

### General Description

It is mainly suitable for use as a load switch in battery powered applications.

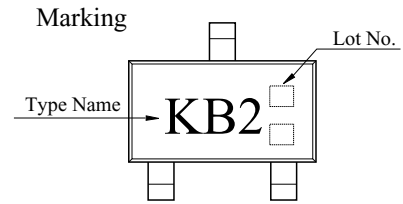
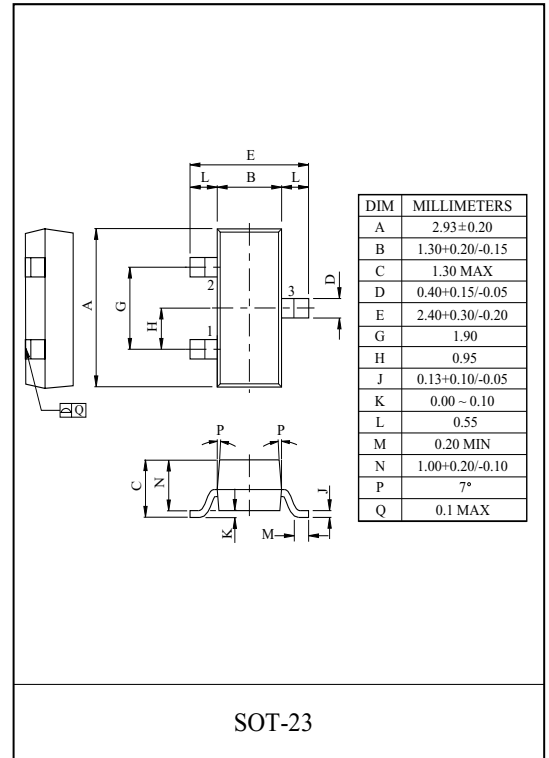
### FEATURES

- $V_{DSS} = -20V$ ,  $I_D = -2.4A$ .
- Drain to Source on-state Resistance.
  - :  $R_{DS(ON)} = 100m\ \Omega$  (Max.) @  $V_{GS} = -4.5V$ .
  - :  $R_{DS(ON)} = 175m\ \Omega$  (Max.) @  $V_{GS} = -2.5V$ .

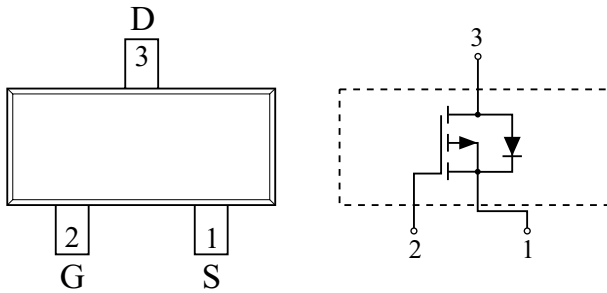
### MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain to Source Voltage		$V_{DSS}$	-20	V
Gate to Source Voltage		$V_{GSS}$	$\pm 12$	V
Drain Current	DC@Ta=25 (Note1)	$I_D$	-2.4	A
	Pulsed (Note1)	$I_{DP}$	-9	A
Drain Power Dissipation	Ta=25 (Note1)	$P_D$	1.2	W
	Ta=100 (Note1)		0.6	
Maximum Junction Temperature		$T_j$	150	
Storage Temperature Range		$T_{stg}$	-55 ~ 150	
Thermal Resistance, Junction to Ambient (Note1)		$R_{thJA}$	100	/W

Note1) Surface Mounted on 1" x 1" FR4 Board, t = 5sec.



### PIN CONNECTION (TOP VIEW)



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## ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
<b>Static</b>						
Drain to Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250 μA	-20	-	-	V
Drain Cut-off Current	I <sub>DSS</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-20V	-	-	-1	μA
		V <sub>GS</sub> =0V, V <sub>DS</sub> =-16V, T <sub>j</sub> =70	-	-	-5	
Gate to Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ± 12V, V <sub>DS</sub> =0V	-	-	± 100	nA
Gate to Source Threshold Voltage	V <sub>th</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250 μA	-0.6	-	-1.5	V
Drain to Source On Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.4A (Note2)	-	83	100	m
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-1.8A (Note2)	-	145	175	
On State Drain Current	I <sub>D(ON)</sub>	V <sub>GS</sub> =-4.5V, V <sub>DS</sub> =-5V (Note2)	-9	-	-	A
Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-2.4A (Note2)	-	4	-	S
<b>Dynamic</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-15V, f=1MHz, V <sub>GS</sub> =0V	-	292	-	pF
Output Capacitance	C <sub>oss</sub>		-	60	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	33	-	
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-15V, I <sub>D</sub> =-2.4A, V <sub>GS</sub> =-4.5V (Note2)	-	4	-	nC
Gate to Source Charge	Q <sub>gs</sub>		-	0.6	-	
Gate to Drain Charge	Q <sub>gd</sub>		-	1.4	-	
Turn-on Delay time	t <sub>d(on)</sub>	V <sub>DD</sub> =-15V, V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.4A, R <sub>G</sub> =6 (Note2)	-	6.5	-	ns
Turn-on Rise time	t <sub>r</sub>		-	13	-	
Turn-off Delay time	t <sub>d(off)</sub>		-	15	-	
Turn-off Fall time	t <sub>f</sub>		-	20	-	
<b>Source-Drain Diode Ratings</b>						
Continuous Source Current	I <sub>S</sub>	-	-	-	-2.4	A
Pulsed Source Current	I <sub>SP</sub>	- (Note2)	-	-	-9	A
Source to Drain Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =-2.4A (Note2)	-	-	-1.3	V
Note2) Pulse Test : Pulse width <300μs , Duty cycle < 2%						

