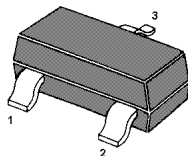


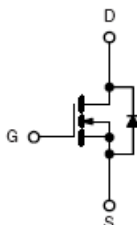
N-Channel (D-S) MOSFET

SOT-23



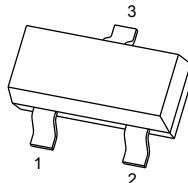
MARKING : M2***

Equivalent Circuit



SOT-23

1. GATE
2. SOURCE
3. DRAIN



$V_{(BR)DSS}$	$R_{DS(on)Typ}$	I_D
20 V	22m Ω @4.5V	5 A
	30m Ω @2.5V	

Maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

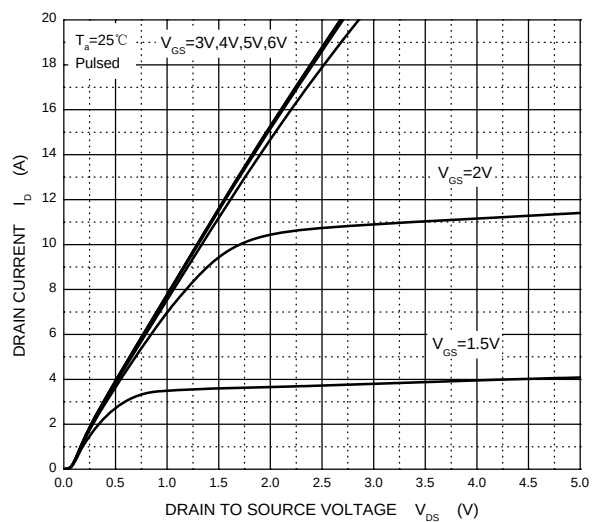
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 10	
Continuous Drain Current $t=5s$	I_D	5	A
Pulsed Drain Current	I_{DM}	20	
Continuous Source-Drain Diode Current	I_S	1.04	
Maximum Power Dissipation $t=5s$	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-50 ~ +150	$^{\circ}\text{C}$

T_a=25 °C unless otherwise specified

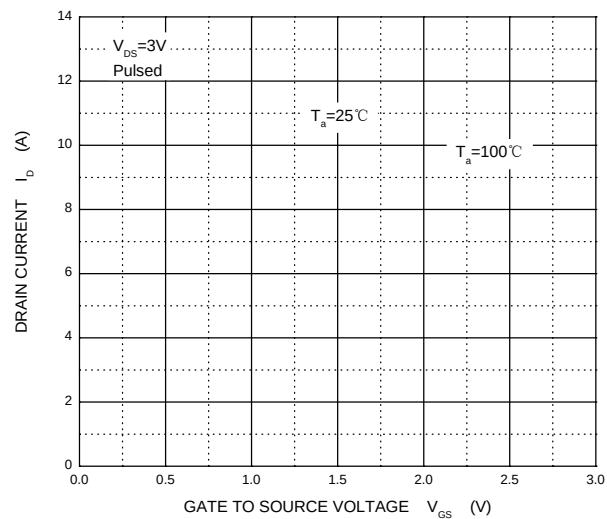
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =250μA	20			V
Gate-source leakage	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1.0	μA
Gate-source threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.45	0.7	1.0	V
Drain-source on-state resistance ^a	R _{DS (on)}	V _{GS} =4.5V, I _D =5.0A		0.022	0.032	Ω
		V _{GS} =2.5V, I _D =4A		0.030	0.042	
Forward tranconductance ^a	g _{fs}	V _{DS} =10V, I _D =5.0A		6		S
Dynamic ^b						
Input capacitance	C _{iSS}	V _{DS} =10V,V _{GS} =0V,f =1MHz		865		pF
Output capacitance	C _{oSS}			105		
Reverse transfer capacitance	C _{rSS}			55		
Gate resistance	R _g	f =1MHz	0.5		4.8	Ω
Turn-on delay Time	t _{d(on)}	V _{GEN} =5V,V _{DD} =10V, I _D =4A,R _G =1Ω, R _L =2.2Ω			10	ns
Rise time	t _r				20	
Turn-off Delay time	t _{d(off)}				32	
Fall yime	t _f				12	
Drain-source body diode characteristics						
Forward diode voltage	V _{SD}	V _{GS} =0V,I _S =4A		0.75	1.2	V

