20V P-Channel MOSFET

Product Summary

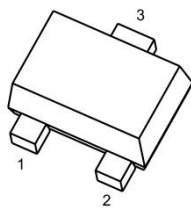| $V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-20V	550mΩ@-4.5V	-0.66A
	700mΩ@-2.5V	

Feature

- Surface Mount Package
- P-Channel Switch with Low RDS(on)
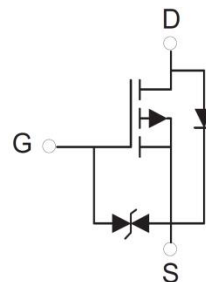- Operated at Low Logic Level Gate Drive
- ESD Protected

Application

- Load/Power Switching
- Interfacing, Logic Switching
- Battery Management for Ultra Small Portable Electronics

Package

SOT-723

Circuit diagram

Absolute maximum ratings (Ta=25℃ unless otherwise noted)

| Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	-0.66	A
Pulsed Drain Current	I_{DM}	-1.2	A
Power Dissipation	P_D	0.15	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

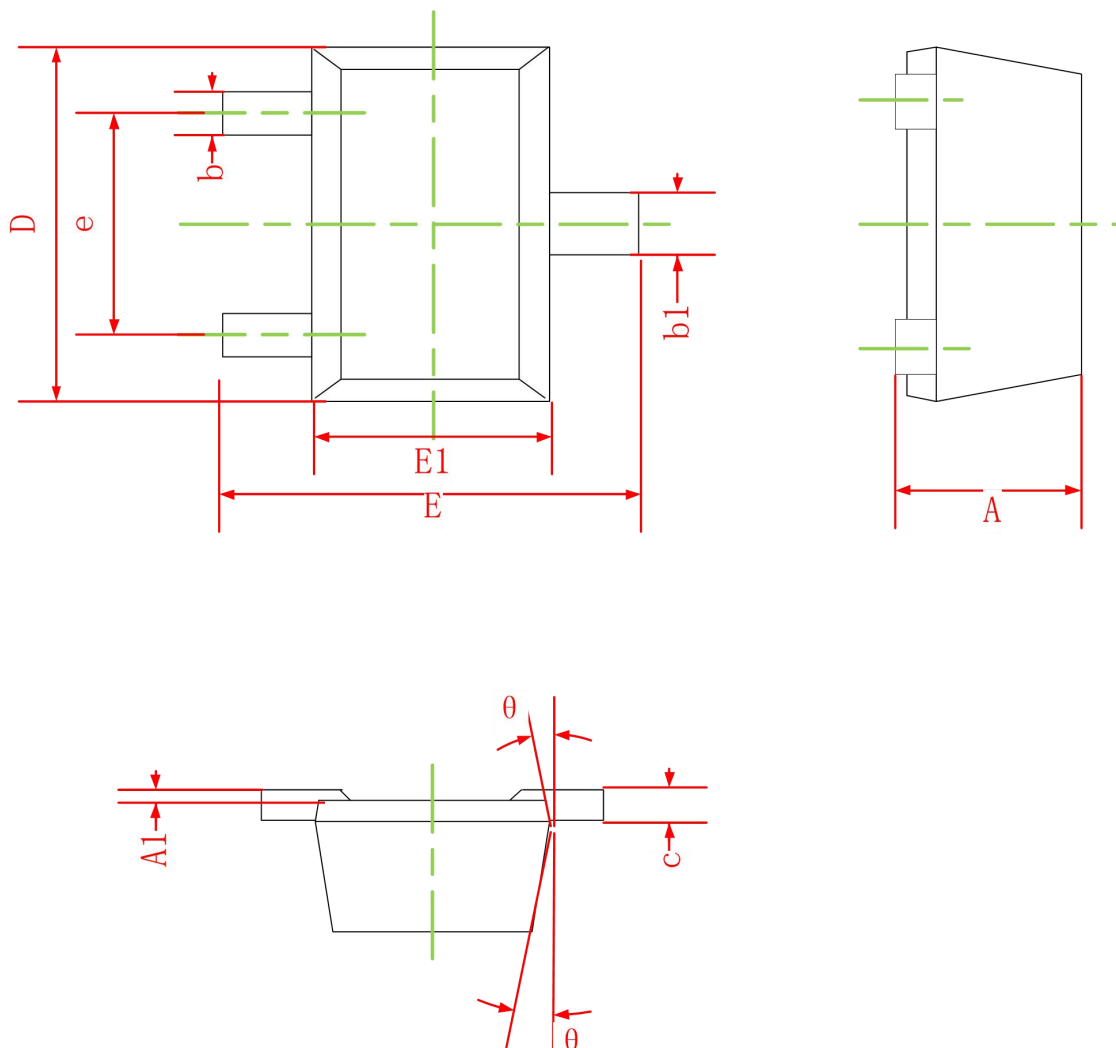## Electrical characteristics (T_A=25 ºC, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250µA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-20V,V_{GS} = 0V			-1	µA
Gate-body leakage current	I_{GSS}	V_{GS} = ±10V, V_{DS} =0V			±10	µA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250µA	-0.35	-0.65	-1	V
Drain-source on-resistance[1]	$R_{DS(on)}$	V_{GS} = -4.5V, I_D = -0.5A			550	mΩ
		V_{GS} = -2.5V, I_D = -0.2A			700	
		V_{GS} = -1.8V, I_D = -0.1A			1000	
Dynamic characteristics[2]						
Input Capacitance	C_{iss}	V_{DS} =-16V,V_{GS} =0V,f =1MHz		113		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			9		
Turn-on delay time	$t_{d(on)}$	V_{DS}=-10V,I_D=-200mA, V_{GS}=-4.5V,R_G=10Ω		9		ns
Turn-on rise time	t_r			5.7		
Turn-off delay time	$t_{d(off)}$			32.6		
Turn-off fall time	t_f			20.3		
Source-Drain Diode characteristics						
Diode Forward voltage	V_{SD}	V_{GS} =0V, I_S=-0.5 A			-1.2	V