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Fig1.  $I_D - V_{DS}$

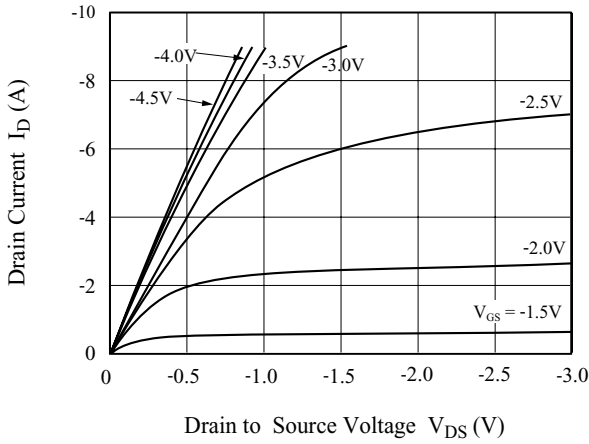


Fig2.  $R_{DS(ON)} - I_D$

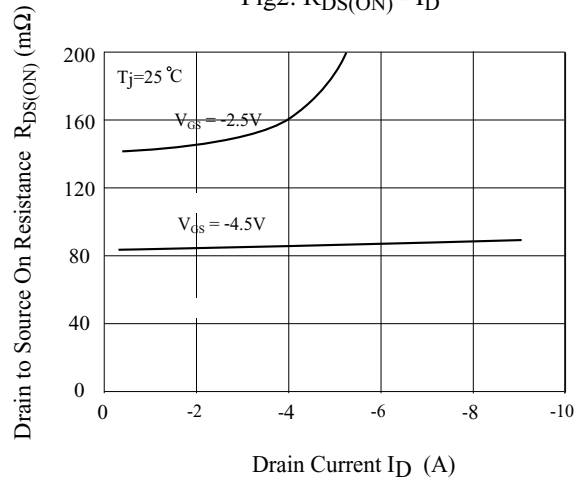


Fig3.  $I_D - V_{GS}$

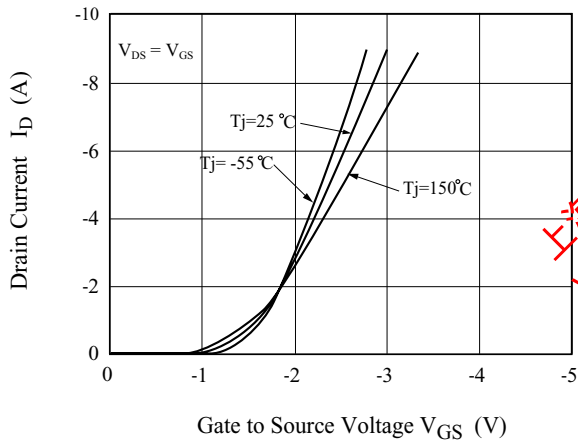


Fig4.  $R_{DS(ON)} - T_j$

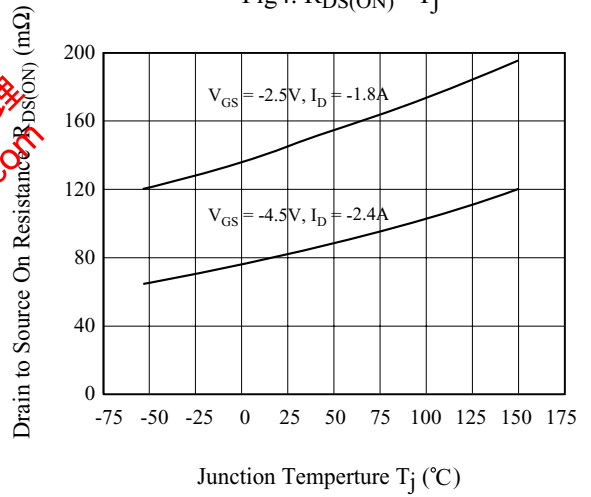


Fig5.  $V_{th} - T_j$

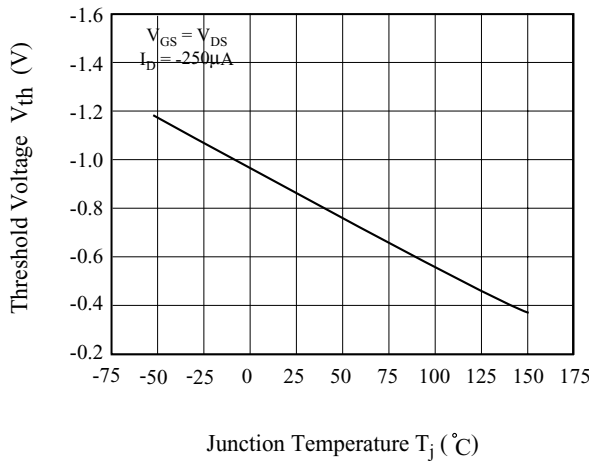
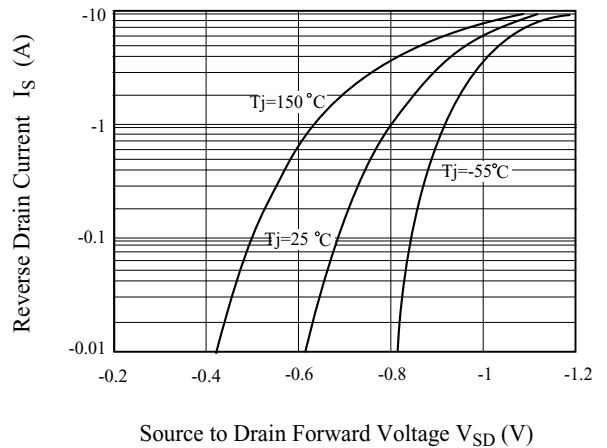


