

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
40V	40mΩ@10V	4A
	65mΩ@4.5V	

Feature

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

Application

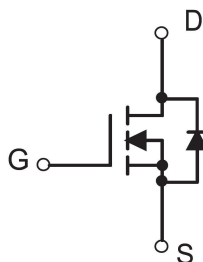
- Load Switch for Portable Devices
- DC/DC Converter

Package

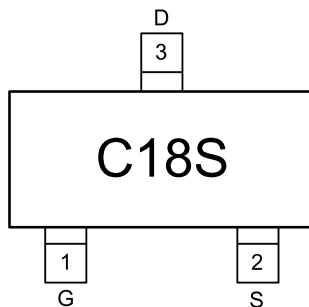


SOT-23

Circuit diagram



Marking:



Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	40	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current at Tc=25°C	I_D	4	A
Pulsed drain current	I_{DM}	16	A
Power Dissipation	P_D	1040	mW
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	40			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =40V,V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1		3	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =4A		32	40	mΩ
		V _{GS} =4.5V, I _D =3.5A		50	65	
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =20V,V _{GS} =0V,f =1MHz		560		pF
Output Capacitance	C _{oss}			70		
Gate Charge	Q _g	V _{DS} =15V,V _{GS} =10V,I _D =2A		5		nC
Turn-on time	t _(on)	V _{DS} =20V, V _{GS} =10V, R _{GEN} =1Ω		12		nS
Turn-off time	t _(off)			37		
Source-Drain Diode characteristics						
Diode Forward voltage	V _{DS}	V _{GS} =0V, I _S =1A			1.2	V

