

SOT-23 Plastic-Encapsulate MOSFETS

FEATURE

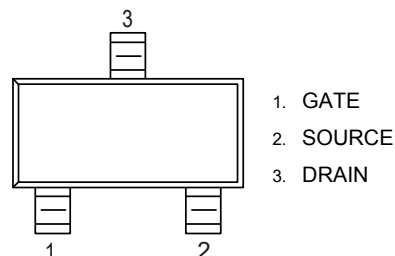
TrenchFET Power MOSFET

APPLICATIONS

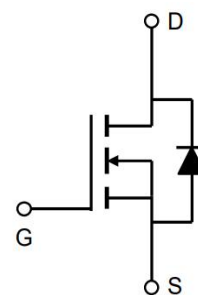
- Load Switch for Portable Devices
- DC/DC Converter

SOT-23

RoHS
COMPLIANT



Equivalent Circuit



Marking



Absolute Maximum Ratings(Ta=25°C)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	± 10	V
I_D	Continuous Drain Current	2.3	A
I_S	Continuous Source-Drain Current(Diode Conduction)	0.6	A
P_D	Power Dissipation	400	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient ($t \leq 5s$)	300	°C/W
T_J, T_{stg}	Operation Junction And Storage Temperature Range	-55~+150	°C

Electrical Characteristics (Ta=25°C unless otherwise specified)

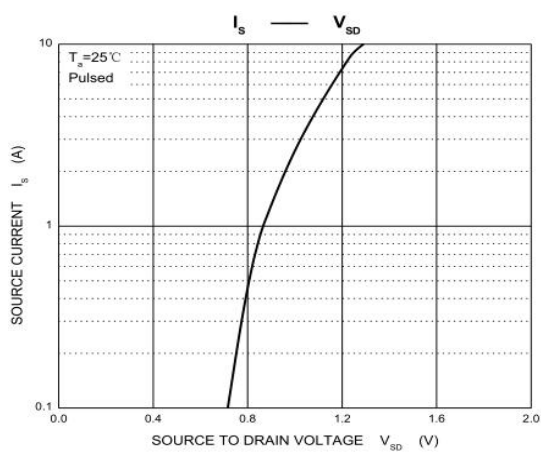
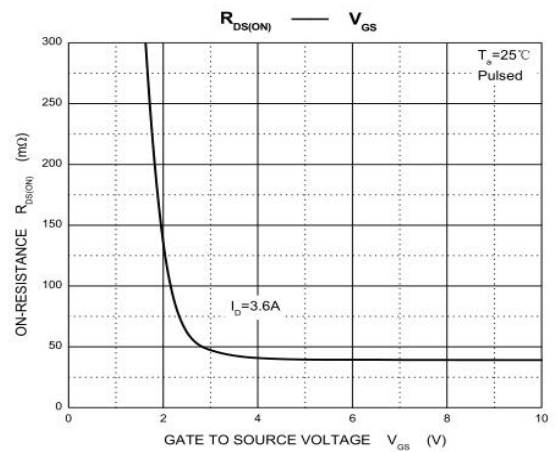
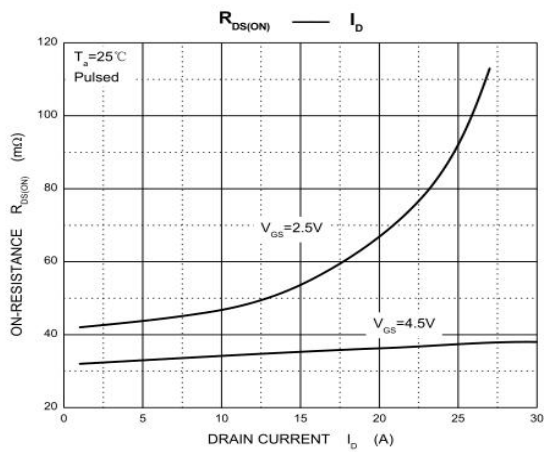
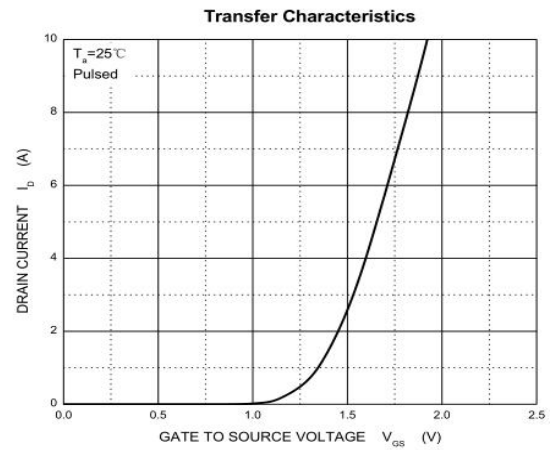
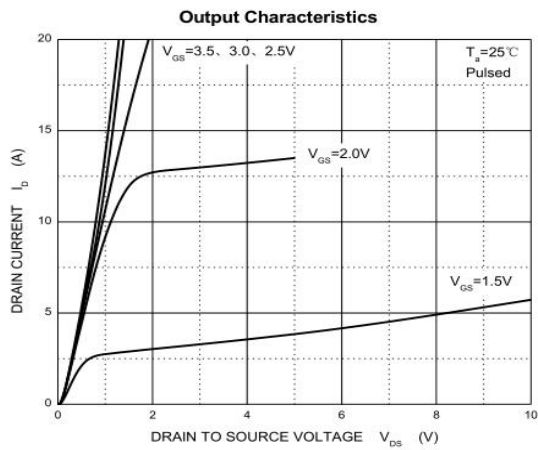
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
Static						
V _{(BR)DSS}	Drain-source breakdown voltage	V _{GS} =0, I _D =250μA	20			V
V _{GS(th)}	Gate-threshold voltage	V _{DS} = V _{GS} , I _D =250μA	0.6		1.1	V
I _{GSS}	Collector cut-off current	V _{DS} =0, V _{GS} =±10V			100	nA
I _{DSS}	Collector cut-off current	V _{DS} =20V, V _{GS} =0V			1	μA
R _{DS(on)}	Drain-source on-resistance ^a	V _{GS} =4.5V, I _D =2A		45	55	mΩ
		V _{GS} =2.5V, I _D =1A		60	80	mΩ
g _{FS}	Forward transconductance ^a	V _{DS} =5V, I _D =2.3A		10		S
V _{SD}	Diode forward voltage	I _S =1A, V _{GS} =0V			1.2	V
Dynamic						
Q _g	Total gate charge	V _{DS} =10V, V _{GS} =4.5V, I _D =2.3A		5.0	10	nC
Q _{gs}	Gate-source charge			0.65		
Q _{gd}	Gate-drain charge			1.5		
C _{iss}	Input capacitance ^b	V _{DS} =10V, V _{GS} =0V, f=1MHz		340		pF
C _{oss}	Output capacitance ^b			120		
C _{rss}	Reverse transfer capacitance ^b			80		
Switching ^b						
t _{d(on)}	Turn-on delay time	V _{DS} =10V, R _L =5.5Ω, I _D ≈2.5A, V _{GEN} =4.5V, R _g =6Ω		12		nS
t _r	Rise time			36		
t _{d(off)}	Turn-off delay time			34		
t _f	Fall time			10		

