Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	28mΩ@4.5V	4.2A
	32mΩ@2.5V	

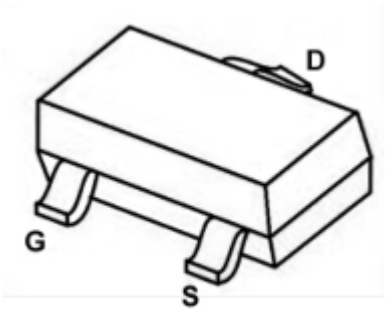
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

Application

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

Package



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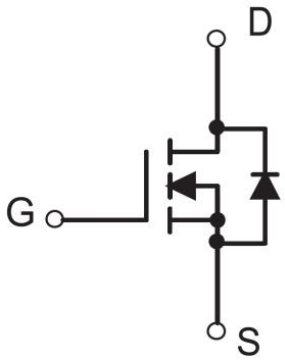
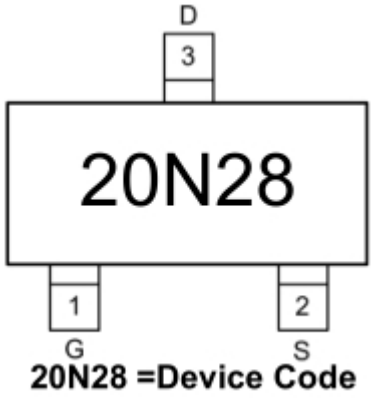
Circuit diagram



Marking



20N28 =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	4.2	A
Plused Drain Current	I_{DM}	15	A
Power Dissipation	P_D	0.35	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)

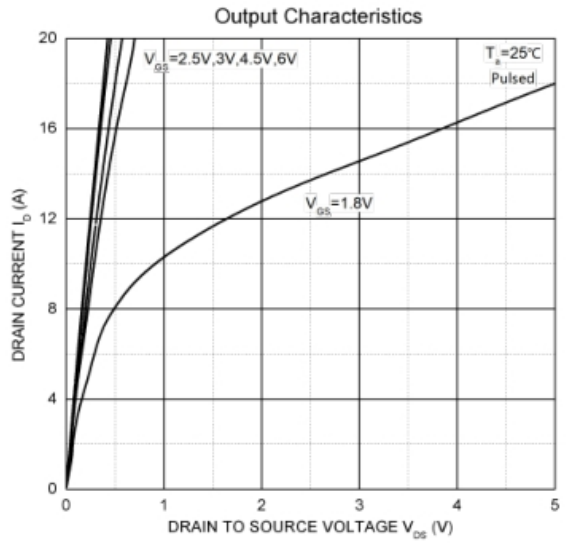
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS} = 0V, I_D =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =20V,V_{GS} = 0V			1	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±12V , V_{DS}=0V			±100	uA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	0.7	1.2	V
Drain-source on-resistance[1]	$R_{DS(on)}$	V_{GS} =4.5V, I_D =3A		28	38	mΩ
		V_{GS} =2.5V, I_D =2A		32	45	
Forward tranconductance[1]	g_{FS}	V_{DS} =10V, I_D =6A		5		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=8V, V_{GS}=0V, f=1MHz		523		pF
Output Capacitance	C_{oss}			99		
Reverse Transfer Capacitance	C_{rss}			75		
Total Gate Charge	Q_g	V_{DS}=10V, V_{GS}=4.5V, I_D =6A		6.4	8.2	pF
Gate Source Charge	Q_{gs}			1.8	2.3	
Gate Drain Charge	Q_{gd}			1.3	1.9	
Switching Characteristics						
Turn-On Delay Time	$T_{d(on)}$	V_{GS}=4.5V, V_{DS}=10V, I_D =1A, R_G=6 Ω		10.5	21	nS
Rise Time	T_r			4.5	9	
Turn-Off Delay Time	$T_{d(off)}$			27.5	55	
Fall Time	T_f			4.3	8.6	
Source-Drain Diode characteristics						
Body Diode Voltage	V_{SD}	I_S=1.7A,V_{GS}=0V		0.8	1.2	V

