

FEATURES

- | Energy Efficient
- | Low Threshold Voltage
- | High-speed Switching
- | DC/DC Converter



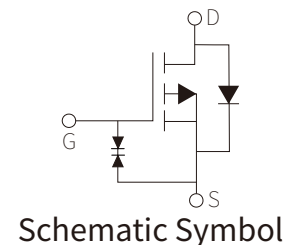
MECHANICAL DATA

- | SOT-23 Small Outline Plastic Package
- | Epoxy UL: 94V-0
- | Mounting Position: Any



APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-60	V
Typical Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-0.13	A
Pulsed Drain Current ($t_p=10\mu s$) ^(note 1)	I_{DM}	-0.52	A
Power Dissipation	P_D	225	mW
Thermal Resistance from Junction to Ambient ^(note 2)	$R_{\theta JA}$	556	°C/W
Junction Temperature	T_J	-55 ~ +150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-60			V
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 2V, V_{DS}=0V$			± 10	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-50V, V_{GS}=0V$			-15	μA
		$V_{DS}=-25V, V_{GS}=0V$			-0.1	μA
Zero Gate Voltage Drain current	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.9	-1.6	-2.0	V
Drain-Source On-Resistance ^(note 3)	$R_{DS(on)}$	$V_{GS}=-5V, I_D=-0.1A$		4	10	Ω
		$V_{GS}=-10V, I_D=-0.1A$		3.5	8	Ω
Forward Transconductance ^(note 1)	g_{FS}	$V_{DS}=-25V, I_D=-0.1A$	50			mS
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-0.34A$			-1.3	V
Dynamic Characteristics ^(note 4)						
Input Capacitance	C_{iss}	$V_{DS}=-5V, V_{GS}=0V, f=1MHz$		30		pF
Output Capacitance	C_{oss}			10		pF
Reverse Transfer Capacitance	C_{rss}			5		pF
Switching Characteristics ^(note 3,4)						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-15V, I_D=-0.25A$ $R_L=50\Omega$		2.5		ns
Turn-on Rise Time	t_r			1		ns
Turn-Off Delay Time	$t_{d(off)}$			16		ns
Turn-off Fall Time	t_f			8		ns

Notes:

- 1). Repetitive rating: Pulse width limited by junction temperature.
- 2). Surface mounted on FR4 board, $t \leq 10s$
- 3). Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
- 4). Guaranteed by design, not subject to producing.

