

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	18mΩ@4.5V	6.8A
	22mΩ@2.5V	
	39mΩ@1.8V	

Feature

- Advanced trench process technology
- High density cell design for ultra low on-resistance

Application

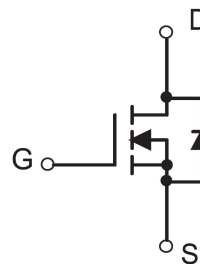
- Load Switch for Portable Devices
- DC/DC Converter

Package

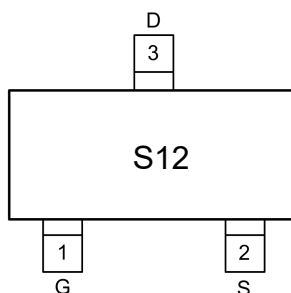


SOT-23

Circuit diagram



Marking



Absolute maximum ratings (Ta=25°C 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	6.8	A
Pulsed Drain Current	I_{DM}	27	A
Power Dissipation	P_D	1.2	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

Electrical characteristics (T_A=25 °C, 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			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.45		1.0	V
Drain-source on-resistance ¹⁾	R _{DS(on)}	V _{GS} =4.5V, I _D =6.8A			18	mΩ
		V _{GS} =2.5V, I _D =3.0A			22	
		V _{GS} =1.8V, I _D =2.5A			39	
Dynamic characteristics ²⁾						
Input Capacitance	C _{iss}	V _{DS} =10V,V _{GS} =0V,f =1MHz		900		pF
Output Capacitance	C _{oss}			165		
Reverse Transfer Capacitance	C _{rss}			75		
Total Gate Charge	Q _g	V _{DS} =10V,V _{GS} =4.5V, I _D =6.8A		9.2		nC
Gate-Source Charge	Q _{gs}			1.7		
Gate-Drain Charge	Q _{gd}			2.9		
Turn-on delay time	t _{d(on)}	V _{DD} =10V, V _{GS} =4.5V, R _{GEN} =3Ω, R _L =1.5Ω		12		nS
Turn-on rise time	t _r			52		
Turn-off delay time	t _{d(off)}			17		
Turn-off fall time	t _f			10		
Source-Drain Diode characteristics						
Diode Forward Current ¹⁾	I _S				6.8	A
Diode Forward voltage	V _{DS}	V _{GS} =0V, I _S =6.8A			1.2	V

Notes:

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

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

Typical Characteristics

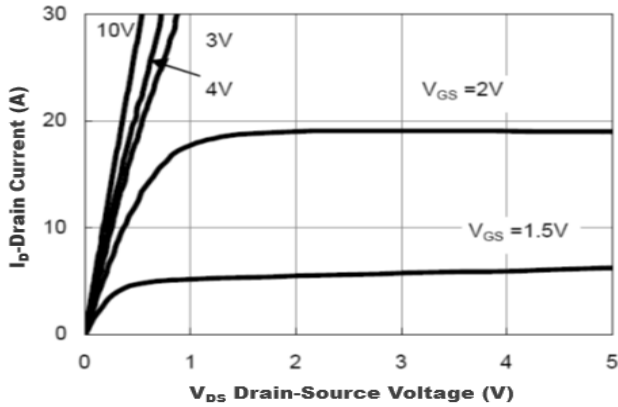


Figure1. Output Characteristics

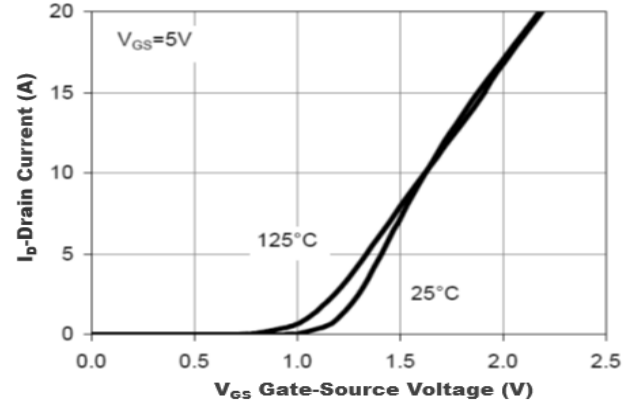


Figure2. Transfer Characteristics

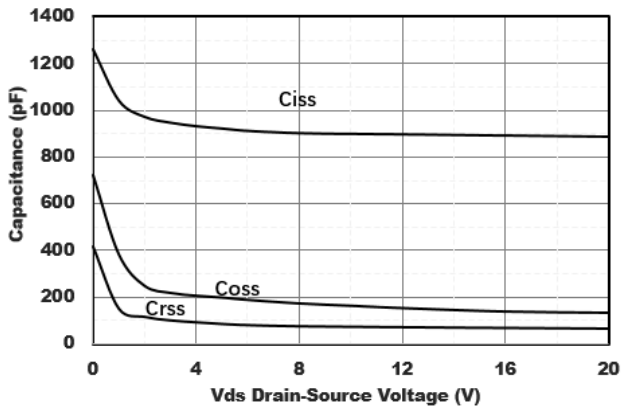


