Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	150mΩ@-4.5V	-1.2A
	200mΩ@-2.5V	

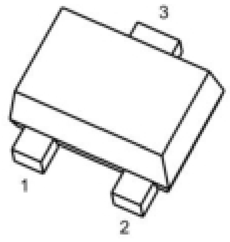
Feature

- TrenchFET Power MOSFET
- Excellent RDS(on) and Low Gate Charge

Applications

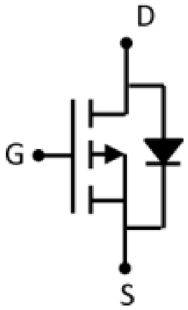
- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

Package

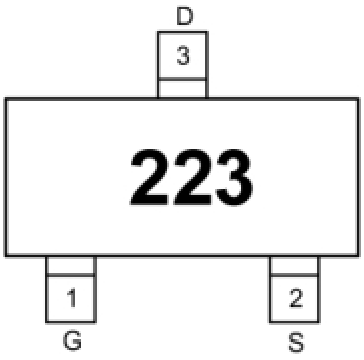


SOT-723

Circuit diagram



Marking



223 =Device Code

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	**Symbol**	**Value**	**Unit**
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	-1.2	A
Pulsed Drain Current	I_{DM}	-4.8	A
Power Dissipation	P_D	0.4	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-20V, V_{GS} = 0V			-1	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±100	uA
Gate threshold voltage (1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.4	-0.7	-1.0	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-1A		150	180	mΩ
		V_{GS} =-2.5V, I_D =-0.5A		200	250	
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS}=-10V, V_{GS}=0V, f=1MHz		270		pF
Output capacitance	C_{oss}			55		
Reverse transfer capacitance	C_{rss}			30		
Total Gate Charge	Q_g	V_{DS} =-10V, V_{GS} =-4.5V, I_D=-2A		2.7		nC
Gate-Source Charge	Q_{gs}			0.46		
Gate-Drain Charge	Q_{gd}			0.7		
Turn-on Delay Time	$T_{d(on)}$	V_{DD}=-10V, V_{GEN}=-4.5V, R_L =5Ω, R_{GEN} =3Ω		10		nS
Turn-on Rise Time	T_r			5		
Turn-Off Delay Time	$T_{d(off)}$			21		
Turn-Off Fall Time	t_f			7		
Source-Drain Diode Characteristics						
Diode Forward voltage	V_{DS}	I_S=-1.25A, V_{GS} = 0V			-1.3	V

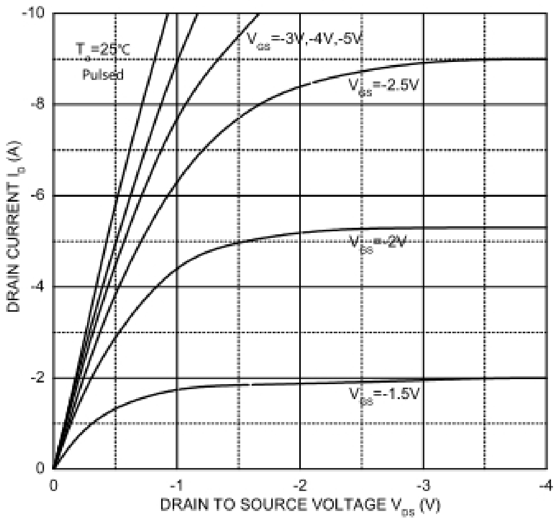
Notes:

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

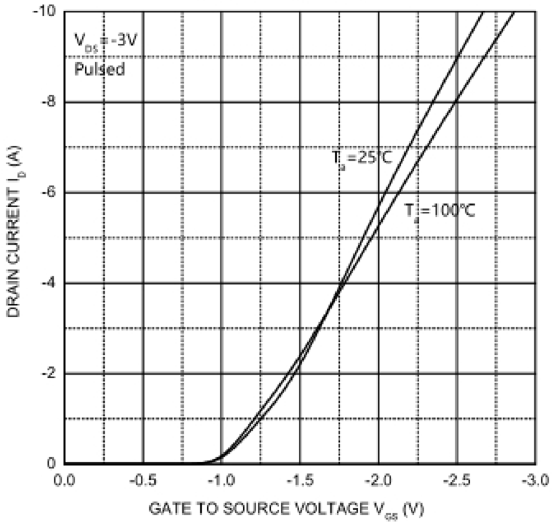
2. Guaranteed by design, not subject to production testing.

