



Product Summary

BVDSS	RDS(on)	ID
20V	300mΩ@2.5V	0.9A

Application

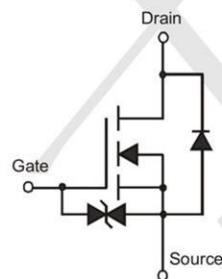
- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

Package and Pin Configuration

SOT-23



Circuit diagram



Marking:



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}	± 8	V
Continuous Drain Current	I_D	0.9	A
Pulsed Drain Current ($t=300\mu\text{s}$) ⁽¹⁾	I_{DM}	1.5	A
Power Dissipation ⁽²⁾	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^\circ\text{C}$



Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}} = 0\text{V}, I_D = 250\mu\text{A}$	20	25		V
Zero gate voltage drain current	I_{DSS}	$V_{\text{DS}} = 20\text{V}, V_{\text{GS}} = 0\text{V}$			1	μA
Gate-body leakage current	I_{GSS}	$V_{\text{GS}} = \pm 18\text{V}, V_{\text{DS}} = 0\text{V}$			± 10	μA
Gate threshold voltage ⁽³⁾	$V_{\text{GS}(\text{th})}$	$V_{\text{DS}} = V_{\text{GS}}, I_D = 250\mu\text{A}$	0.5	0.7	1.1	V
Drain-source on-resistance ⁽³⁾	$R_{\text{DS}(\text{on})}$	$V_{\text{GS}} = 4.5\text{V}, I_D = 500\text{mA}$		250	400	$\text{m}\Omega$
		$V_{\text{GS}} = 2.5\text{V}, I_D = 500\text{mA}$		300	500	
Forward transconductance	g_{FS}	$V_{\text{DS}} = 10\text{V}, I_D = 500\text{mA}$			1.2	S
Dynamic characteristics⁽⁴⁾						
Input Capacitance	C_{iss}	$V_{\text{DS}} = 10\text{V}, V_{\text{GS}} = 0\text{V}, f = 1\text{MHz}$		45		pF
Output Capacitance	C_{oss}			9		
Reverse Transfer Capacitance	C_{rss}			6		
Switching Characteristics⁽⁴⁾						
Turn-on delay time	$t_{\text{d}(\text{on})}$	$V_{\text{DD}} = 10\text{V}, I_D = 500\text{mA}, V_{\text{GS}} = 4.5\text{V}, R_G = 6\Omega$		20		ns
Turn-on rise time	t_r			90		
Turn-off delay time	$t_{\text{d}(\text{off})}$			750		
Turn-off fall time	t_f			400		
Source-Drain Diode characteristics						
Diode Forward voltage ⁽³⁾	V_{DS}	$I_s = 0.15\text{A}, V_{\text{GS}} = 0\text{V}$			1.3	V