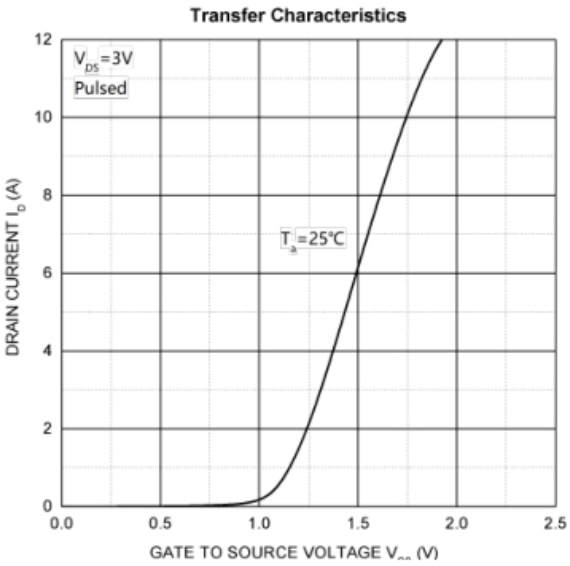
Notes:

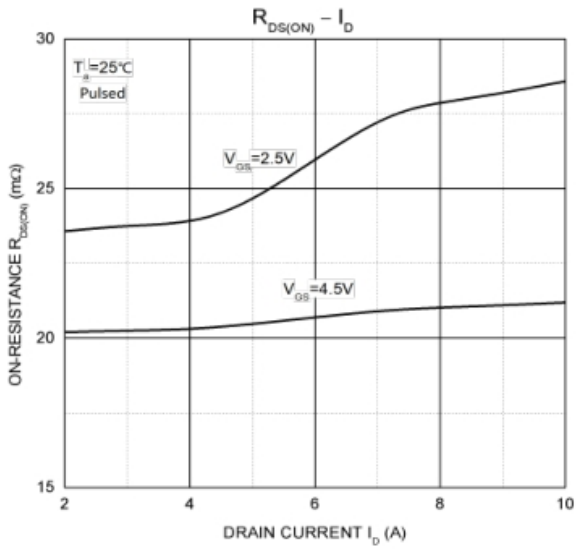
1. Pulse Test: Pulse width≤300μs, duty cycle ≤2%.

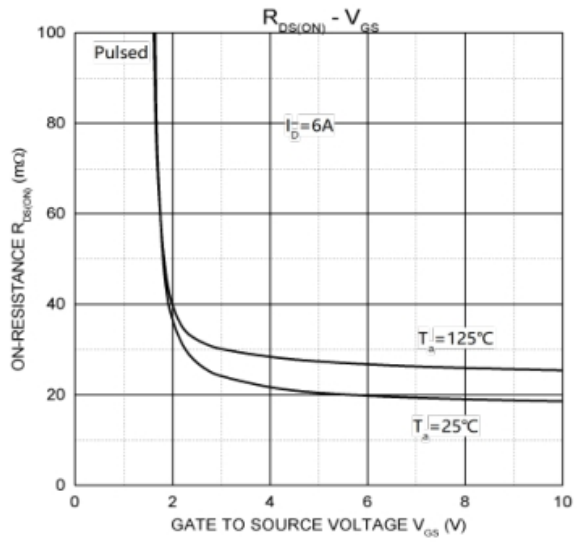
2. These parameters have no way to verify.

