

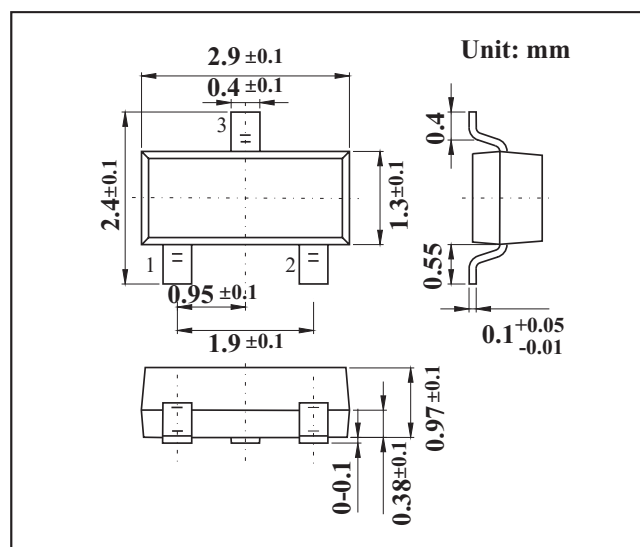
SOT-23 Plastic-Encapsulate MOSFETS

FEATURE

- TrenchFET Power MOSFET
- N-Channel Enhancement Mode Field Effect Transistor

MECHANICAL DATA

- Case style: SOT-23 molded plastic
- Mounting position: any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	
Continuous Drain Current	I_D	6	A
Pulsed Drain Current	I_{DM}	25	
Maximum Body-Diode Continuous Current	I_S	2	
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	-55 ~ +150	

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	24mΩ@ 10V	6A
	27mΩ@ 4.5V	
	42mΩ@ 2.5V	
	74mΩ@ 1.8V	

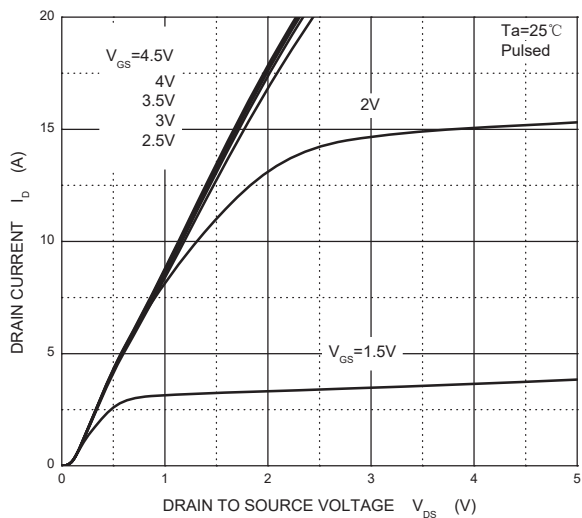
MOSFET ELECTRICAL CHARACTERISTICS $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Gate-source leakage current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 12V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$			1.0	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.5	0.7	1.0	V
Drain-source on-state resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 6.0A$		19	24	m Ω
		$V_{GS} = 4.5V, I_D = 5.0A$		22	27	
		$V_{GS} = 2.5V, I_D = 4.0A$		35	42	
		$V_{GS} = 1.8V, I_D = 2.0A$			74	
Diode forward voltage	V_{SD}	$V_{GS} = 0V, I_S = 1A$		0.75	1	V
Forward transconductance	g_{fs}	$V_{DS} = 5V, I_D = 3.8A$	4			S
DYNAMIC PARAMETERS*						
Input capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		630		pF
Output capacitance	C_{oss}			164		
Reverse transfer capacitance	C_{rss}			137		
Gate resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		1.5		Ω
SWITCHING PARAMETERS*						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 5V, V_{DS} = 10V,$ $R_L = 1.7\Omega, R_{GEN} = 6\Omega$		5.5		ns
Rise time	t_r			14		
Turn-off delay time	$t_{d(off)}$			29		
Fall time	t_f			10.2		

