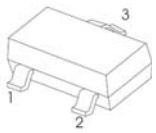
SOT-23 Plastic-Encapsulate MOSFETS

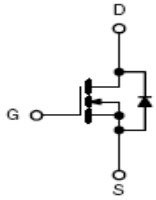
$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
20 V	25 mΩ@4.5V	4.5A
	38 mΩ@2.5V	

SOT-23



1. GATE
2. SOURCE
3. DRAIN

Equivalent Circuit



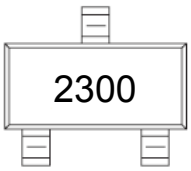
FEATURE

- TrenchFET Power MOSFET

APPLICATION

- DC/DC Converters
- Load Switching for Portable Applications

MARKING



Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±10	
Continuous Drain Current	t=5s	I_D	4.5	A
Pulsed Drain Current		I_{DM}	18	
Continuous Source-Drain Diode Current		I_S	1.04	
Maximum Power Dissipation	t=5s	P_D	1.0	W
Thermal Resistance from Junction to Ambient		$R_{\theta JA}$	125	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature		T_{stg}	-50 ~+150	

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	20			V
Gate-source leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±10V			±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} =20V, V_{GS} =0V			1.0	μA
Gate-source threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	0.7	0.9	V
Drain-source on-state resistance[a]	$R_{DS(on)}$	V_{GS} =4.5V, I_D =4.0A		20	25	mΩ
		V_{GS} =2.5V, I_D =3.0A		25	38	
Forward tranconductance[a]	g_{fS}	V_{DS} =10V, I_D =4.5A		6		S
Dynamic[b]						
Input capacitance	C_{iss}	V_{DS} =10V,V_{GS} =0V,f =1MHz		620		pF
Output capacitance	C_{oss}			114		
Reverse transfer capacitance	C_{rss}			64		
Gate resistance	R_g	f =1MHz	0.5		4.8	Ω
Turn-on delay Time	$t_{d(on)}$	V_{GEN}=4.5V,V_{DD}=10V, I_D =4A,R_G=3Ω, R_L=1.5Ω			13	ns
Rise time	t_r				54	
Turn-off Delay time	$t_{d(off)}$				18	
Fall yime	t_f				11	
Drain-source body diode characteristics						
Forward diode voltage	V_{SD}	V_{GS} =0V,I_S=4.5A			1.2	V

Notes :

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

b. These parameters have no way to verify.