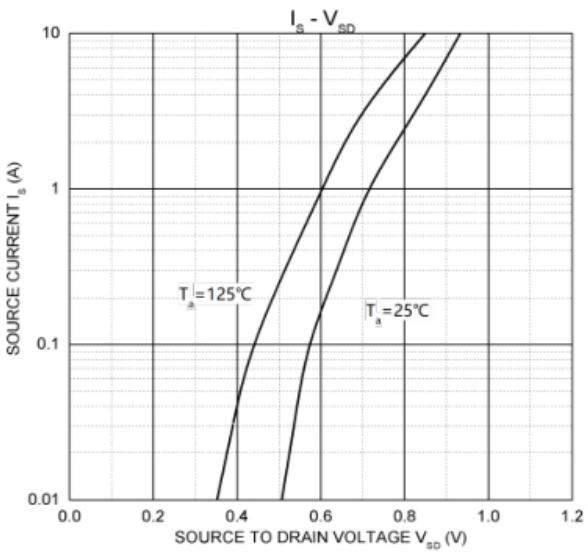
Typical Characteristics

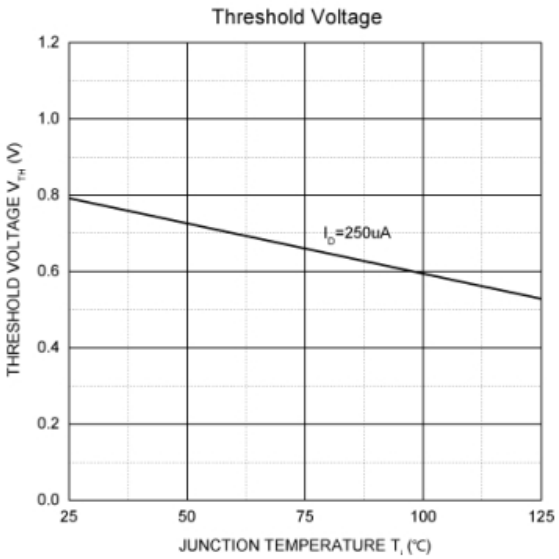




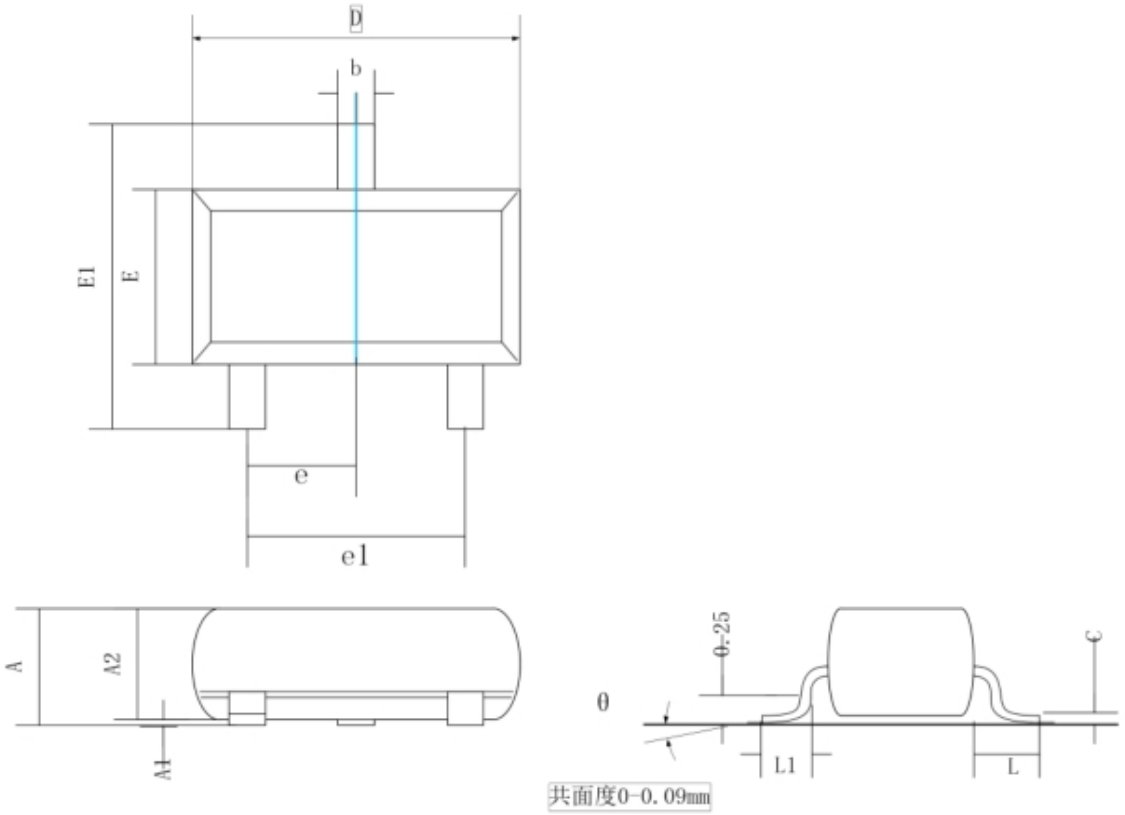








SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50
θ	0°	8°