

enhancement-type p-channel MOSFET designed for . . .



MT14

Performance Curves MBH See Section 4

- General Purpose Amplifiers
- Analog Switches
- Digital Switching

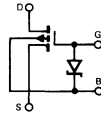
BENEFITS

- High Gain
 $g_{fs} = 4000 \mu\text{mho}$ Typical
- High Input Impedance
 $I_{GSS} = 6 \text{ pA}$ Typical
- High Off-Isolation
 $I_{D(\text{off})} = 15 \text{ pA}$ Typical
- Rugged
 Zener Protected Input

ABSOLUTE MAXIMUM RATINGS (25°C)

Drain-to-Source Voltage	.....	-40 V
Gate-to-Source Voltage	.....	-40 V
Gate-to-Drain Voltage	.....	-40 V
Drain Current	.....	-50 mA
Gate Zener Current	.....	$\pm 0.1 \text{ mA}$
Storage Temperature	.....	-65 to +150°C
Operating Junction Temperature	.....	-55 to +125°C
Total Dissipation at 25°C Ambient Temperature (Derate 2.25 mW/°C)	.....	225 mW
Lead Temperature (1/16" from case for 10 seconds)	.....	260°C

TO-72
See Section 5



ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Characteristic		Min	Typ	Max	Unit	Test Conditions		
S T A M P I C	1 BV _{DSS} Drain-Source Breakdown Voltage	-40			V	$I_D = -1 \mu\text{A}, V_{GS} = 0, V_{BS} = 0$		
	2 BV _{S_{DS}} Source-Drain Breakdown Voltage	-40				$I_S = -1 \mu\text{A}, V_{GD} = 0, V_{BD} = 0$		
	3 BV _{G_{BS}} Gate-Body Breakdown Voltage	-40		-110		$I_G = -1 \mu\text{A}, V_{SB} = 0, V_{DB} = 0$		
	4 I _{GSS} Gate-Body Leakage		-6	-100		$V_{GS} = -20 \text{ V}, V_{DS} = 0, V_{BS} = 0$		
	5 I _{D(off)} Drain Cutoff Current		-15	-200	pA	$V_{DS} = -20 \text{ V}, V_{GS} = 0, V_{BS} = 0$		
	6 I _{S(off)} Source Cutoff Current		-16	-200		$V_{SD} = -20 \text{ V}, V_{GD} = 0, V_{BD} = 0$		
	7 V _{GS(th)} Gate Threshold Voltage	-1.5	-2.9	-4.5	V	$V_{GS} = V_{DS}, I_D = -10 \mu\text{A}, V_{BS} = 0$		
	C	8 I _{D(on)} Drain Current	-8	-20	-35	mA	$V_{DS} = -10 \text{ V}, V_{GS} = -10 \text{ V}, V_{BS} = 0$	
		r _{DS(on)} Drain-Source ON Resistance		70	240	Ω	$V_{GS} = -40 \text{ V}, I_{DS} = -0.1 \text{ mA}, V_{BS} = 0$	
				100	275		$V_{GS} = -25 \text{ V}, I_{DS} = -0.1 \text{ mA}, V_{BS} = 15 \text{ V}$	
				320	500		$V_{GS} = -10 \text{ V}, I_{DS} = -0.1 \text{ mA}, V_{BS} = 30 \text{ V}$	
		12 V _{DS(on)} Drain-Source ON Voltage			900	mV	$V_{GS} = -10 \text{ V}, I_D = -2 \text{ mA}, V_{BS} = 0$	
D Y N A M I C	13 g _{fs} Common-Source Forward Transconductance	2,000	4,000		μmho	$V_{DS} = -10 \text{ V}, V_{GS} = -10 \text{ V}, V_{BS} = 0$		
	14 C _{gs} Gate-Source Capacitance		2	4	pF	$V_{GB} = 0, V_{DB} = 0, V_{SB} = 0$ Body Guarded		
	15 C _{gd} Gate-Drain Capacitance		1.5	4		f = 1 MHz		
	16 C _{sb} Source-Body Capacitance		4	5				
	17 C _{db} Drain-Body Capacitance		2.5	4				
	18 C _{ds} Drain-Source Capacitance		0.3				$V_{CB} = 0, V_{DB} = -5 \text{ V}, V_{SB} = -5 \text{ V},$ Body Guarded	
	S W	19 t _{d(on)} Turn-ON Delay Time				12	ns	$V_{DD} = -15 \text{ V}$
		20 t _r Rise Time				24		$I_{D(on)} = -10 \text{ mA}$
21 t _{off} Turn-OFF Time				50		$R_L = 1.5 \text{ k} \Omega$		

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