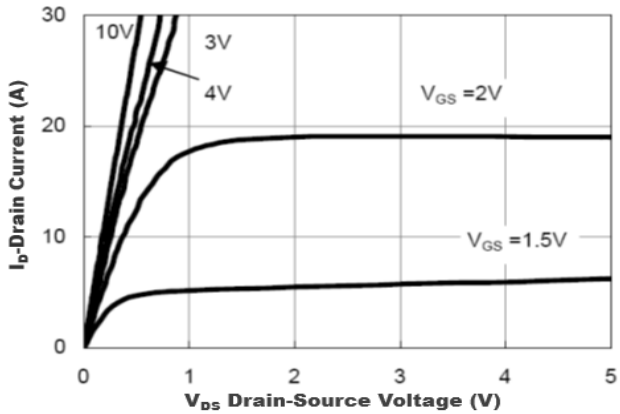


Figure1. Output Characteristics

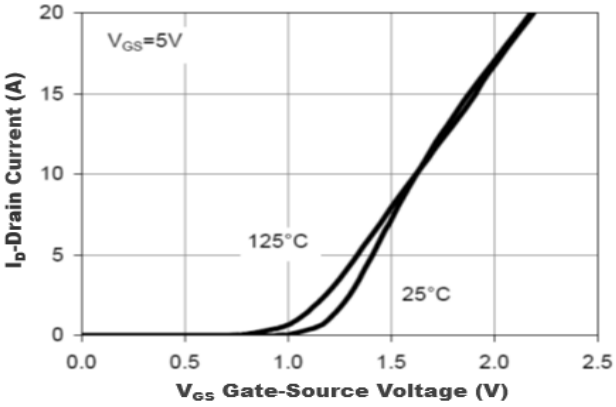


Figure2. Transfer Characteristics

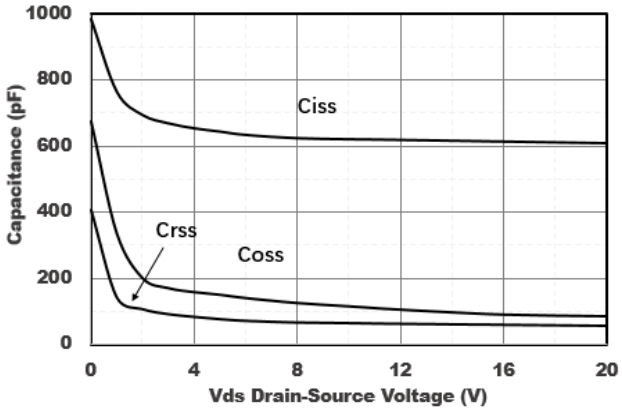


Figure3. Capacitance Characteristics

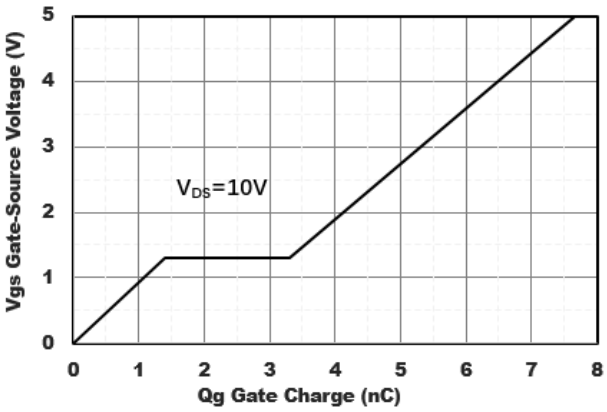


Figure4. Gate Charge

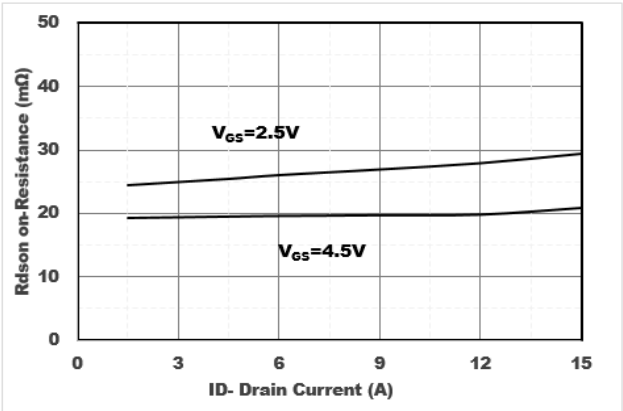


Figure5. Drain-Source on Resistance

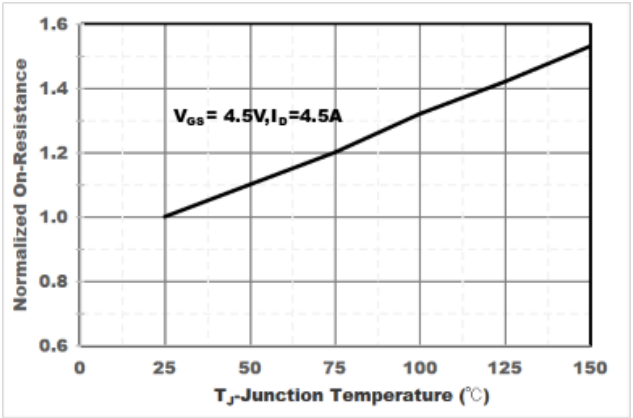
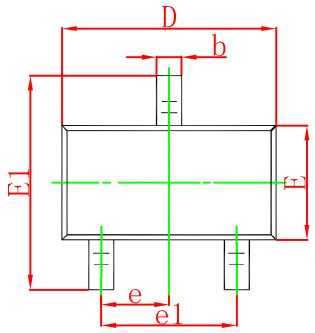
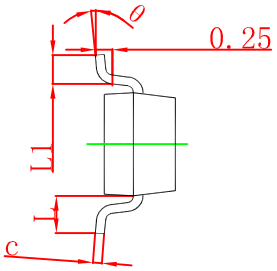
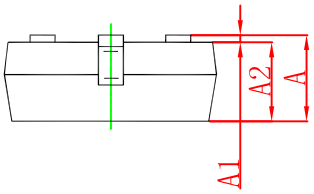


Figure6. Drain-Source on Resistance

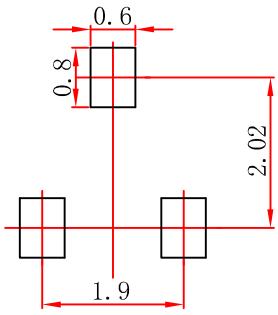






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.