

20V P-Channel MOSFETs

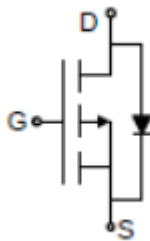
MOSFET Product Summary

$V_{(BR)DSS}$	$R_{DS(on)Max.}$	I_D
-20V	20.8mΩ@-4.5V	-8A

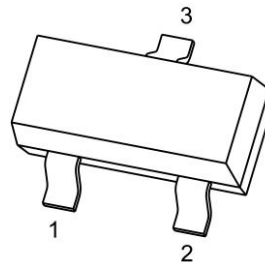
FEATURES

TrenchFET Power MOSFET

P-CHANNEL MOSFET



SOT-23



APPLICATIONS

PWM Applications
Load Switch Power
Management

Maximum ratings ($T_c=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current	I_D	-8	A
Pulsed Drain Current	I_{DM}	-32	
Maximum Continuous Drain to Source Diode Forward	I_S	-4	
Maximum Power Dissipation	P_D	1.2	W
Junction Temperature	T_J	150	$^{\circ}\text{C/W}$
Storage Temperature	T_{stg}	-55 ~ +150	$^{\circ}\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS $T_C=25\text{ }^{\circ}\text{C}$ unless otherwise specified

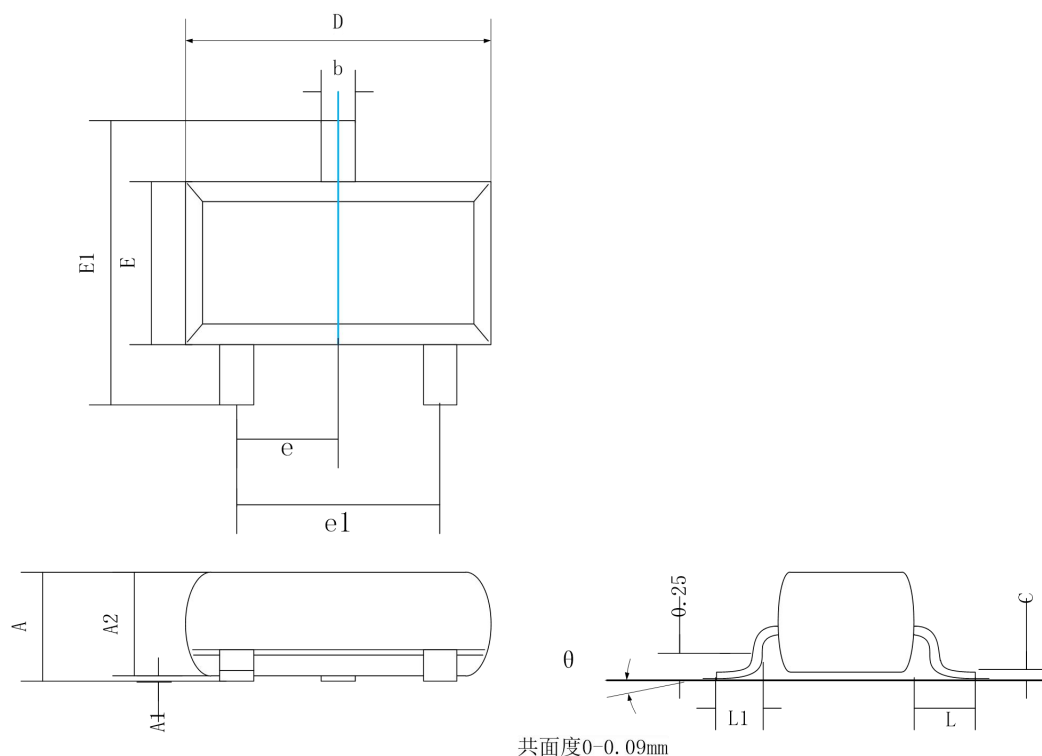
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.68	-1.0	
Gate-source leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 12V$			± 100	nA
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$			-1	μA
Drain-source on-state resistance ^a	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -8A$		17	20.8	m Ω
		$V_{GS} = -2.5V, I_D = -5A$		22	26	
Body diode voltage	V_{SD}	$I_S = -4A$			-1.2	V
Dynamic^b						
Input capacitance	C_{iss}	$V_{DS} = -10V, V_{GS} = 0V, f = 1MHz$		1030		pF
Output capacitance	C_{oss}			180		
Reverse transfer capacitance	C_{rss}			130		
Total gate charge	Q_g	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -5A$		13		nC
Gate-source charge	Q_{gs}			1.5		
Gate-drain charge	Q_{gd}			3.6		
Turn-on delay time	$t_{d(on)}$	$V_{DS} = -10V, V_{GS} = -4.5A, RL = 2\Omega, R_{GEN} = 3\Omega$		12		ns
Rise time	t_r			10		
Turn-off delay time	$t_{d(off)}$			19		
Fall time	t_f			25		

Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

Package Mechanical Data

SOT-23



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50
θ	0°	8°

V 1.1