

P-Channel MOSFET

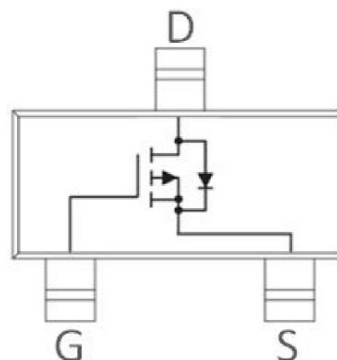
FEATURES

- ✧ Epoxy meets UL 94 V-0 flammability rating
- ✧ High density cell design for low RDS(ON)
- ✧ Trench Power LV MOSFET technology

APPLICATIONS

- ✧ Battery management
- ✧ High speed switch
- ✧ Low power DC to DC converter

PIN CONFIGURATION



Package: SOT-23

Marking: A19T

ABSOLUTE MAXIMUM RATING (Tamb=25°C)

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Continuous Drain Current	-4.2	A
I_{DM}	Drain Current-Pulsed	-16.8	A
P_D	Total Power Dissipation	400	mW
T_J & T_{stg}	Junction Temperature and Storage Temperature	-55 to 150	°C
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	350	°C/W

ELECTRICAL CHARACTERISTICS (Tamb=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
$V_{(BR)DSS}$	Drain-Source Voltage Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	-30			V
$V_{GS(th)}$	Gate-Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	-0.7		-1.3	V
I_{GSS}	Gate-Body Leakage	$V_{DS}=0V, V_{GS}=\pm 12V$			100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=-30V, V_{GS}=0V$			1	μA
$R_{DS(on)}$ ①	Drain-Source On-Resistance	$V_{GS}=-10V, I_D=-4.2A$ $V_{GS}=-4.5V, I_D=-4A$ $V_{GS}=-2.5V, I_D=-1A$		40 60	60 80 110	m Ω
V_{SD}	Diode Forward Voltage	$V_{GS}=0V, I_S=-3A$			-1.1	V

Dynamic Characteristics (Tamb=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
Ciss	Input Capacitance②	$V_{DS}=-15V$ $V_{GS}=0V$ $f=1MHz$		950		pF
Coss	Output Capacitance②			115		
Crss	Reverse Transfer Capacitance②			77		

