



Description

P-channel MOSFET

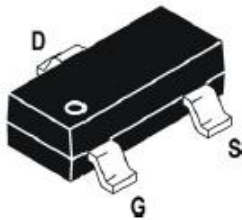
Features

- $V_{DS} = -19V$, $I_D = -2.0A$
- $R_{DS(ON)} < 120m\Omega$ @ $V_{GS} = -4.5V$
 $R_{DS(ON)} < 150m\Omega$ @ $V_{GS} = -2.5V$
- High Power and Current Handling Capability
- Lead Free Product is Acquired
- Surface Mount Package

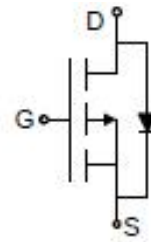
Application

- PWM Applications
- Load Switch
- Power Management

Package



SOT-23



Schematic Diagram

Absolute Maximum Ratings (T_c=25°C unless otherwise specified)

Parameter		Symbol	Maximum	Unit
Drain-source Voltage		V _{DS}	-19	V
Gate-source Voltage		V _{GS}	±10	V
Drain Current	TA=25°C @ Steady State	I _D	-2.0	A
	TA=70°C @ Steady State		-1.4	
Pulsed Drain Current A		I _{DM}	-8	A
Total Power Dissipation @ TA=25°C		PD	0.7	W
Thermal Resistance Junction-to-Ambient B		R _{θJA}	178	°C/W
Junction and Storage Temperature Range		T _J , T _{STG}	-55~+150	°C



J3415B(文件编号: S&CIC1922)

P-Channel Trench Power MOSFET

Electrical Characteristics ($T_C=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BVDSS	$V_{GS}=0V, I_D=-250\mu A$	-19			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-18V, V_{GS}=0V, T_C=25^\circ\text{C}$			-1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 10V, V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.4	-0.62	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-4.5V, I_D=-1.5A$		94	120	m Ω
		$V_{GS}=-2.5V, I_D=-1.0A$		128	150	
Diode Forward Voltage	VSD	$I_S=-2.0A, V_{GS}=0V$		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	I_S				-2.0	A
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{DS}=-10V, V_{GS}=0V, f=1\text{MHz}$		227		pF
Output Capacitance	C_{oss}			36		
Reverse Transfer Capacitance	C_{rss}			23		
Switching Parameters						
Total Gate Charge	Q_g	$V_{GS}=-4.5V, V_{DS}=-10V, I_D=-1.5A$		3.1		nC
Gate Source Charge	Q_{gs}			0.55		
Gate Drain Charge	Q_{gd}			0.7		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=-4.5V, V_{DD}=-10V, I_D=-1A, R_{GEN}=2.5\Omega$		12		ns
Turn-on Rise Time	t_r			54		
Turn-off Delay Time	$t_{D(off)}$			15		
Turn-off Fall Time	t_f			9		

Notes:A.A.Pulse Test: Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

B.Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.