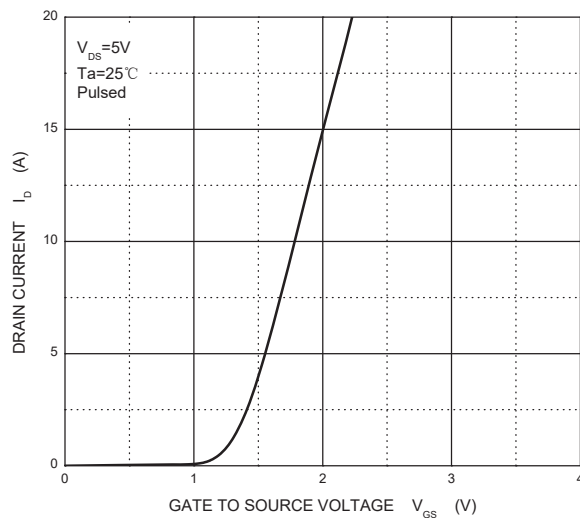
*These parameters have no way to verify.

RATINGS AND CHARACTERISTIC CURVES

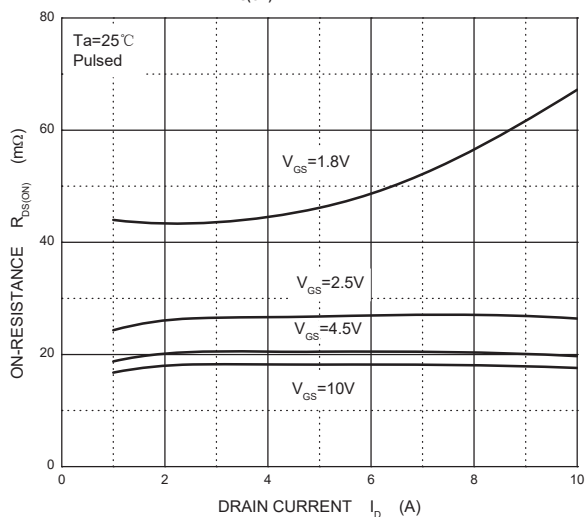
Output Characteristics



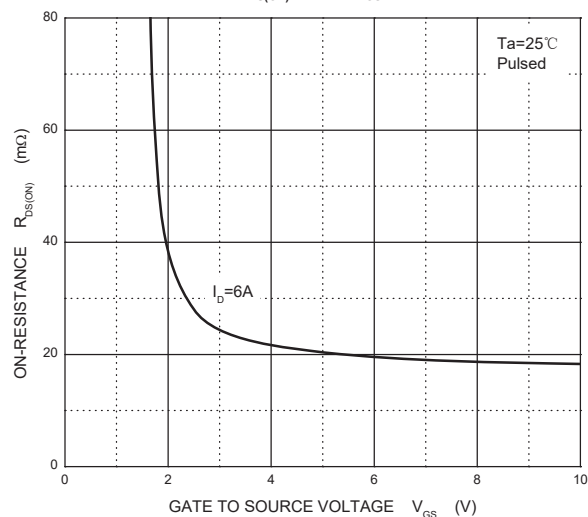
Transfer Characteristics



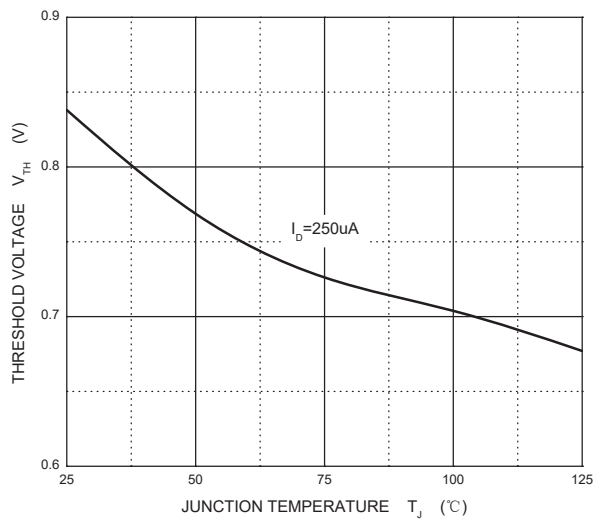
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



Threshold Voltage



I_S — V_{SD}

