

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	50mΩ@-10V	-4A
	71mΩ@-4.5V	

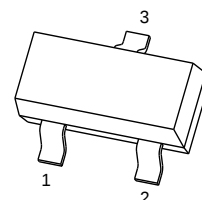
Feature

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

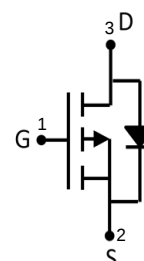
Application

- Load Switch
- DC/DC Converter

MARKING

SOT-23


1. GATE
2. SOURCE
3. DRAIN

Schematic diagram

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 ^{1,4}	$T_A = 25^\circ\text{C}$	I_D	-4	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 Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^\circ\text{C}$

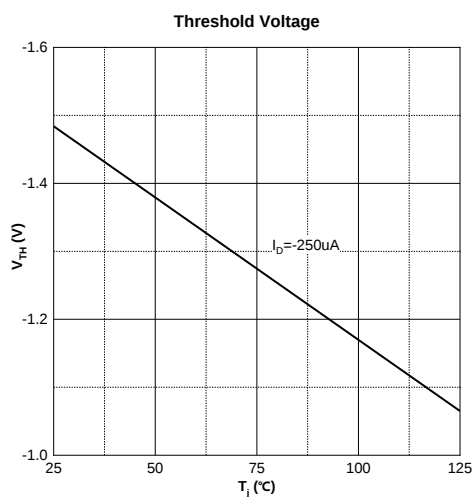
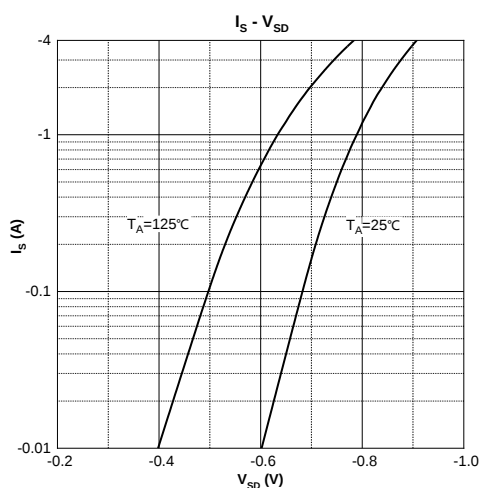
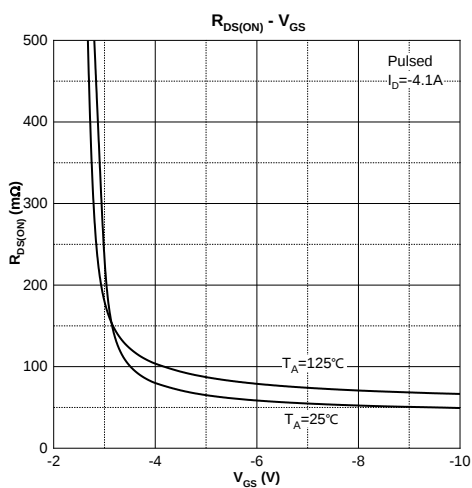
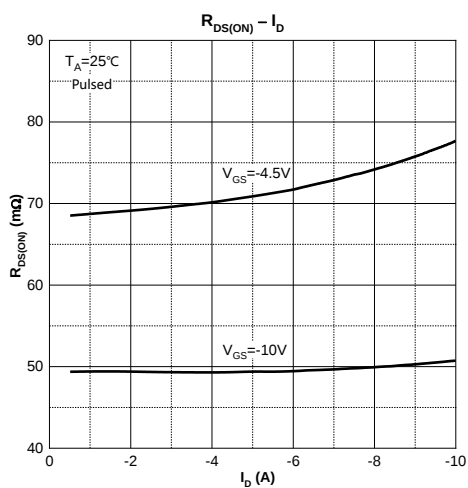
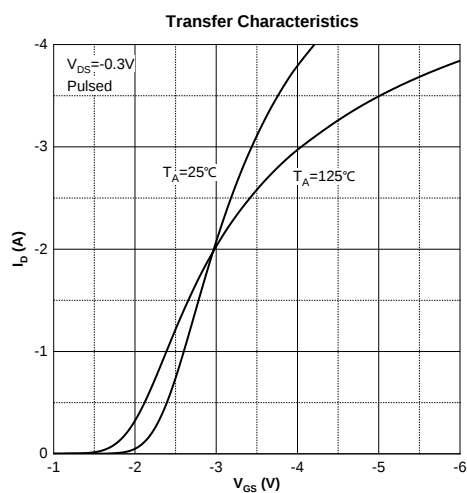
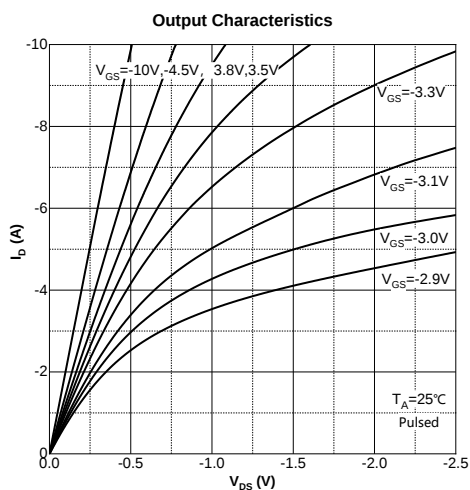
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