Notes:

1) Pulse Test: Pulse Width < 300µs, Duty Cycle ≤2%.

2) Guaranteed by design, not subject to production testing.

Typical Characteristics

Output Characteristics

Transfer Characteristics

$R_{DS(ON)}$ —— I_D

$R_{DS(ON)}$ —— V_{GS}

I_S —— V_{SD}

Threshold Voltage
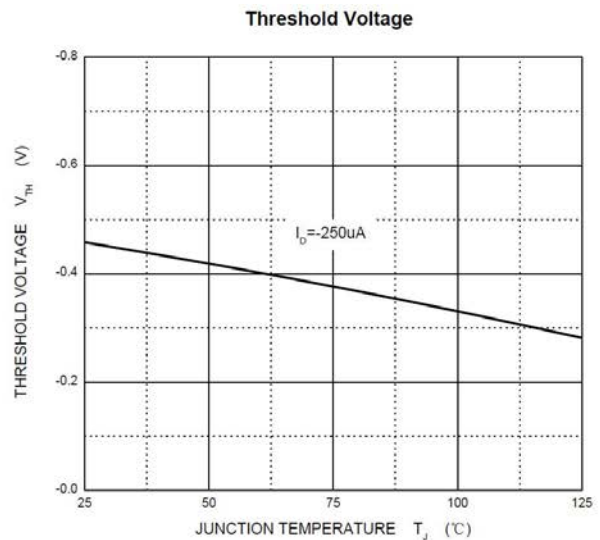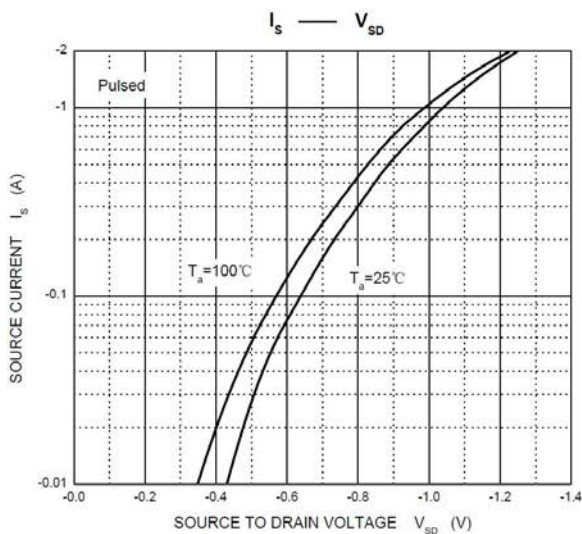