



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	18m Ω @-4.5V	-9A
	24m Ω @-2.5V	

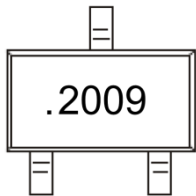
Feature

- Advanced trench MOSFET process technology
- Ultra low on-resistance with low gate charge

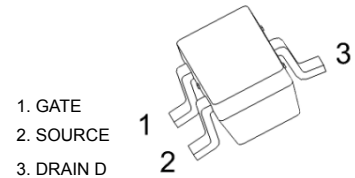
Application

- PWM application
- Load switch
- Battery charge in cellular handset

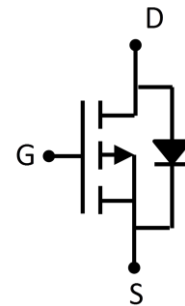
MARKING:



SOT-23-3L



Schematic diagram



ABSOLUTE 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}	± 12	V
Continuous Drain Current	I_D	-9	A
Pulsed Drain Current ¹	I_{DM}	-36	A
Power Dissipation ²	P_D	0.45	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	278	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

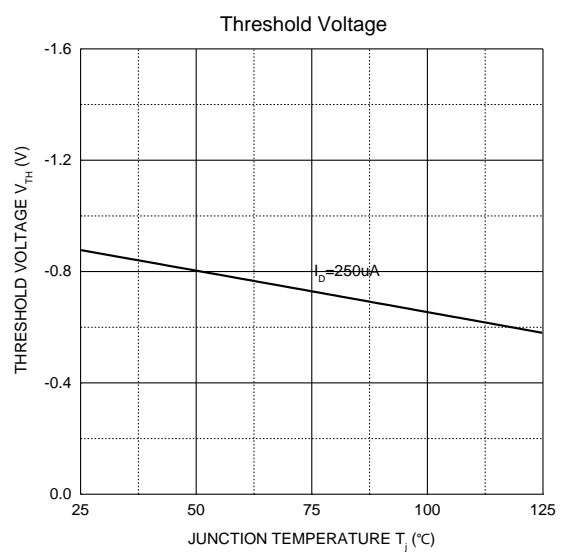
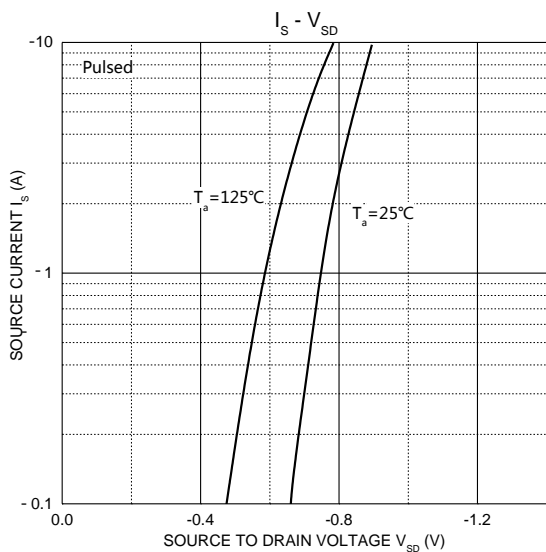
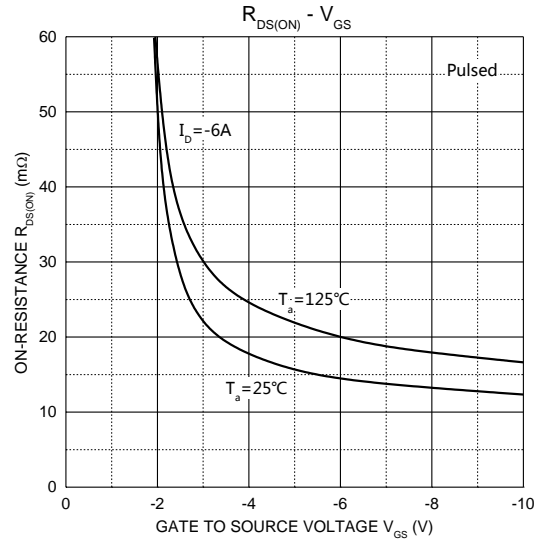
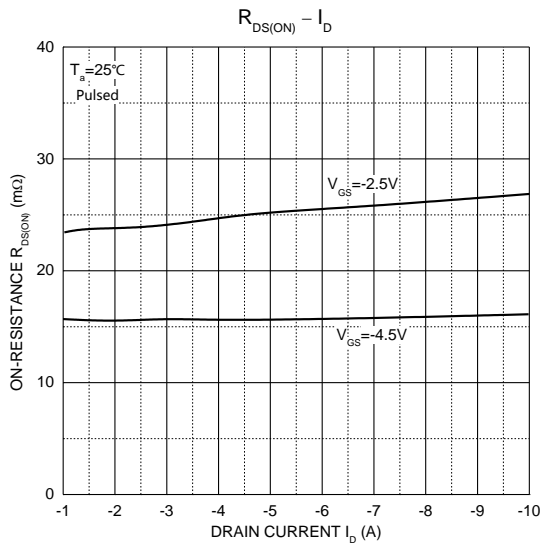
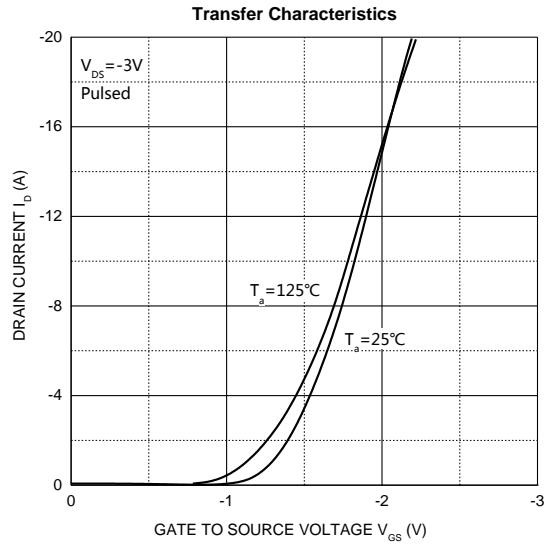
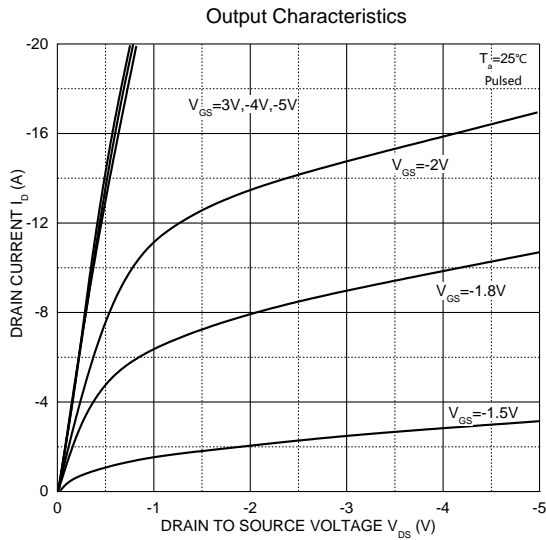
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