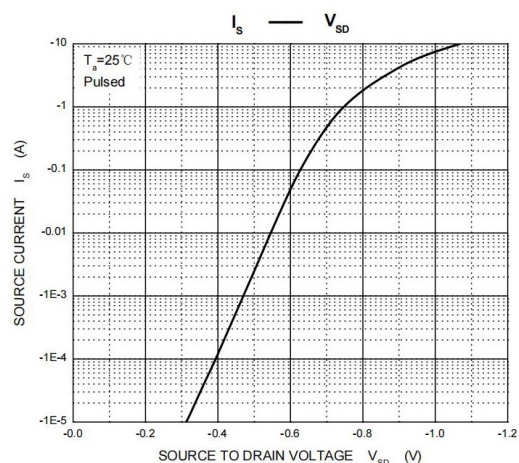
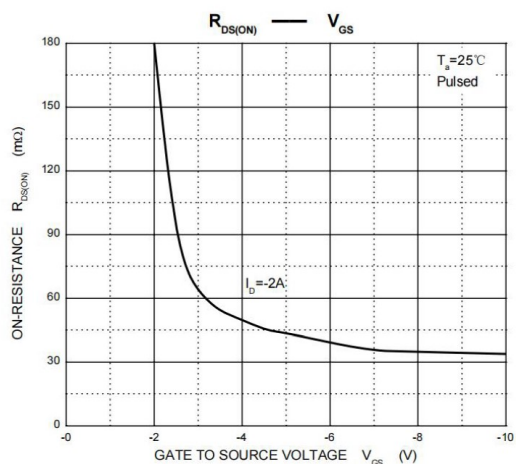
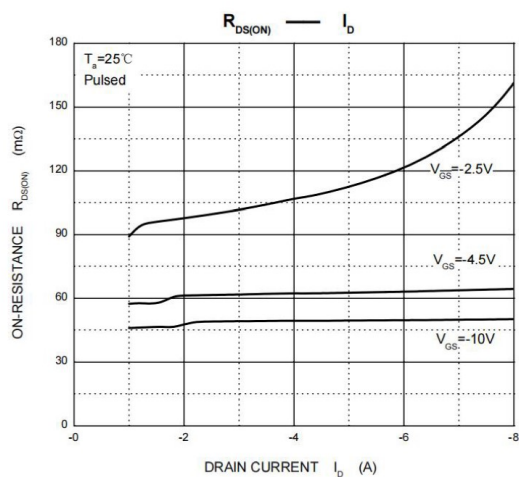
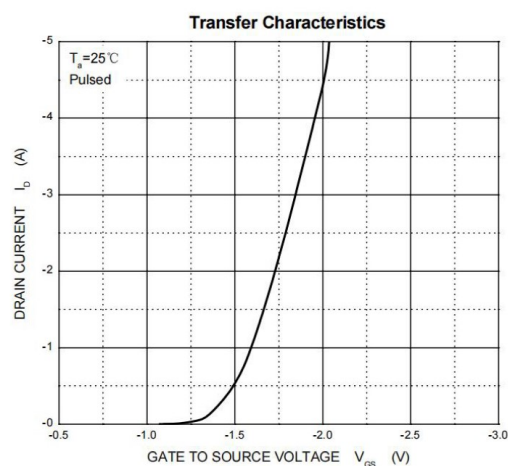
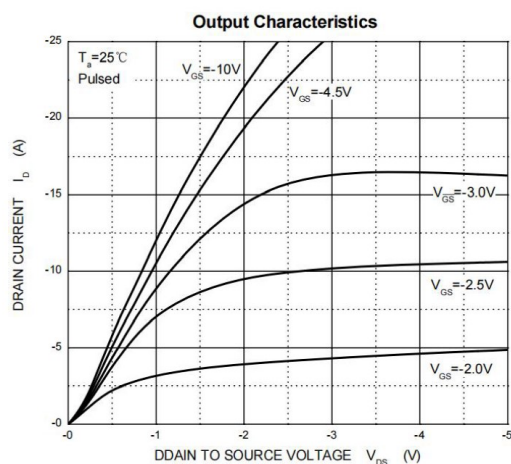
Switching Characteristics (Tamb=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
$t_{d(on)}$	Turn on Delay Time	$V_{GS}=-10V, V_{DS}=-15V,$ $R_L=3.6\Omega, R_{GEN}=6\Omega$		6.3		nS
t_r	Turn-on Rise Time			3.2		
$t_{d(off)}$	Turn off Delay Time			38		
t_f	Turn-off Fall Time			12		

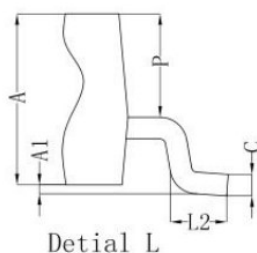
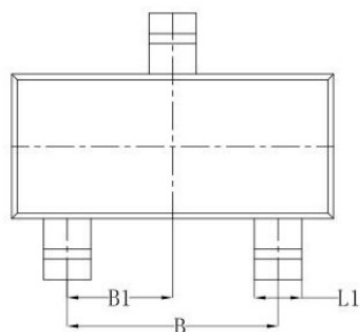
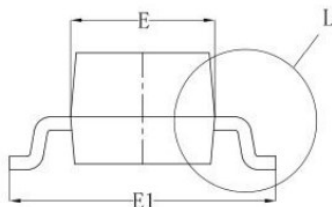
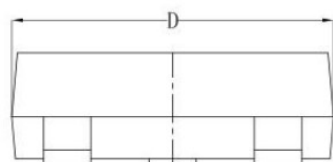
Note:

- ① Pulse test: Pulse width $\leq 300\mu S$, duty cycle $\leq 2\%$.
 ② These parameters have no way to verify.

ELECTRICAL CHARACTERISTICS CURVE



SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dim in mm		
	Min	Nom	Max
A	0.900	1.000	1.100
A1	0.000	0.050	0.100
B	1.800	1.900	2.000
B1	0.950 TYP		
C	0.100	0.110	0.120
D	2.800	2.900	3.000
E	1.250	1.300	1.350
E1	2.250	2.400	2.550
L1	0.350	0.400	0.500
L2	0.200	0.350	0.450
P	0.550	0.575	0.600