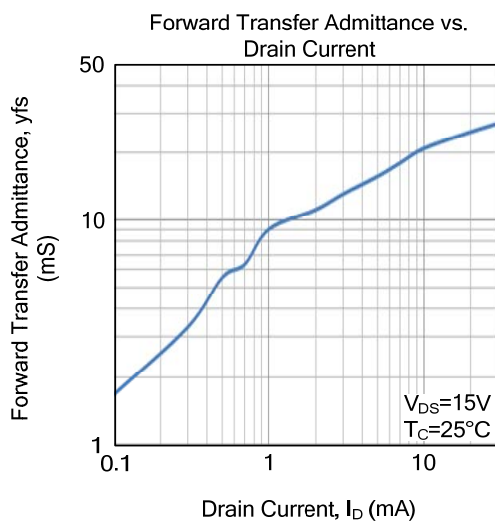
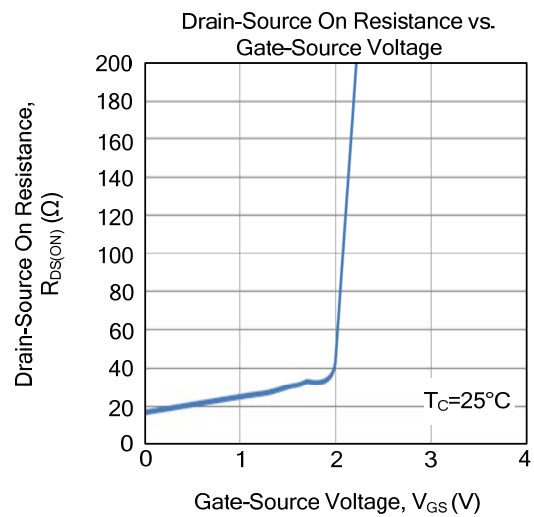
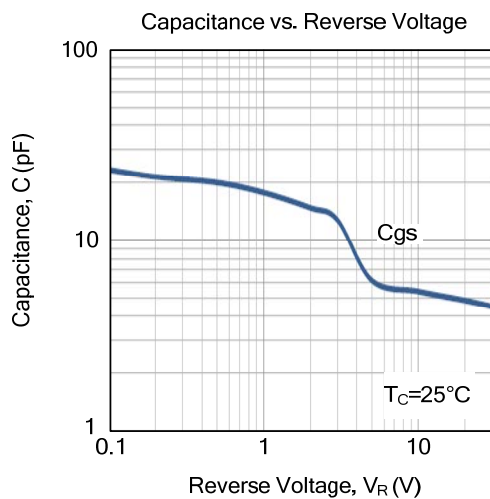
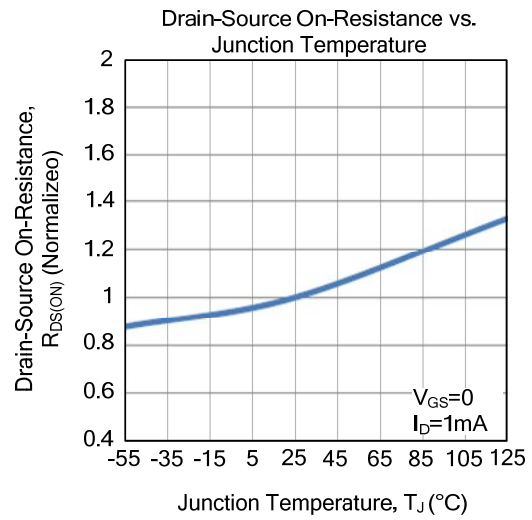
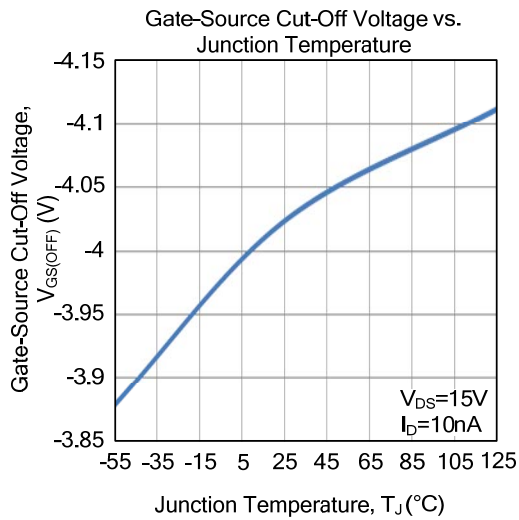
Note: Device mounted on FR-4 PCB.

■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G=1.0\mu\text{A}$, $V_{DS}=0$	30			V
Gate Reverse Current (Note)	I_{GSS}	$V_{GS}=15\text{V}$, $V_{DS}=0$, $T_A=25^{\circ}\text{C}$			1.0	nA
Gate-Source Cut-Off Voltage	$V_{GS(OFF)}$	$V_{DS}=15\text{V}$, $I_D=10\text{nA}$	MMBF4391	-4.0	-10	V
			MMBF4392	-2.0	-5.0	V
			MMBF4393	-0.5	-3.0	V
Off-State Drain Current	$I_{D(OFF)}$	$V_{GS}=-12\text{V}$, $V_{DS}=15\text{V}$			1.0	nA
ON CHARACTERISTICS						
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=15\text{V}$, $V_{GS}=0$	MMBF4391	50	150	mA
			MMBF4392	25	75	mA
			MMBF4393	5	30	mA
Drain-Source On Voltage	$V_{DS(ON)}$	$I_D=12\text{mA}$, $V_{GS}=0$	MMBF4391		0.4	V
		$I_D=6.0\text{mA}$, $V_{GS}=0$	MMBF4392		0.4	V
		$I_D=3.0\text{mA}$, $V_{GS}=0$	MMBF4393		0.4	V
Drain-Source On Resistance	$R_{DS(ON)}$	$I_D=1.0\text{mA}$, $V_{GS}=0$	MMBF4391		30	Ω
			MMBF4392		60	Ω
			MMBF4393		100	Ω
SMALL-SIGNAL CHARACTERISTICS						
Input Capacitance	C_{ISS}	$V_{DS}=15\text{V}$, $V_{GS}=0$, $f=1.0\text{MHz}$		27		pF
Reverse Transfer Capacitance	C_{RSS}	$V_{DS}=0$, $V_{GS}=12\text{V}$, $f=1.0\text{MHz}$		14.5		pF

Note: Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

TYPICAL CHARACTERISTICS



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