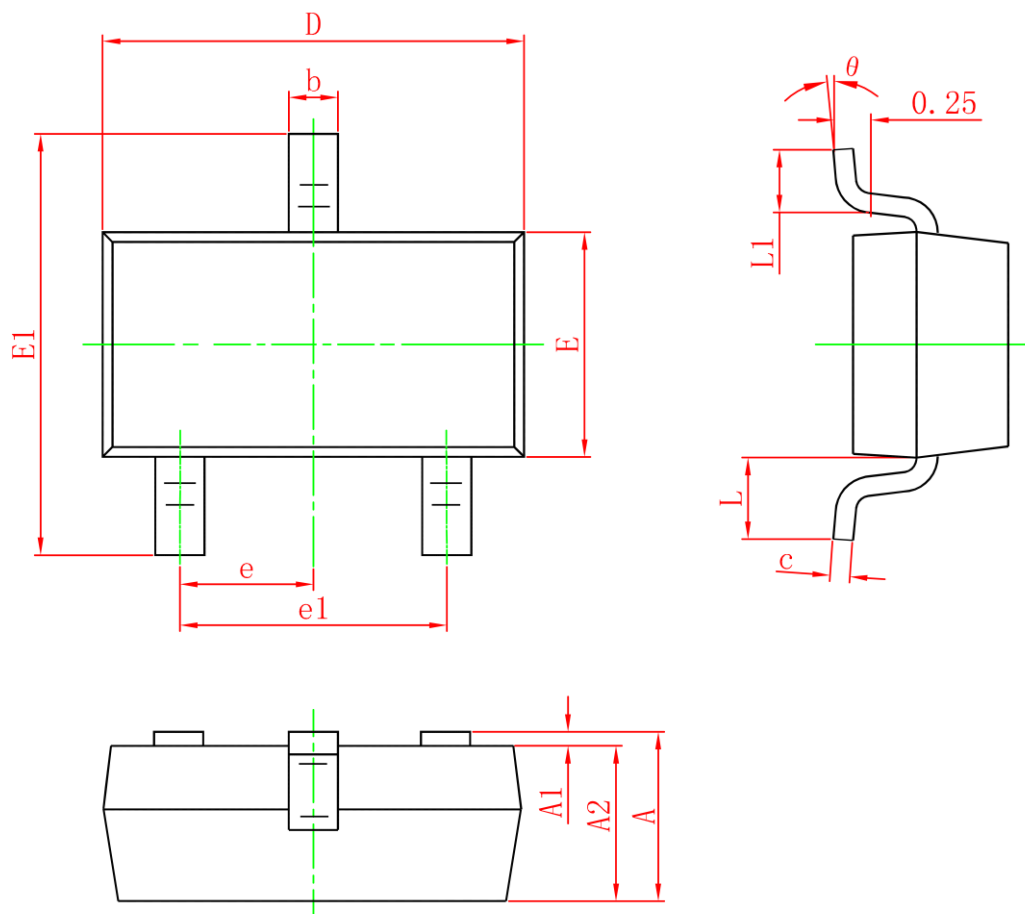
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -24V, V _{GS} = 0V			-1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics ³						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.0	-1.5	-3.0	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -4.1A		50	65	mΩ
		V _{GS} = -4.5V, I _D = -3A		71	107	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz		584		pF
Output Capacitance	C _{oss}			74		
Reverse Transfer Capacitance	C _{rss}			65		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		26.1		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = -15V, V _{GS} = -10V, I _D = -1A		13.6		nC
Gate-source Charge	Q _{gs}			2.3		
Gate-drain Charge	Q _{gd}			2.4		
Turn-on Delay Time	t _{d(on)}	V _{DD} = -15V, V _{GS} = -10V, R _L = -3.65A, R _G = 3Ω		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 = -1A			-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 $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics



SOT-23 Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0	0.100	0	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	1.150	1.500	0.045	0.059
E1	2.250	2.650	0.089	0.104
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°