Notes :

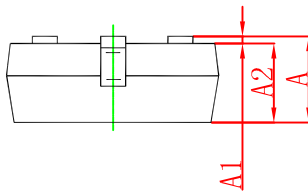
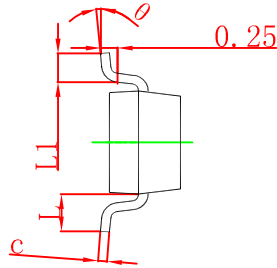
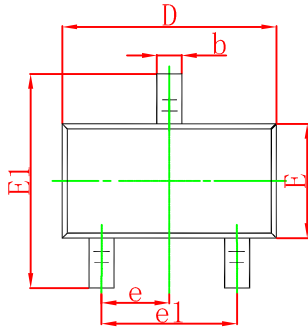
a. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

b. These parameters have no way to verify.

Typical Characteristics

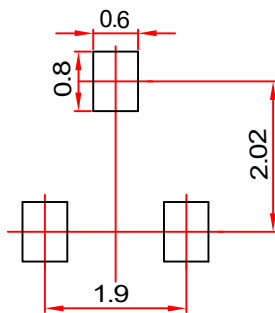


SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.400	0.035	0.055
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.350	0.500	0.014	0.020
c	0.080	0.190	0.003	0.007
D	2.700	3.100	0.106	0.122
E	1.200	1.650	0.047	0.065
E1	2.200	3.000	0.087	0.118
e	0.950 TYP		0.037 TYP	
e1	1.780	2.040	0.070	0.080
L	0.550 REF		0.022 REF	
L1	0.200	0.500	0.008	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in/millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.