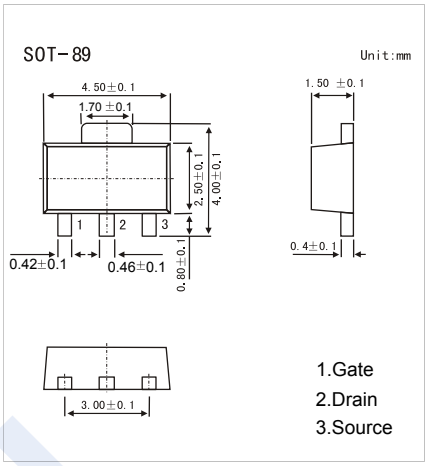
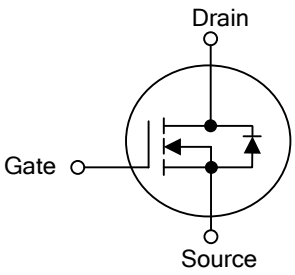
N-Channel MOSFET

UTM2054 (KTM2054)



■ Features

- $V_{DS\ (V)}$ = 20V
- I_D = 5 A (V_{GS} = 10V)
- $R_{DS(ON)}$ < 40mΩ (V_{GS} = 10V)
- $R_{DS(ON)}$ < 54mΩ (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 130mΩ (V_{GS} = 2.5V)
- Fast switching capability



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±16	
Continuous Drain Current	I_D	5	A
Pulsed Drain Current	I_{DM}	20	
Power Dissipation	P_D	1.47	W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=16V, V_{GS}=0V			1	uA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±16V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=250μA	0.6		1.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=5A (Note.1)			40	mΩ
		V_{GS}=4.5V, I_D=3.5A (Note.1)			54	
		V_{GS}=2.5V, I_D=2.5A (Note.1)			130	
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=15V, f=1MHz		450		pF
Output Capacitance	C_{oss}			100		
Reverse Transfer Capacitance	C_{rss}			60		
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		2.5		Ω
Total Gate Charge	Q_g	V_{GS}=4.5V, V_{DS}=10V, I_D=5A		11.5	15	nC
Gate Source Charge	Q_{gs}			3.8		
Gate Drain Charge	Q_{gd}			5.2		
Turn-On DelayTime	$t_{d(on)}$	V_{DD}=10V, R_L=10Ω, I_{DS}=1A, V_{GEN}=4.5V, R_G=6Ω			10	ns
Turn-On Rise Time	t_r				25	
Turn-Off DelayTime	$t_{d(off)}$				26	
Turn-Off Fall Time	t_f				7	
Diode Forward Voltage	V_{SD}	I_S=3A,V_{GS}=0V (Note.1)			1.3	V

Note.1: Pulse width≦300μs, Duty cycle≦2%

■ Marking

Marking	AB3