

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
-50V	1.7Ω@-10V	-0.13A
	1.9Ω@-5V	

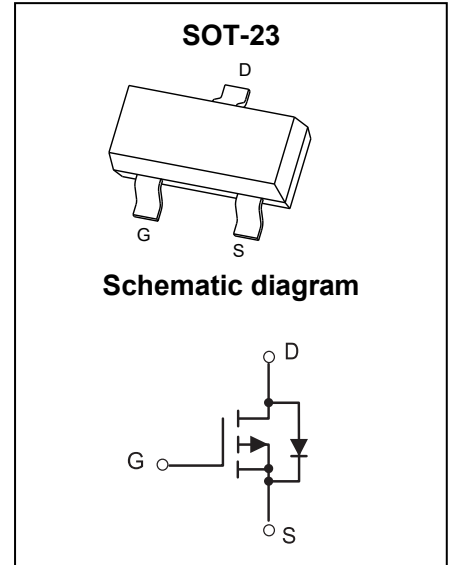
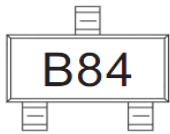
### Feature

- Trench Technology MOSFET
- Low Gate Charge

### Application

- Load Switch for Portable Devices
- DC/DC Converter

### MARKING:



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

Parameter	Symbol	Value	Unit
Drain - Source Voltage	$V_{DS}$	-50	V
Gate - Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current <sup>1</sup>	$I_D$	-0.13	A
Pulsed Drain Current <sup>2</sup>	$I_{DM}$	-1.2	A
Power Dissipation <sup>4</sup>	$P_D$	300	mW
Thermal Resistance from Junction to Ambient <sup>5</sup>	$R_{\theta JA}$	417	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-55~ +150	°C

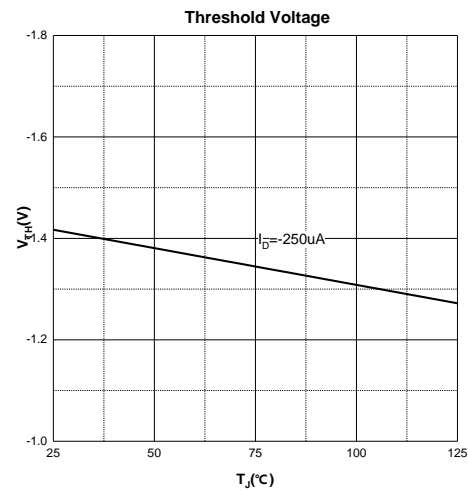
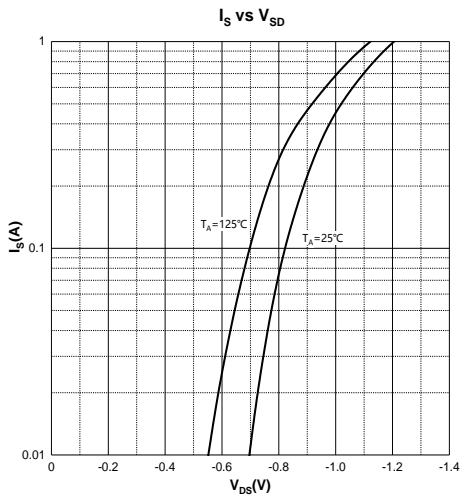
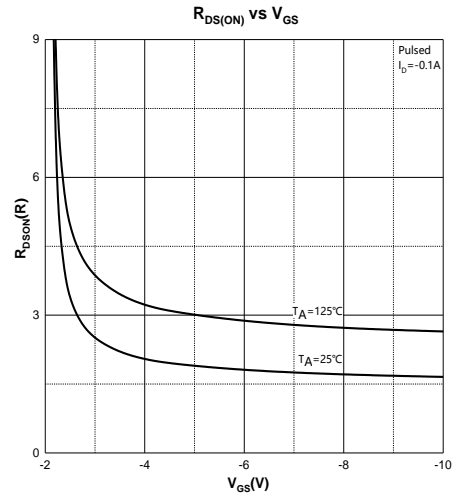
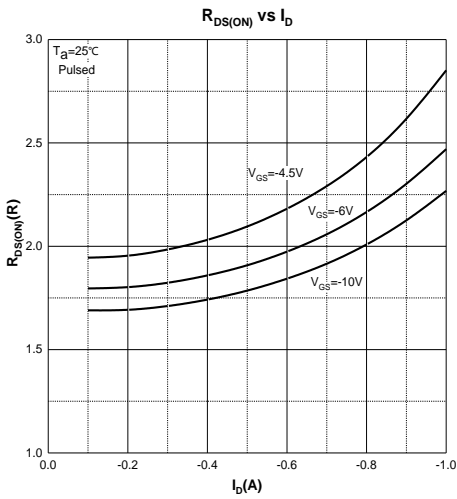
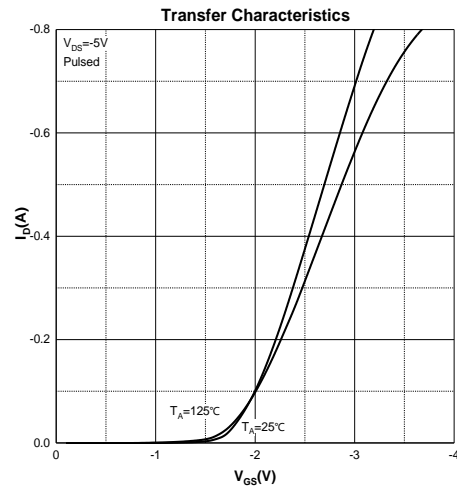
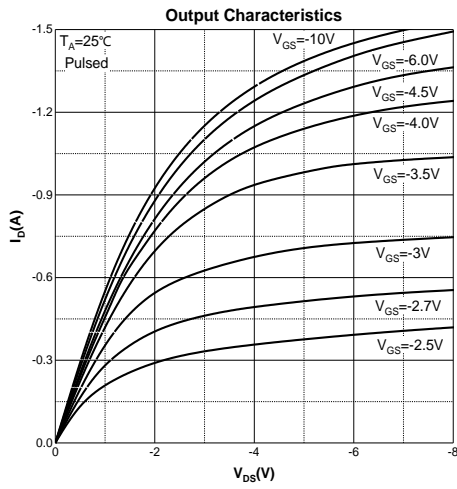
**MOSFET ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°C unless otherwise noted)**