Typical Performance Characteristics

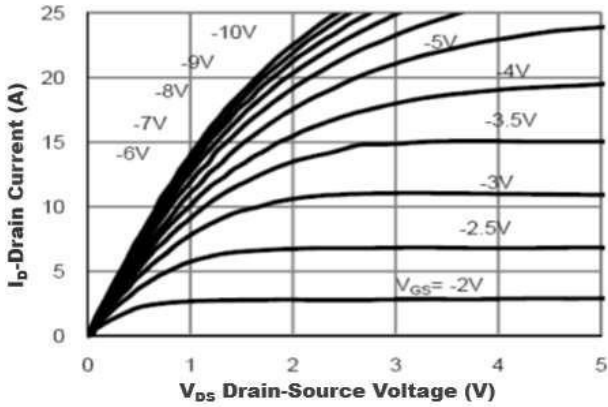


Figure1. Output Characteristics

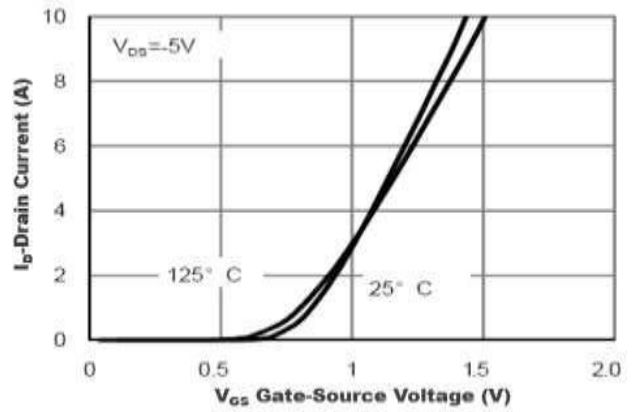


Figure2. Transfer Characteristics

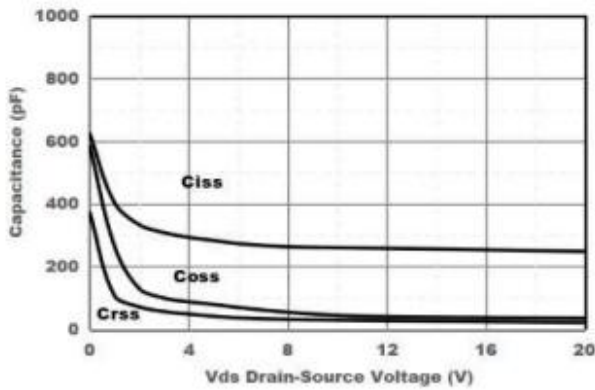


Figure3. Capacitance Characteristics

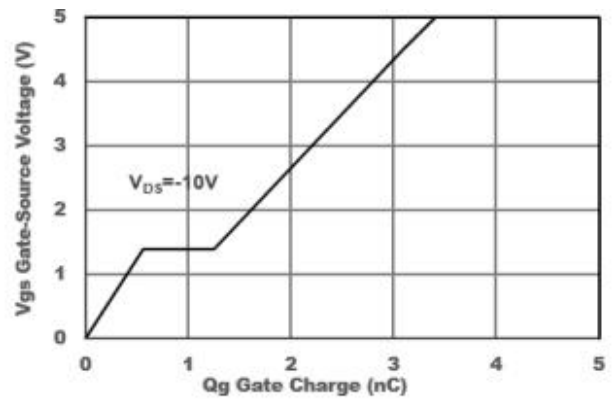


Figure4. Gate Charge

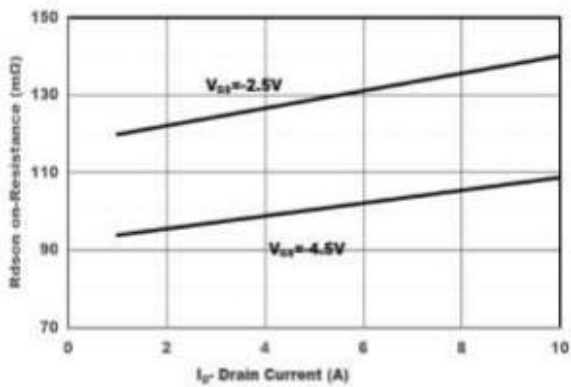


Figure5. Drain-Source on Resistance