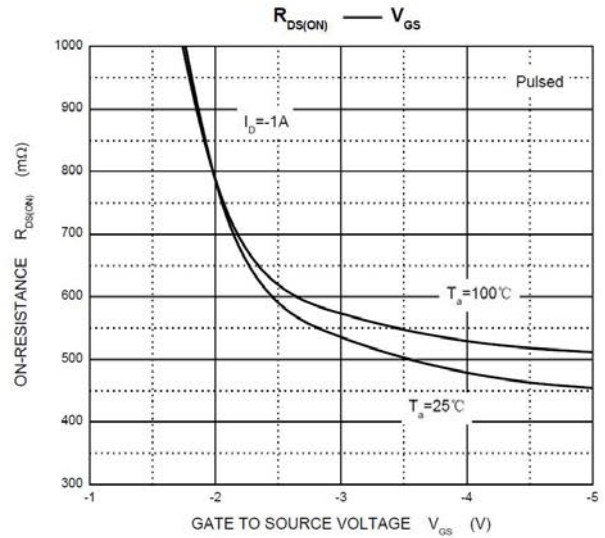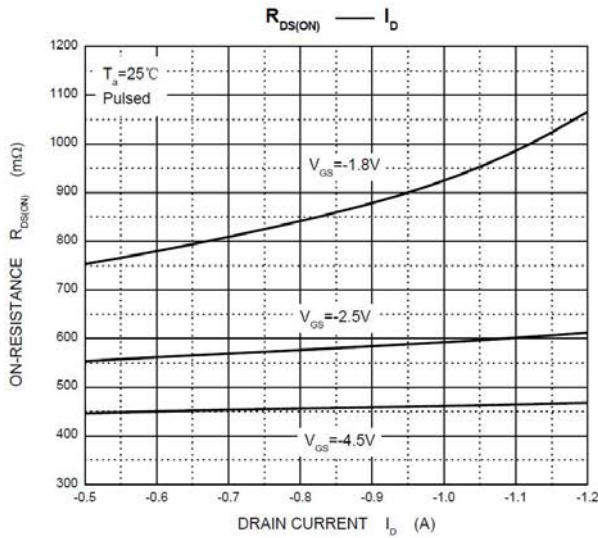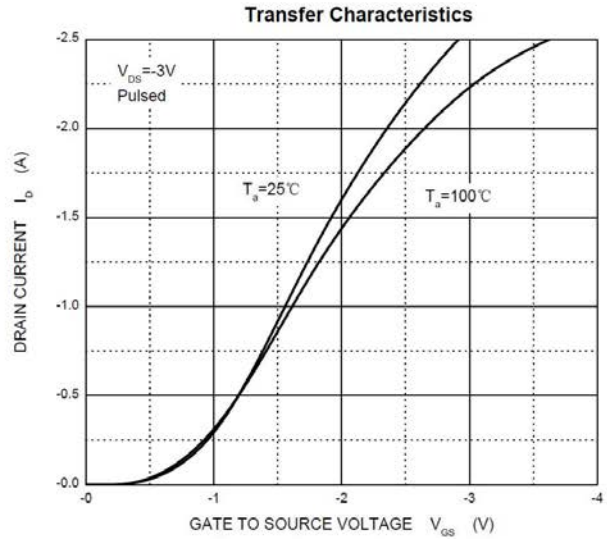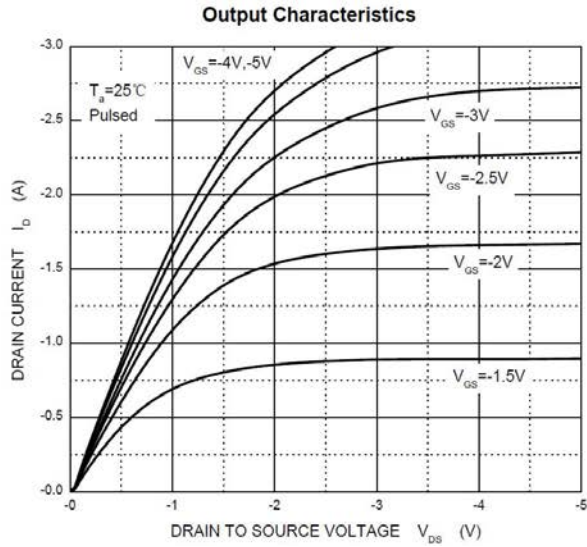
SOT-723 Package Information

Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.430	0.500
A1	0.000	0.050
b	0.170	0.270
b1	0.270	0.370
c	0.080	0.150
D	1.150	1.250
E	1.150	1.250
E1	0.750	0.850
e	0.800TYP.	
θ	7° REF.	

V 1.0