Typical Characteristics

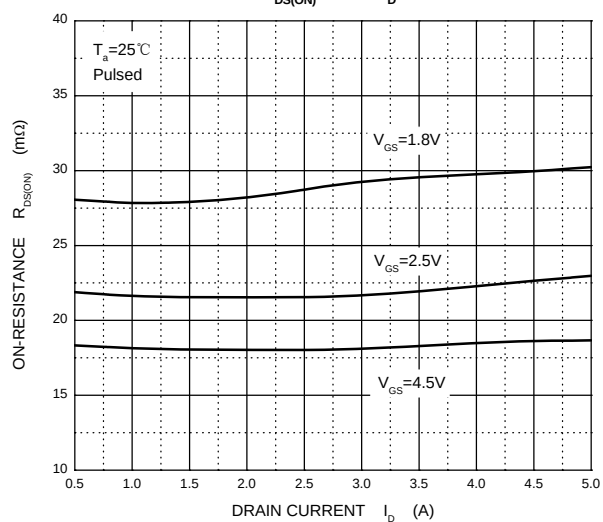
Output Characteristics



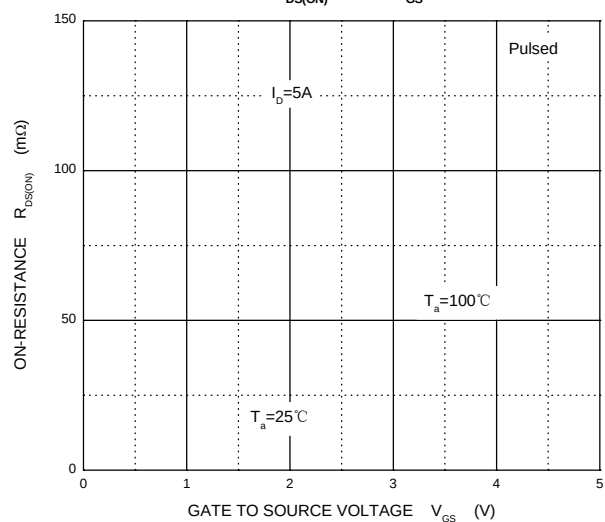
Transfer Characteristics



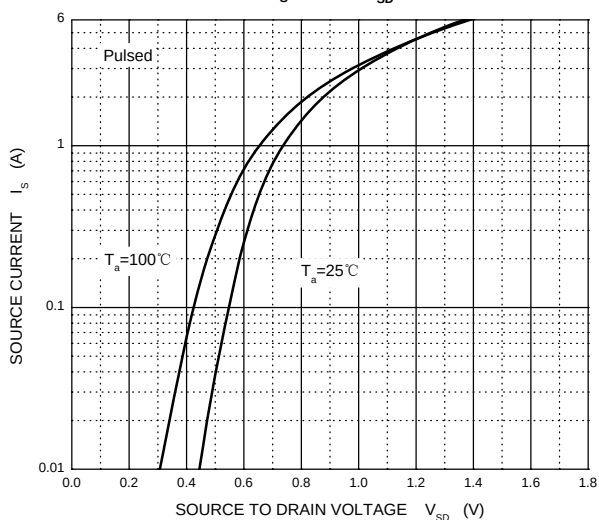
$R_{DS(ON)}$ — I_D



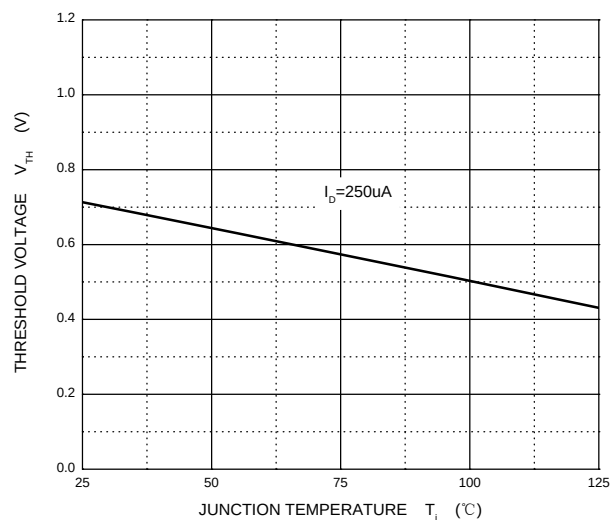
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}

