

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	45mΩ@-10V	-4.1A
	57mΩ@-4.5V	

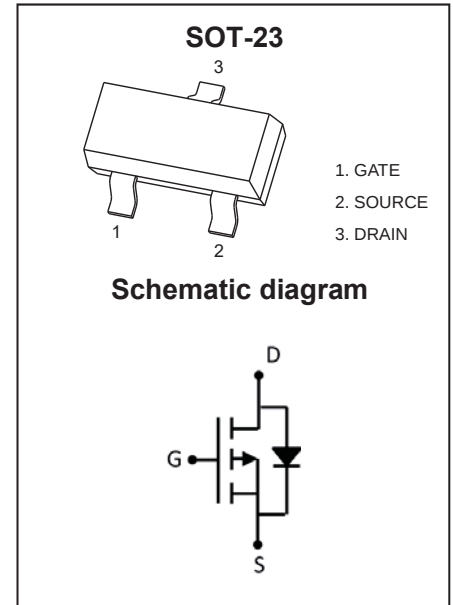
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance

Application

- Load Switch
- PWM Applications

MARKING:



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

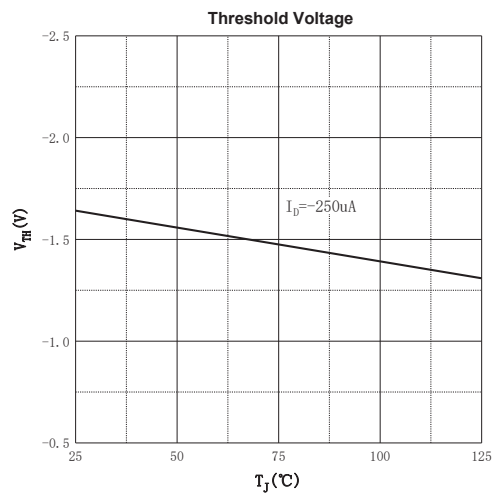
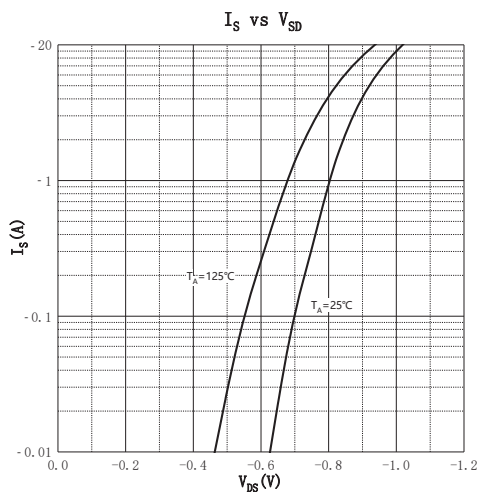
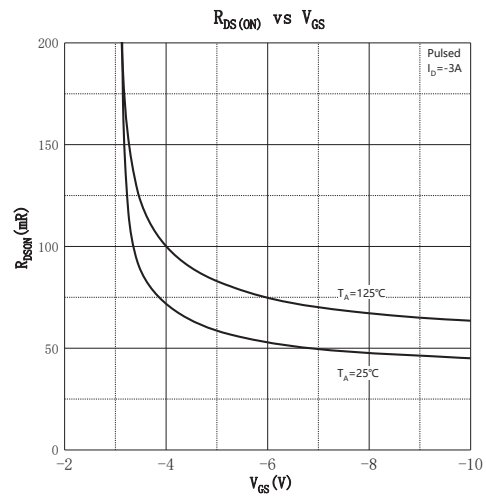
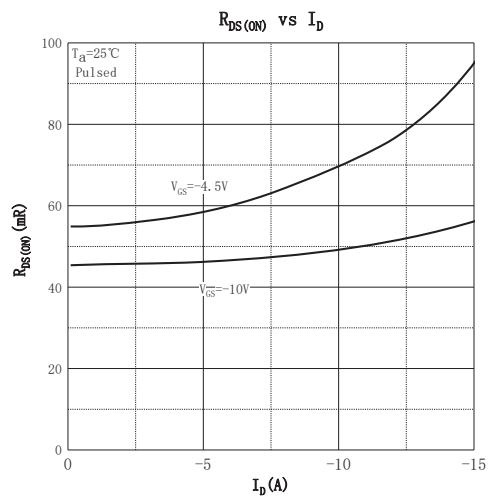
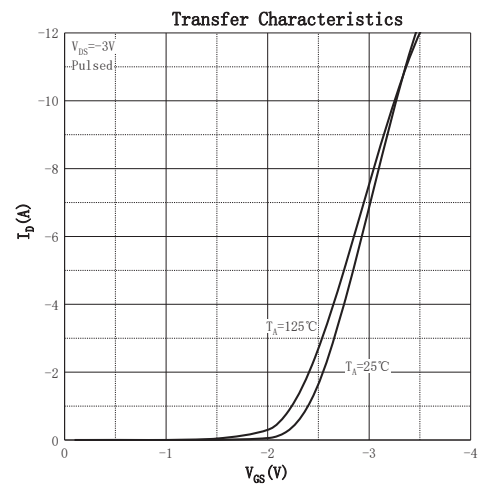
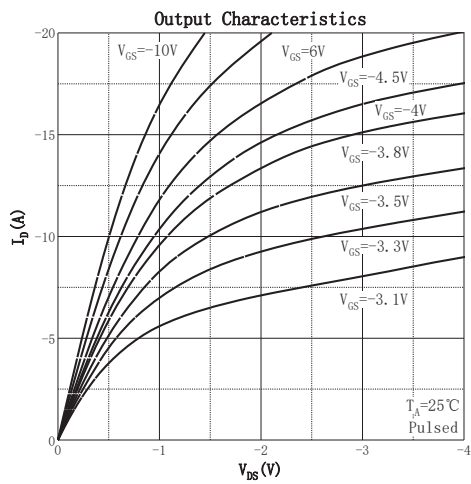
Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	-30	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current ^{1,5}	$T_A = 25^\circ\text{C}$	I_D	-4.1	A
Pulsed Drain Current ²		I_{DM}	-16	A
Power Dissipation ^{4,5}	$T_A = 25^\circ\text{C}$	P_D	1.4	W
Thermal Resistance from Junction to Ambient ⁵		$R_{\theta JA}$	89	$^\circ\text{C/W}$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~ +150	$^\circ\text{C}$