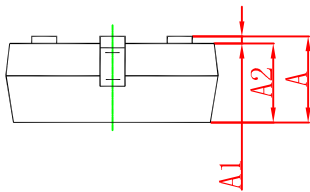
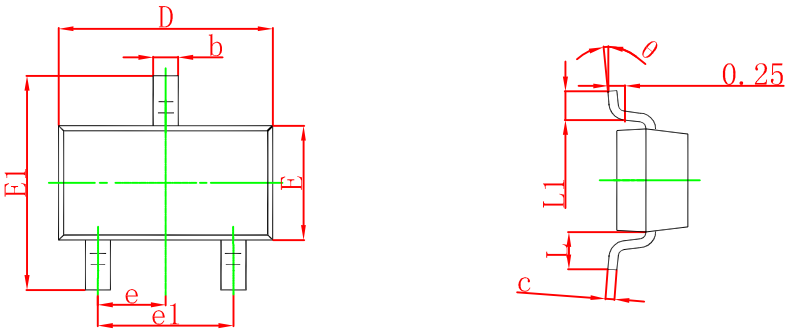
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain – Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-50			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -50V, V <sub>GS</sub> = 0V			-1	μA
Gate – Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±100	nA
<b>On Characteristics<sup>3</sup></b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.9	-1.4	-2.0	V
Drain-source On-resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -0.1A		1.7	5	Ω
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -0.1A		1.9	6	
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -25V, V <sub>GS</sub> = 0V, f = 1MHz		32.9		pF
Output Capacitance	C <sub>oss</sub>			5.48		
Reverse Transfer Capacitance	C <sub>rss</sub>			3.31		
Gate Resistance	R <sub>g</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = 0V, f = 1MHz		73		Ω
<b>Switching Characteristics</b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> = -10V, I <sub>D</sub> = -0.1A		0.62		nC
Gate-source Charge	Q <sub>gs</sub>			0.13		
Gate-drain Charge	Q <sub>gd</sub>			0.11		
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = -30V, V <sub>GS</sub> = -10V, R <sub>L</sub> = 110Ω, R <sub>G</sub> = 50Ω		11		ns
Turn-on Rise Time	t <sub>r</sub>			6		
Turn-off Delay Time	t <sub>d(off)</sub>			19		
Turn-off Fall Time	t <sub>f</sub>			8		
<b>Source - Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = -0.1A			-1.2	V

Notes :

- 1.The maximum current rating is limited by Chip.
- 2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 4.The power dissipation P<sub>D</sub> is limited by T<sub>J(MAX)</sub> = 150°C.
- 5.Device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with T<sub>A</sub> =25°C.

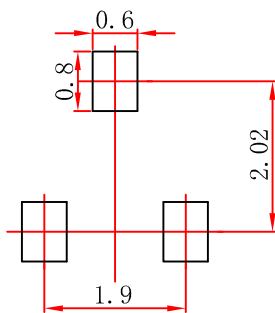
## Typical Characteristics





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.