

N-CHANNEL SILICON JFET

Marking code: MMBF4391 MMBF4392 MMBF4393

DESCRIPTION:

The CENTRAL SEMICONDUCTOR MMBF4391 series types are N-Channel silicon JFETs designed for analog switching and chopper applications.



SOT-23

Absolute Maximum Ratings (T_A =25 °C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Gate-Drain Voltage	V _{GD}	40	V
Gate-Source Voltage	V _{GS}	20	V
Gate Current	I _b	50	mA
Maximum Power Dissipation	P _D	225	mW
Operating Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55 To 150	

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

Symbol	Condition	MMBF4391		MMBF4392		MMBF4393		Unit
		Min	Max	Min	Max	Min	Max	
BV _{GSS}	V _{GS} =0V, I _D =250μA	40		40		40		V
I _{DSS}	V _{DS} =20V, V _{GS} =0V	50	150	25	75	5	30	mA
I _{GSS}	V _{GS} =20V, V _{DS} =0V		0.1		0.1		0.1	nA
V _{GS(OFF)}	V _{DS} =20V, I _D =1nA	4	10	2	5	0.5	3	V
V _{GS(f)}	V _{DS} =0V, I _D =1mA		11		1		1	V
R _{DS(ON)}	V _{GS} =0V, I _D =1mA		30		60		100	Ω
I _{D(OFF)}	V _{DS} =20V, V _{GS} =12V		0.1					nA
I _{D(OFF)}	V _{DS} =20V, V _{GS} =7V				0.1			nA
I _{D(OFF)}	V _{DS} =20V, V _{GS} =5V						0.1	nA
V _{DS(ON)}	I _D =12mA		0.4					V
V _{DS(ON)}	I _D =6mA				0.4			V
V _{DS(ON)}	I _D =3mA						0.4	V
C _{rss}	V _{GS} =12V, V _{DS} =0V, f=1.0MHz		3.5					PF
C _{rss}	V _{GS} =7V, V _{DS} =0V, f=1.0MHz				3.5			PF
C _{rss}	V _{GS} =5V, V _{DS} =0V, f=1.0MHz						3.5	PF
t _r	V _{GS(OFF)} =12V		15					nS
t _r	V _{GS(OFF)} =7V				20			nS
t _r	V _{GS(OFF)} =5V						30	nS
t _(on)	I _{D(OFF)} =12mA		15					nS
t _(on)	I _{D(OFF)} =6mA				15			nS
t _(on)	I _{D(OFF)} =3mA						15	nS
t _{d(off)}	V _{GS(OFF)} =12V		20					nS
t _{d(off)}	V _{GS(OFF)} =7V				35			nS
t _{d(off)}	V _{GS(OFF)} =5V						50	nS

RATING AND CHARACTERISTICS CURVES (MMBF4391 THRU MMBF4393)