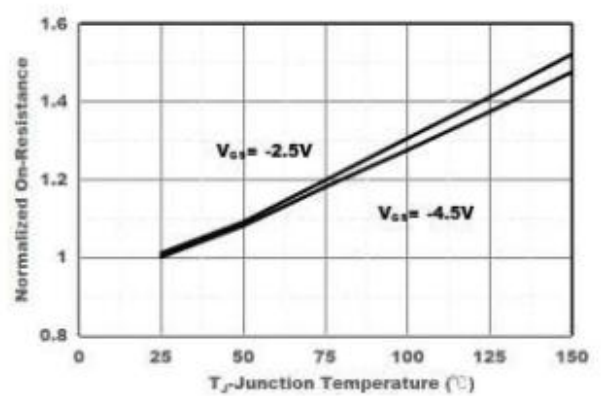


Figure6. Drain-Source on Resistance

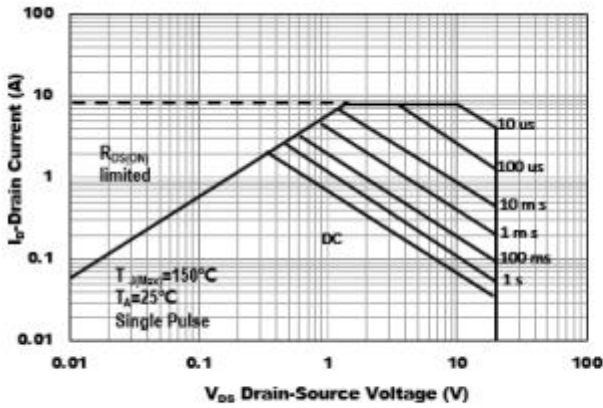


Figure7. Safe Operation Area

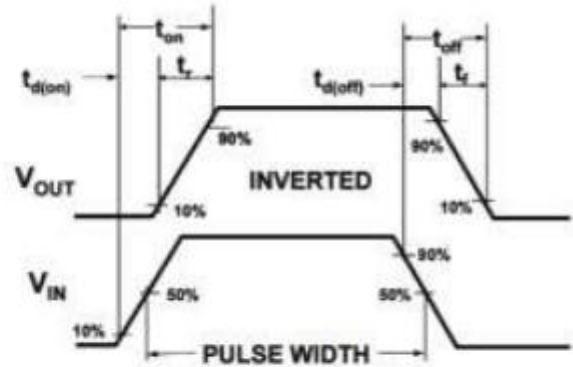


Figure8. Switching wave

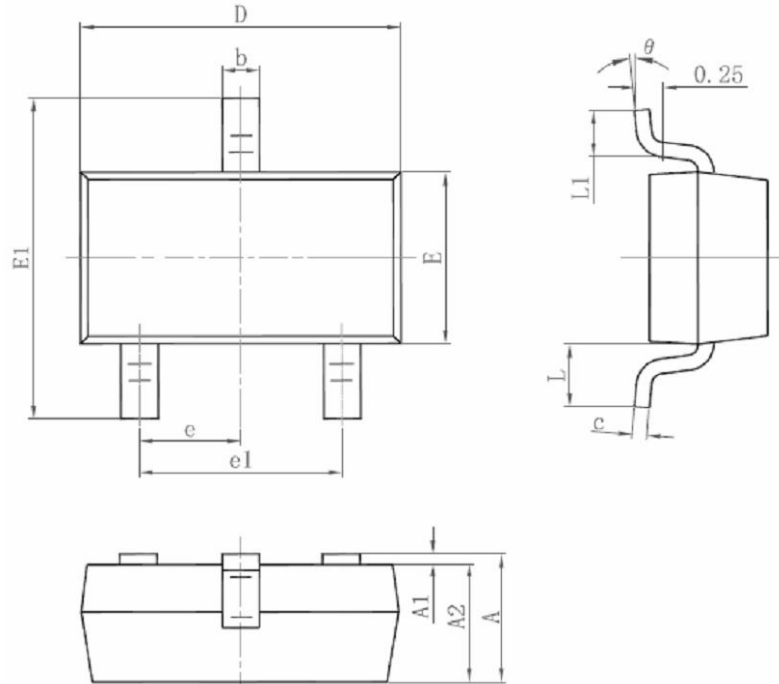


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Package Information.

➤ SOT-23(小)



符号	毫米		英寸	
	最小	最大	最小	最大
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°