PARAMETER CHARACTERISTIC CURVE

Figure1: Output Characteristics

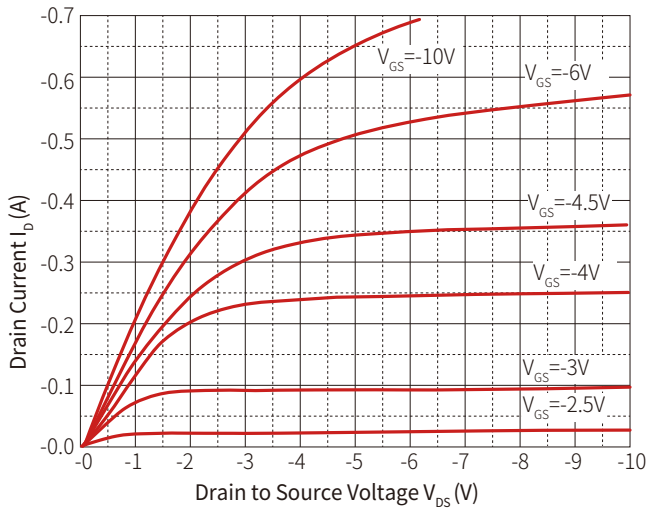


Figure2: Transfer Characteristics

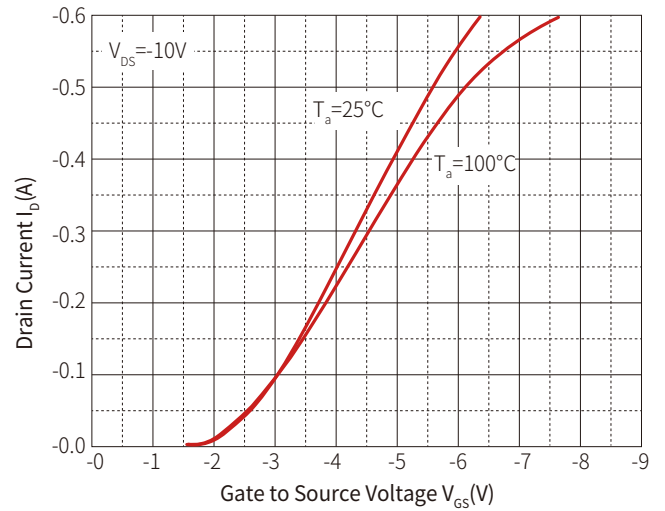


Figure3: $R_{DS(ON)} - I_D$

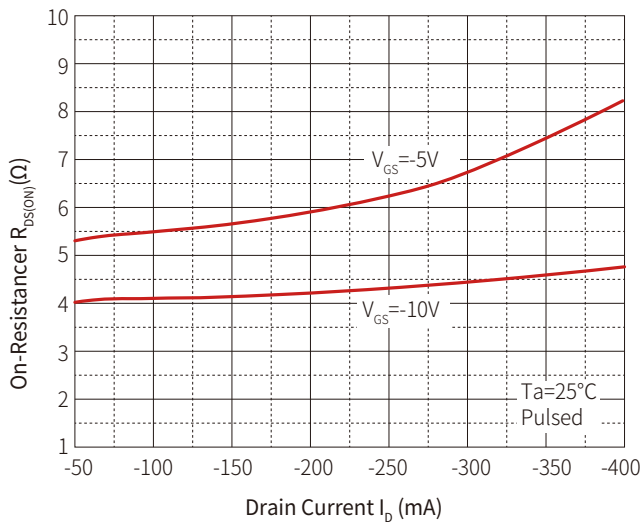


Figure 4: $R_{DS(ON)} - V_{GS}$

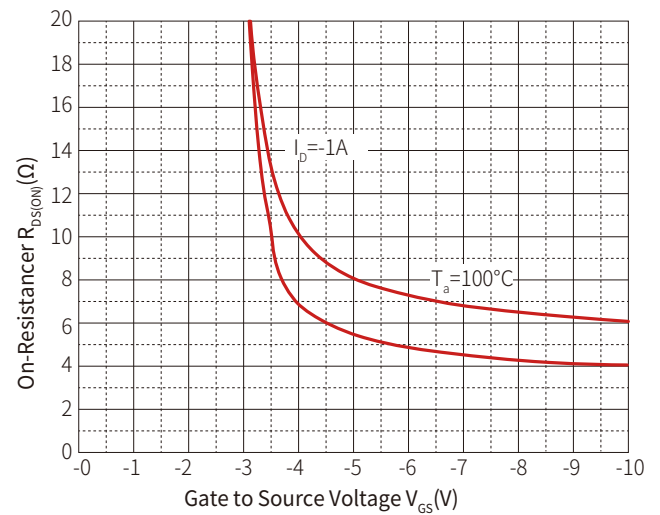


Figure 5: I_s — V_{sd}

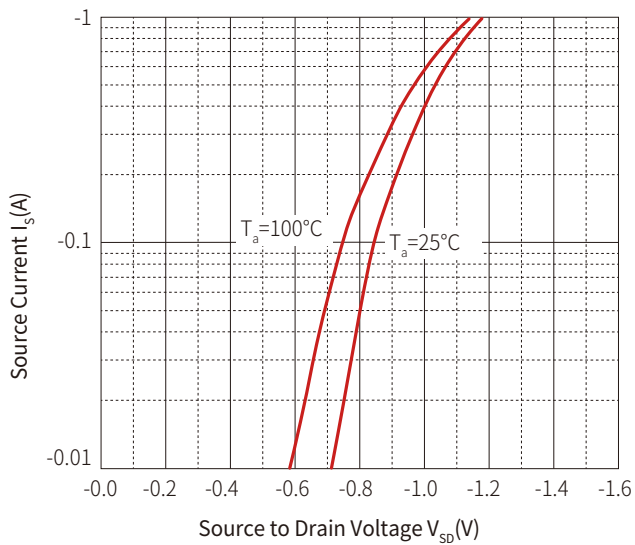
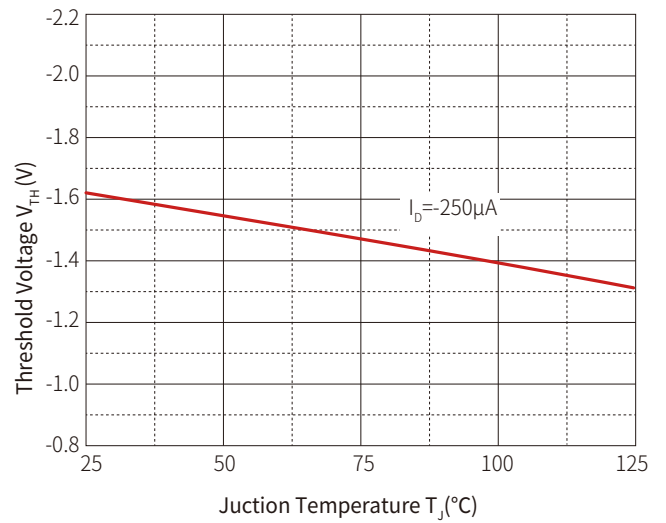
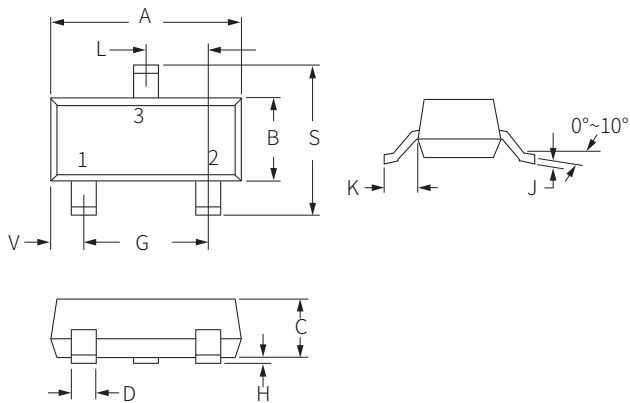


Figure 6: Threshold Voltage

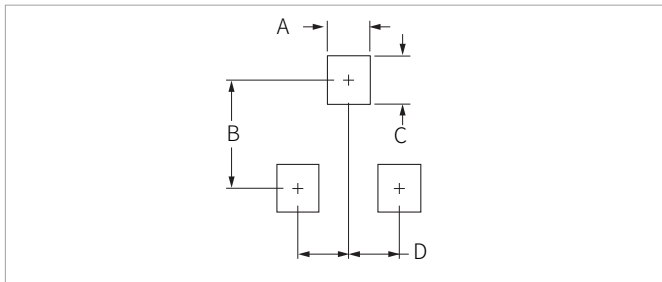


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.37	0.50	0.015	0.020
G	1.75	2.05	0.069	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.65	0.083	0.104
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min	Max	Min	Max
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
BSS84KS	SOT-23	3000PCS	7"

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