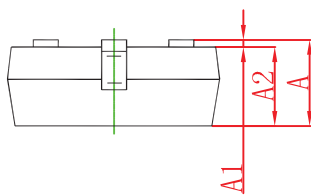
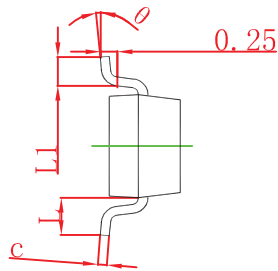
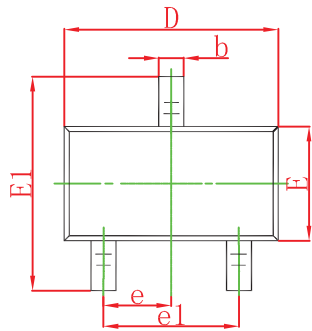
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics ³						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-1.6	-3	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -4.1A$		45	60	m Ω
		$V_{GS} = -4.5V, I_D = -3A$		57	80	
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -4A$	5			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V, f = 1MHz$		572		pF
Output Capacitance	C_{oss}			65		
Reverse Transfer Capacitance	C_{rss}			57		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -15V, V_{GS} = -10V, I_D = -4.1A$		10		nC
Gate-source Charge	Q_{gs}			2		
Gate-drain Charge	Q_{gd}			3.4		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -15V, V_{GS} = -10V,$ $R_L = 3.65\Omega, R_G = 3\Omega$		8		ns
Turn-on Rise Time	t_r			6.2		
Turn-off Delay Ttime	$t_{d(off)}$			25		
Turn-off Fall Time	t_f			10		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = -2A$			1.2	V

Notes :

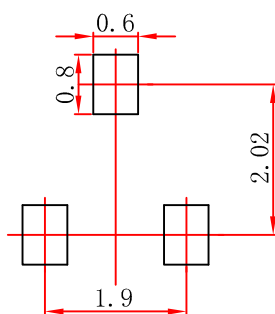
- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.





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: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.