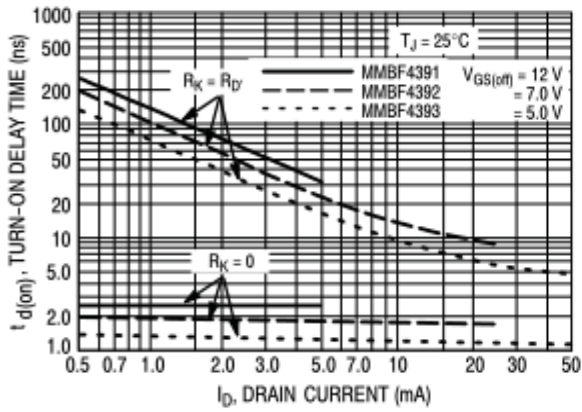


Figure 1. Turn-On Delay Time

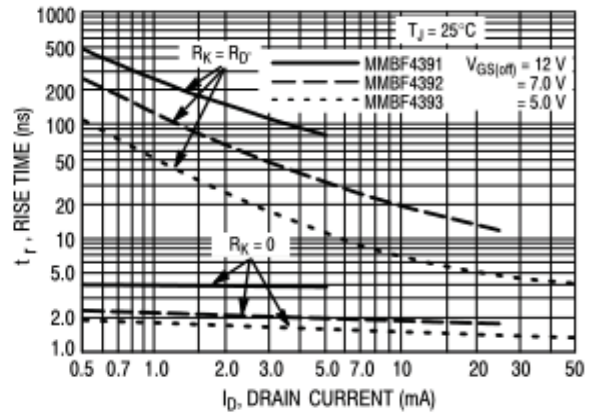


Figure 2. Rise Time

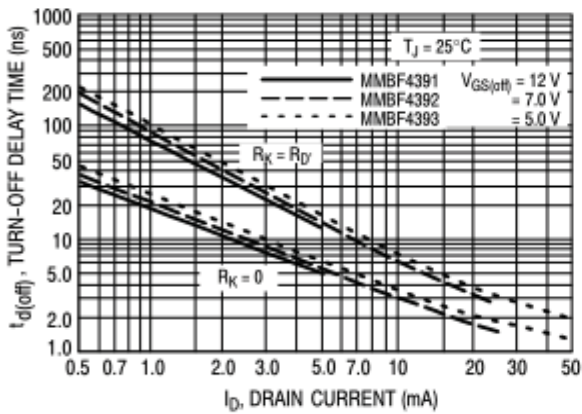


Figure 3. Turn-Off Delay Time

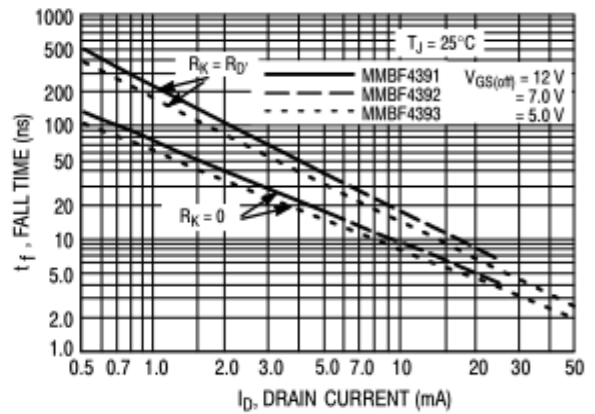


Figure 4. Fall Time

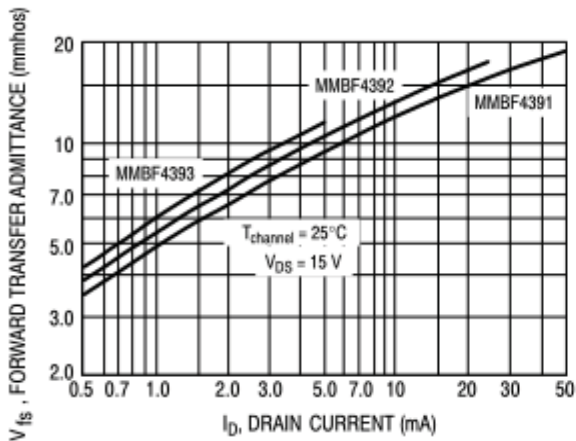


Figure 6. Typical Forward Transfer Admittance

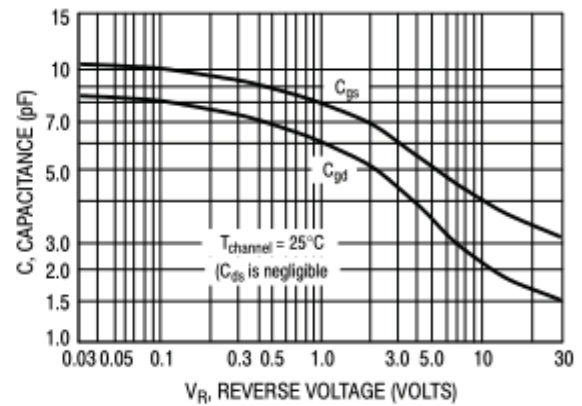


Figure 7. Typical Capacitance

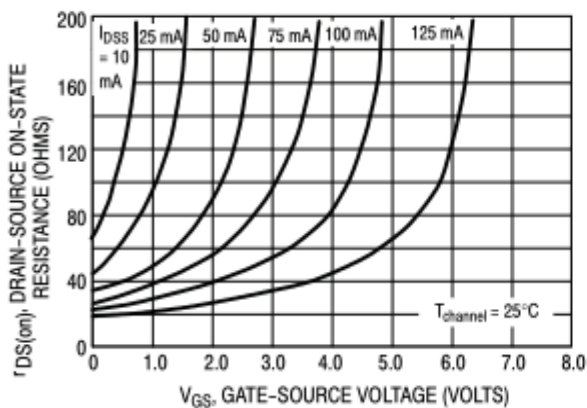


Figure 8. Effect of Gate-Source Voltage on Drain-Source Resistance

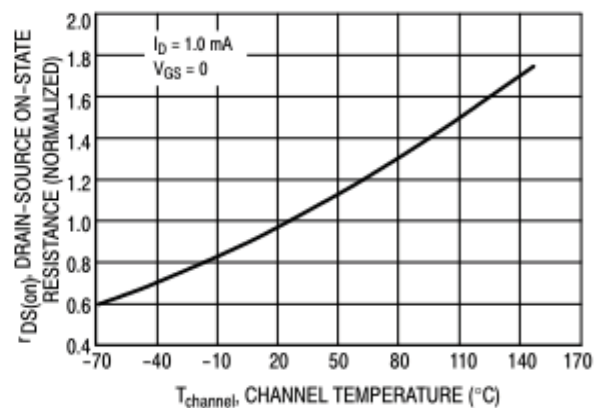


Figure 9. Effect of Temperature on Drain-Source On-State Resistance

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