 Notes 1. Pulse Width $\leq 300\mu s$; Duty Cycles $\leq 2.0\%$

Typical Characteristics

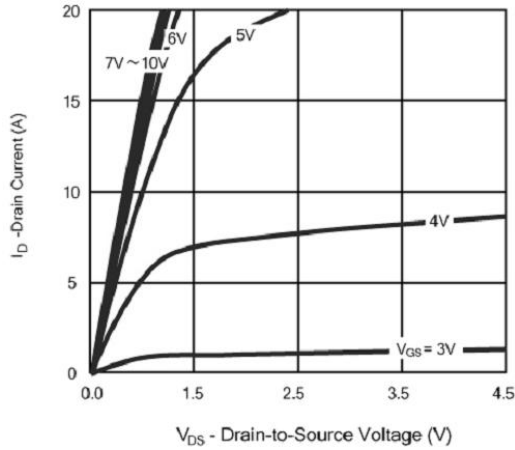


Figure 1: Output Characteristics

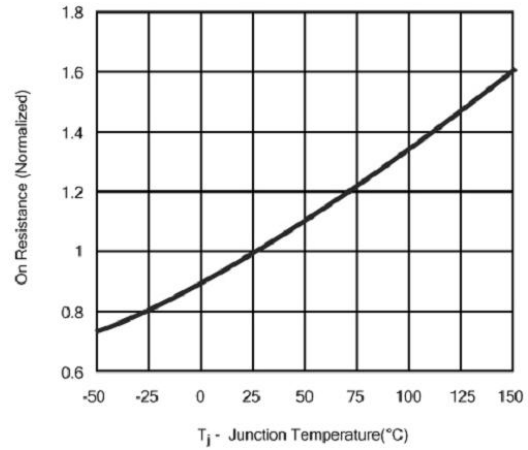


Figure 2: On-Resistance vs. Junction Temperature

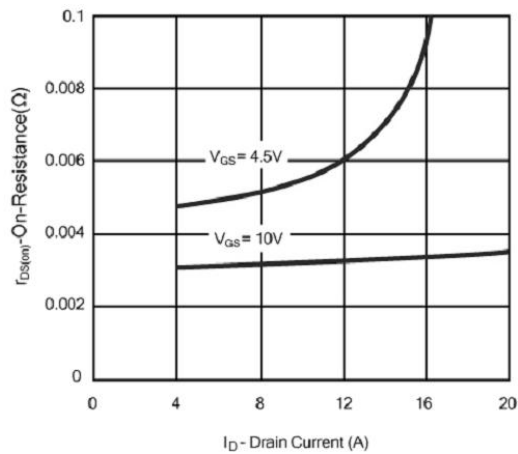


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

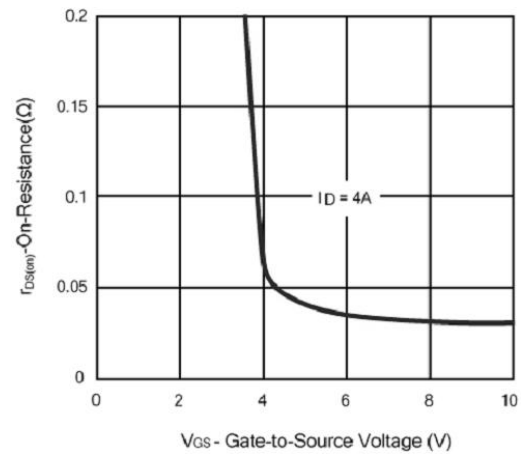


Figure 4: On-Resistance vs. Gate-Source Voltage

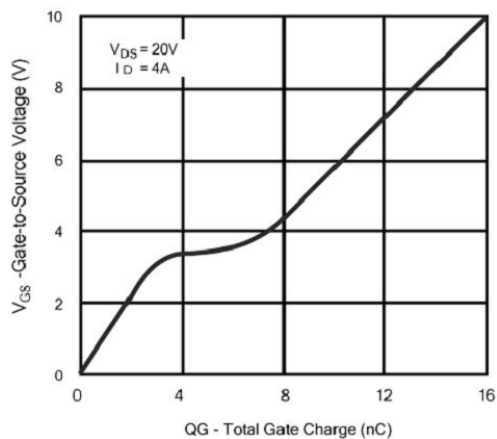


Figure 5: Gate-Charge Characteristics

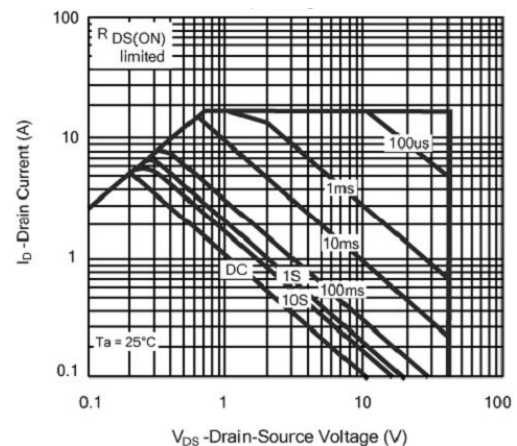
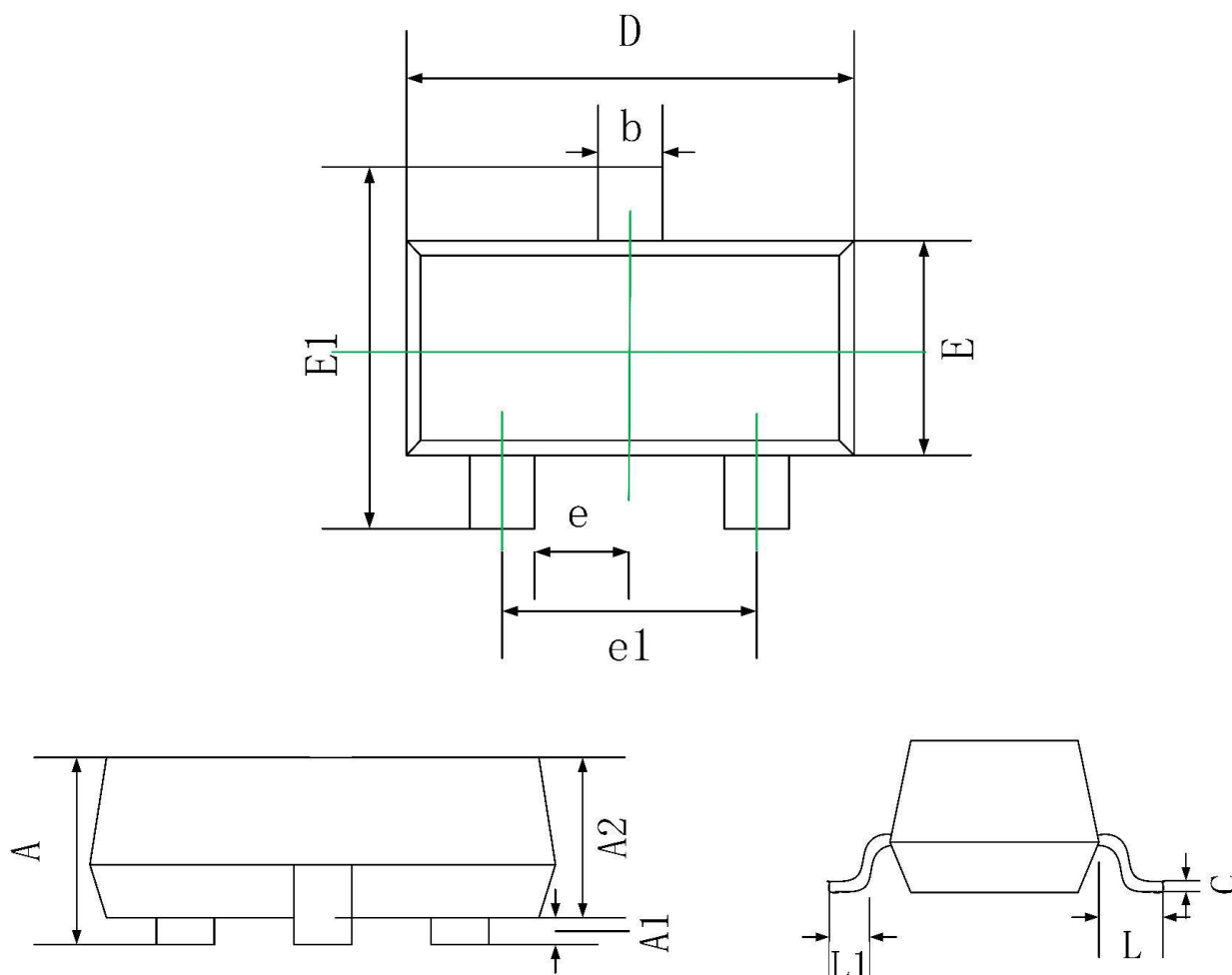


Figure 6: Safe Operating Area

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