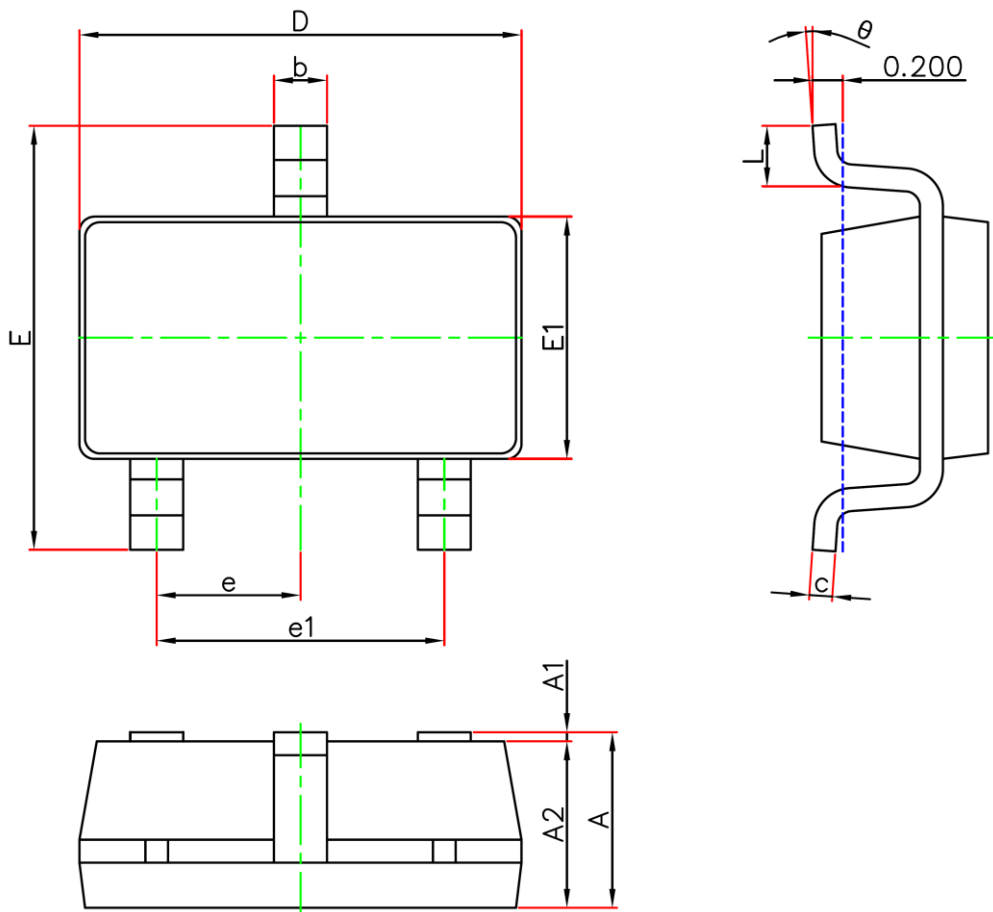
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±100	nA
Gate threshold voltage ³	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.5	-0.7	-1.2	V
Drain-source on-resistance ³	R _{DS(on)}	V _{GS} = -4.5V, I _D = -6A		18	24	mΩ
		V _{GS} = -2.5V, I _D = -6A		24	40	
Forward tranconductance ³	g _{FS}	V _{DS} = -5V, I _D = -6A	9	17		S
Dynamic characteristics⁴						
Input Capacitance	C _{iss}	V _{DS} = -10V, V _{GS} = 0V, f = 1MHz		2700		pF
Output Capacitance	C _{oss}			680		
Reverse Transfer Capacitance	C _{rss}			590		
Total Gate Charge	Q _g	V _{DS} = -6V, V _{GS} = -4.5V, I _D = -10A		35	48	nC
Gate-Source Charge	Q _{gs}			5		
Gate-Drain Charge	Q _{gd}			10		
Turn-on delay time	t _{d(on)}	V _{DD} = -10V, V _{GEN} = -4.5V, I _D = -1A R _g = 10Ω		11		ns
Turn-on rise time	t _r			35		
Turn-off delay time	t _{d(off)}			30		
Turn-off fall time	t _f			10		
Source-Drain Diode characteristics						
Diode Forward Current	I _S				-9	A
Diode Forward voltage ³	V _{DS}	V _{GS} = 0V, I _S = -2A		-0.75	-1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at T_a=25°C.
3. Pulse Test: Pulse With ≤300μs, Duty Cycle≤2%.
4. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics



SOT-23-3L Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0	0.150	0.000	0.006
A2	1.050	1.250	0.041	0.049
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	2.650	2.950	0.104	0.116
E1	1.500	1.700	0.059	0.067
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°