Typical Electrical and Thermal Characteristics

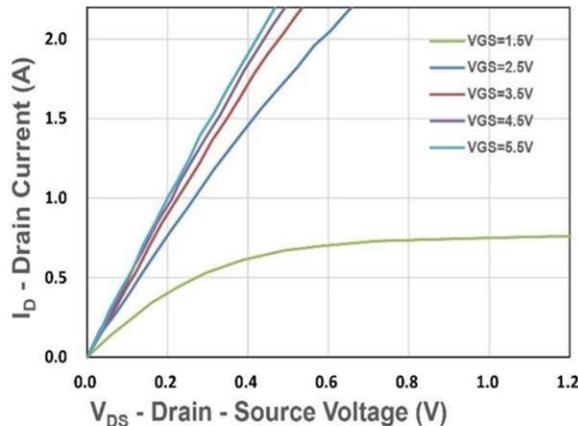


Figure 1. Output Characteristics

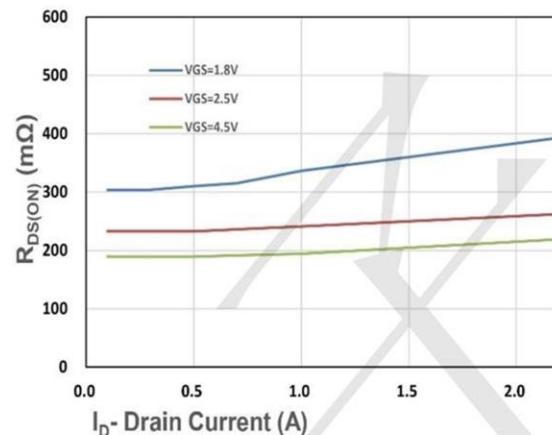


Figure 2. On-Resistance vs. ID

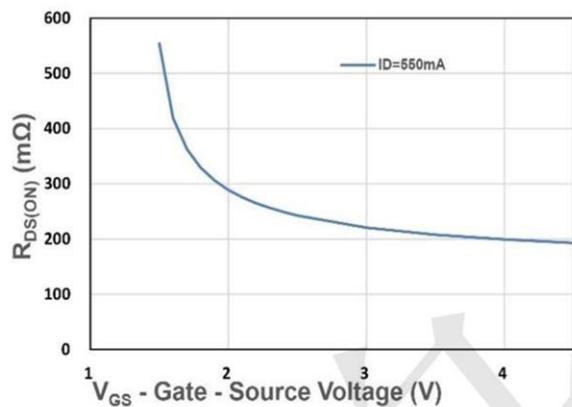


Figure 3. On-Resistance vs. VGS

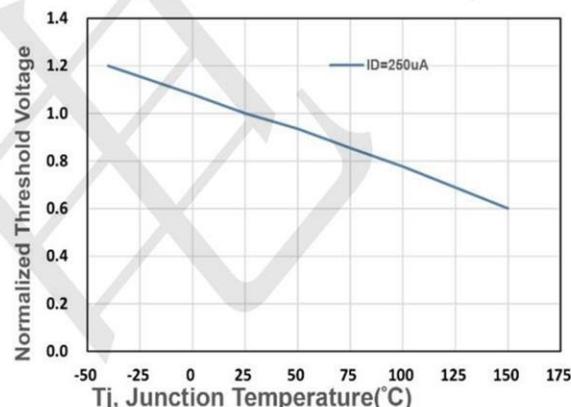


Figure 4. Gate Threshold Voltage

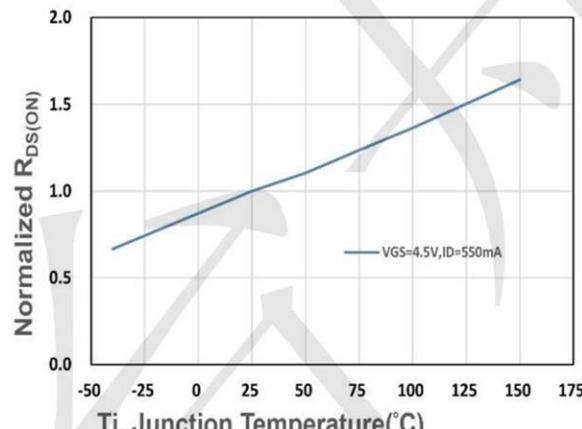


Figure 5. Drain-Source On Resistance

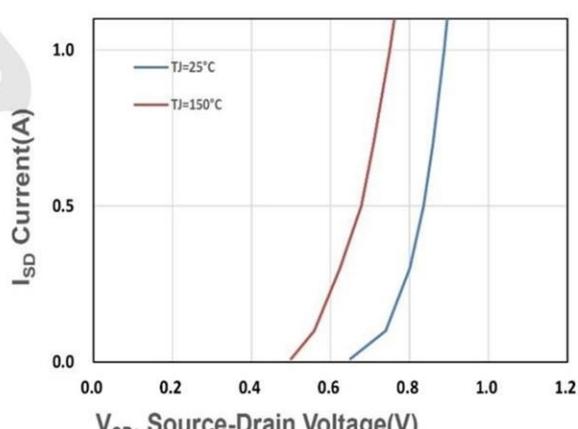
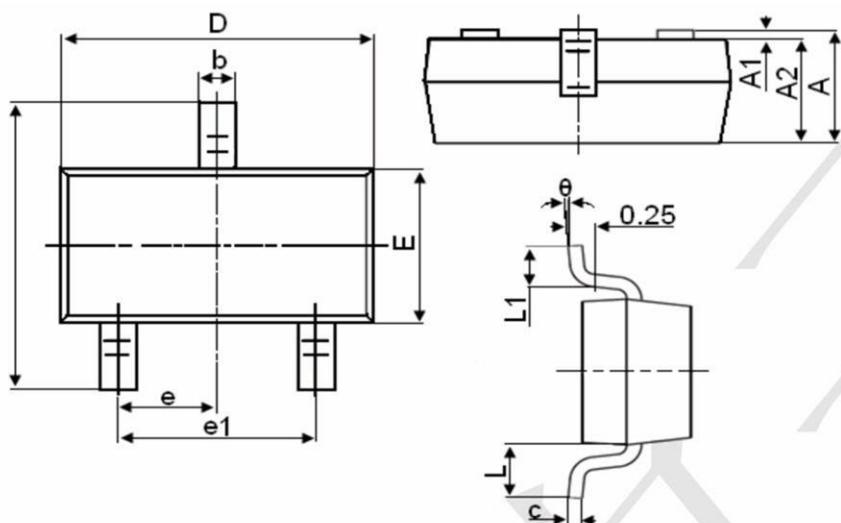


Figure 6. Source-Drain Diode Forward



SOT-23 Package Information



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e		0.950TYP
e1	1.800	2.000
L		0.550REF
L1	0.300	0.500
θ	0°	8°