Typical Characteristics

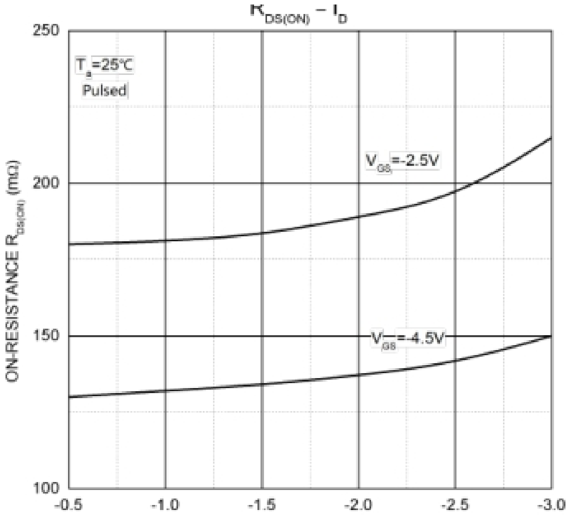
Output Characteristics



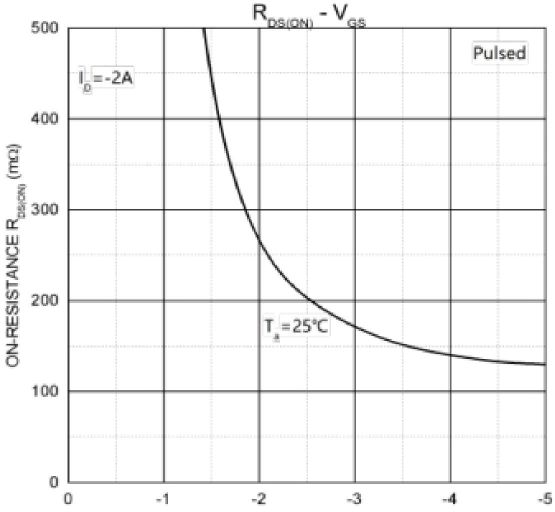
Transfer Characteristics



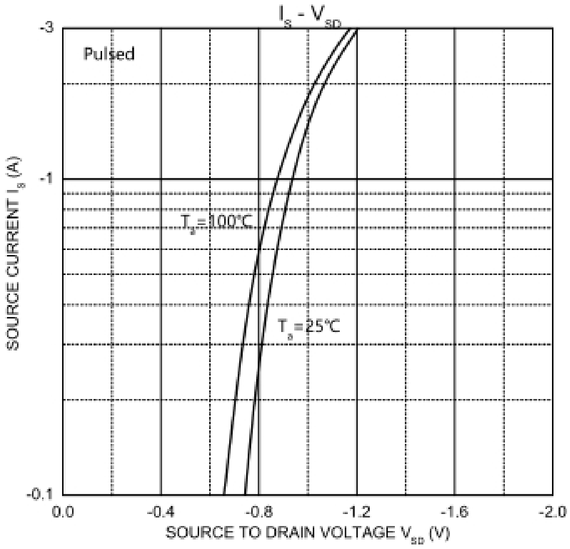
R$_{DS(ON)}$ – I$_D$



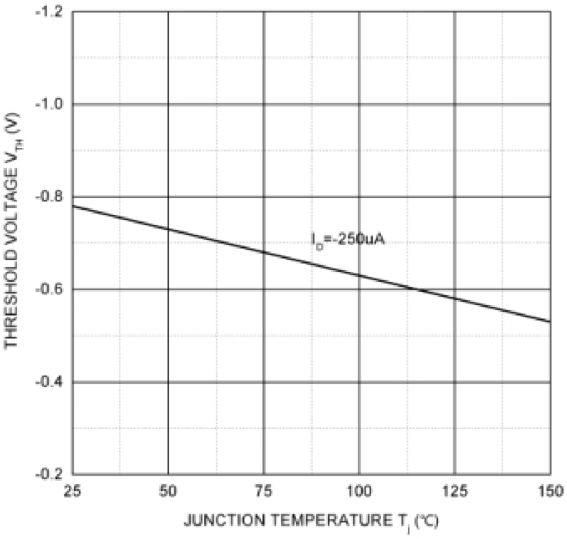
R$_{DS(ON)}$ - V$_{GS}$



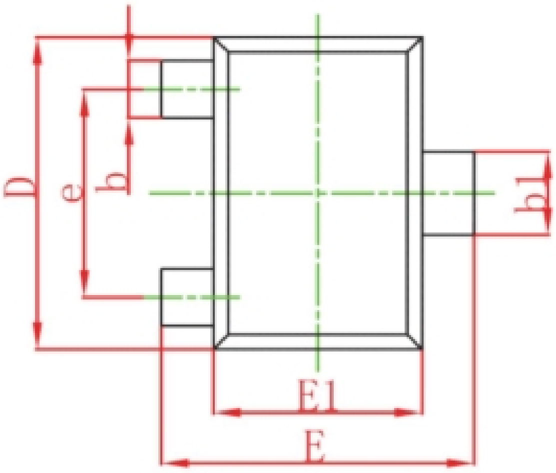
I$_S$ - V$_{SD}$

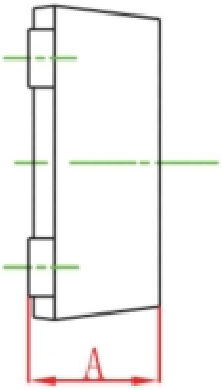


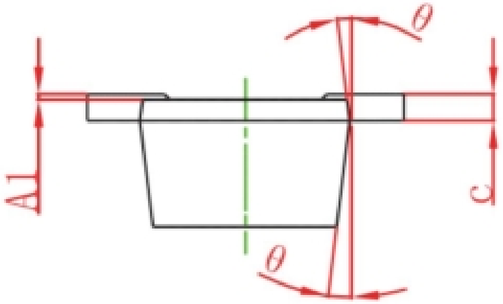
Threshold Voltage



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	0.800 Typ.	
θ	7°Ref.	