Fig6.  $I_S - V_{SD}$



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Fig7.  $R_{DS(ON)} - V_{GS}$

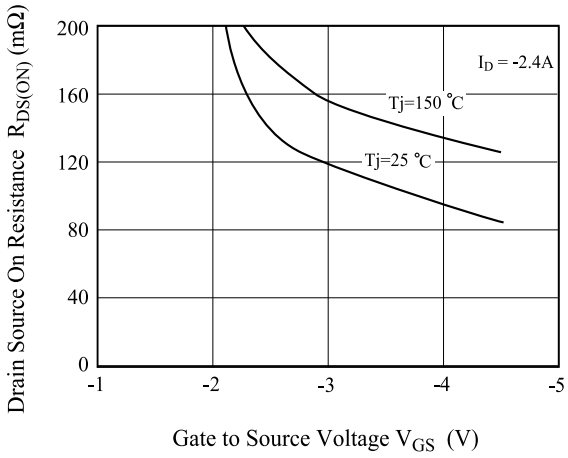


Fig8.  $C - V_{DS}$

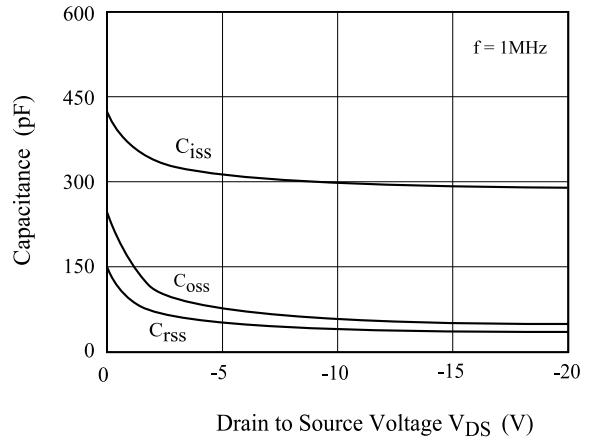


Fig7.  $Q_g - V_{GS}$

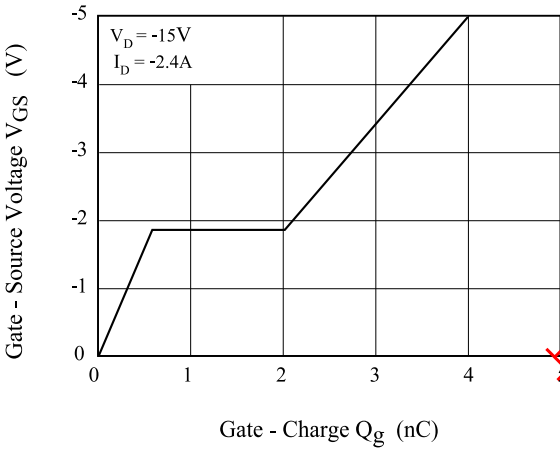


Fig9. Safe Operation Area

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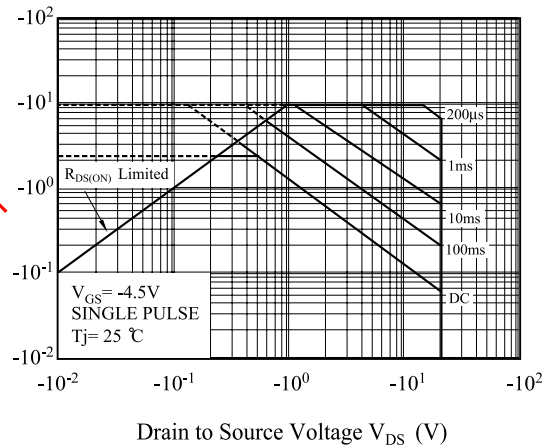


Fig10. Transient Thermal Response Curve