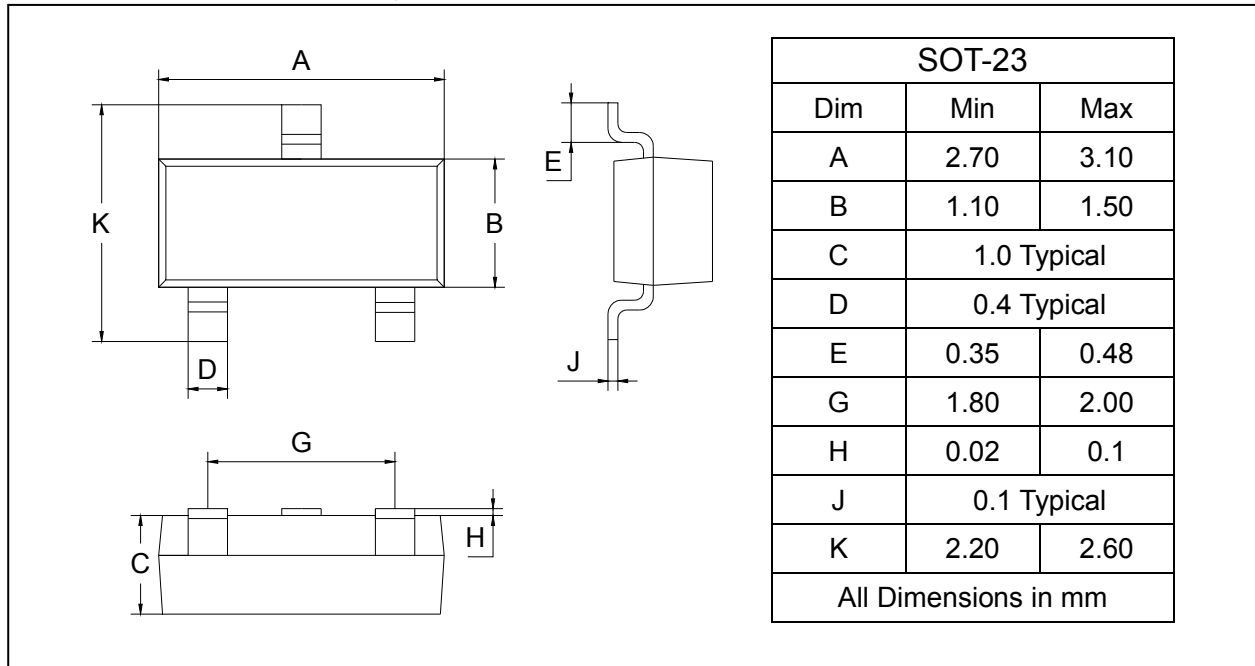


Threshold Voltage

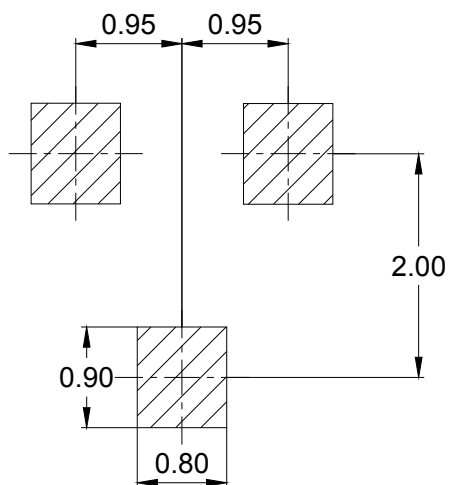


Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



Unit : mm