Figure3. Capacitance Characteristics

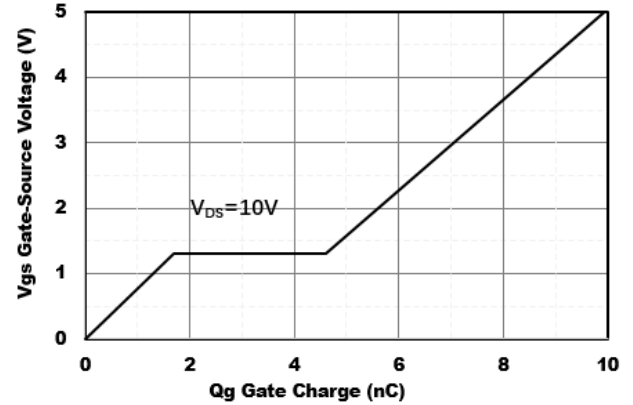


Figure4. Gate Charge

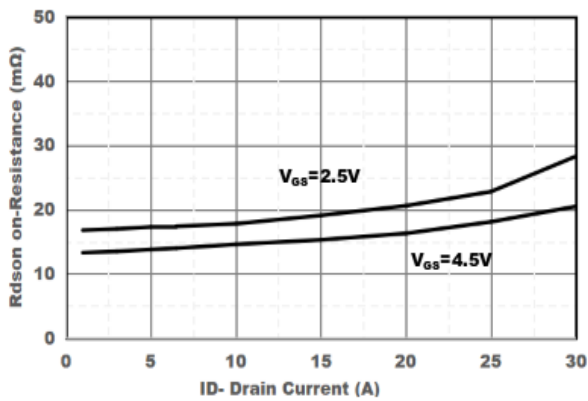


Figure5. Drain-Source on Resistance

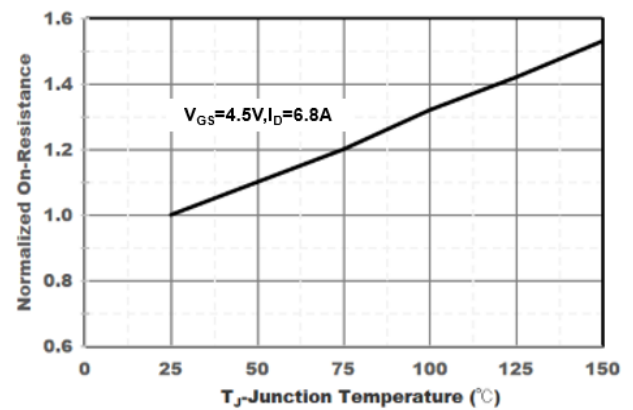
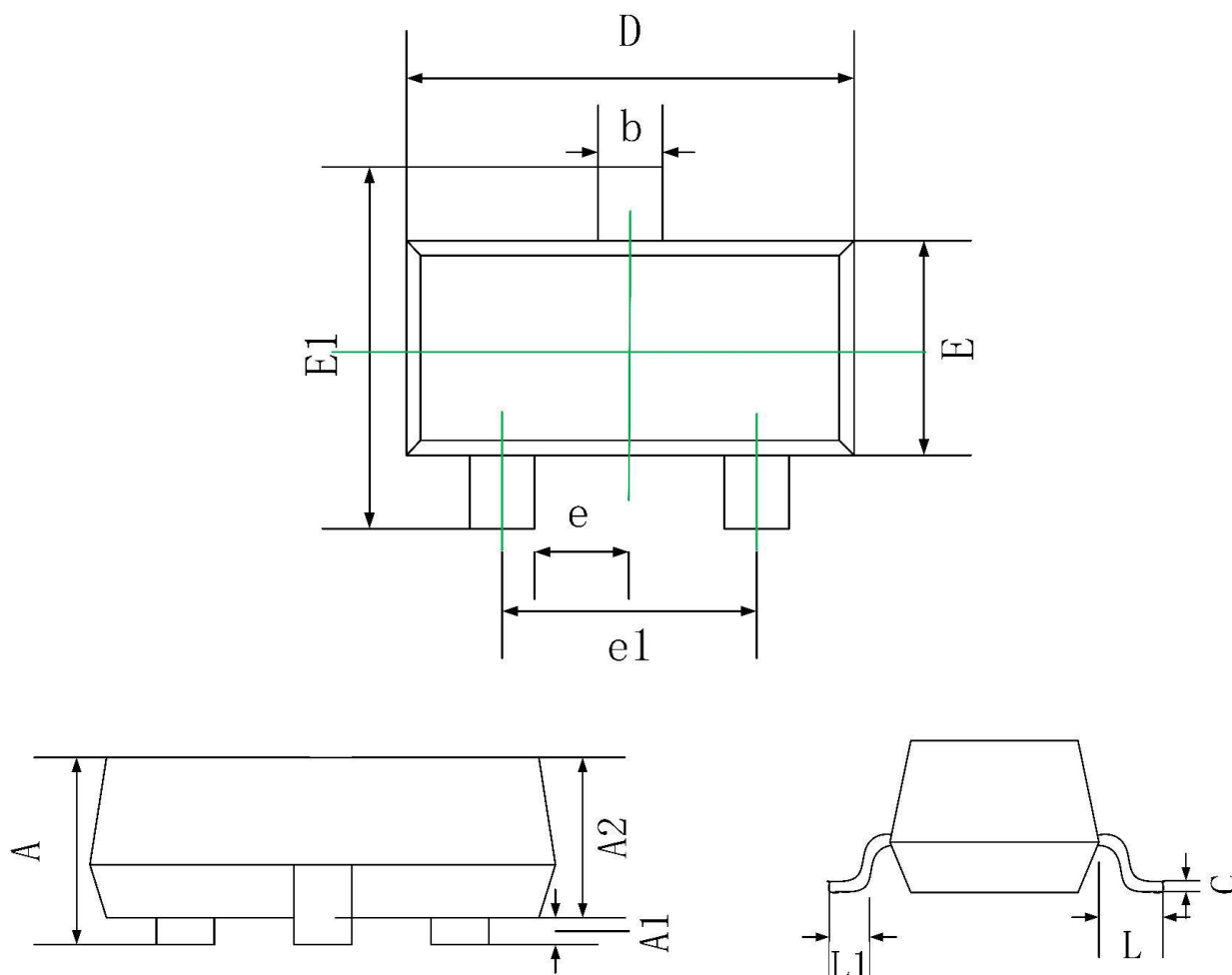


Figure6. Drain-Source on Resistance

SOT-23 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020