

General Description

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

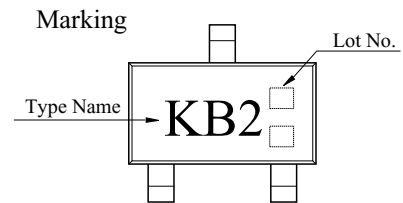
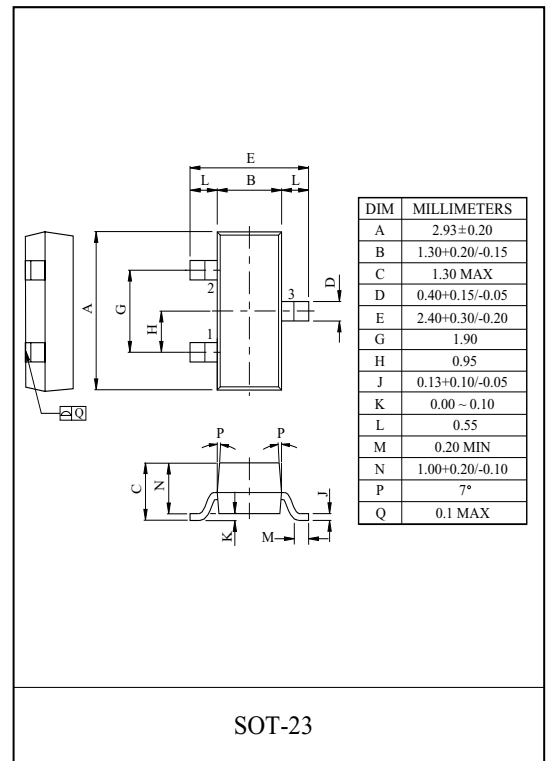
FEATURES

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

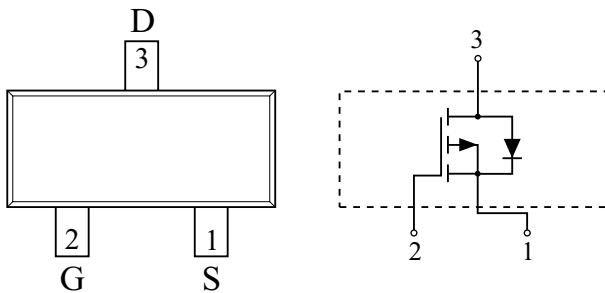
MAXIMUM RATING (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain to Source Voltage		V_{DSS}	-20	V
Gate to Source Voltage		V_{GSS}	± 12	V
Drain Current	DC@Ta=25°C (Note1)	I_D	-2.4	A
	Pulsed (Note1)	I_{DP}	-9	
Drain Power Dissipation	Ta=25°C (Note1)	P_D	1.25	W
	Ta=100°C (Note1)		0.6	
Maximum Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55 ~ 150	°C
Thermal Resistance, Junction to Ambient (Note1)		R_{thJA}	100	°C/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
Static						
Drain to Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250μA	-20	-	-	V
Drain Cut-off Current	I _{DSS}	V _{GS} =0V, V _{DS} =-20V	-	-	-1	μA
		V _{GS} =0V, V _{DS} =-16V, T _j =70 °C	-	-	-5	
Gate to Source Leakage Current	I _{GSS}	V _{GS} =± 12V, V _{DS} =0V	-	-	± 100	nA
Gate to Source Threshold Voltage	V _{th}	V _{DS} =V _{GS} , I _D =-250μA	-0.6	-	-1.5	V
Drain to Source On Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-2.4A (Note2)	-	83	100	mΩ
		V _{GS} =-2.5V, I _D =-1.8A (Note2)	-	145	175	
On State Drain Current	I _{D(ON)}	V _{GS} =-4.5V, V _{DS} =-5V (Note2)	-9	-	-	A
Forward Transconductance	g _{fs}	V _{DS} =-5V, I _D =-2.4A (Note2)	-	4	-	S
Dynamic						
Input Capacitance	C _{iss}	V _{DS} =-15V, f=1MHz, V _{GS} =0V	-	292	-	pF
Output Capacitance	C _{oss}		-	60	-	
Reverse Transfer Capacitance	C _{rss}		-	33	-	
Total Gate Charge	Q _g	V _{DS} =-15V, I _D =-2.4A, V _{GS} =-4.5V (Note2)	-	4	-	nC
Gate to Source Charge	Q _{gs}		-	0.6	-	
Gate to Drain Charge	Q _{gd}		-	1.4	-	
Turn-on Delay time	t _{d(on)}	V _{DD} =-15V, V _{GS} =-4.5V, I _D =-2.4A, R _G =6Ω (Note2)	-	6.5	-	ns
Turn-on Rise time	t _r		-	13	-	
Turn-off Delay time	t _{d(off)}		-	15	-	
Turn-off Fall time	t _f		-	20	-	
Source-Drain Diode Ratings						
Continuous Source Current	I _S	-	-	-	-2.4	A
Pulsed Source Current	I _{SP}	- (Note2)	-	-	-9	A
Source to Drain Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-2.4A (Note2)	-	-	-1.3	V
Note2) Pulse Test : Pulse width <300μs , Duty cycle < 2%						

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Fig1. $I_D - V_{DS}$

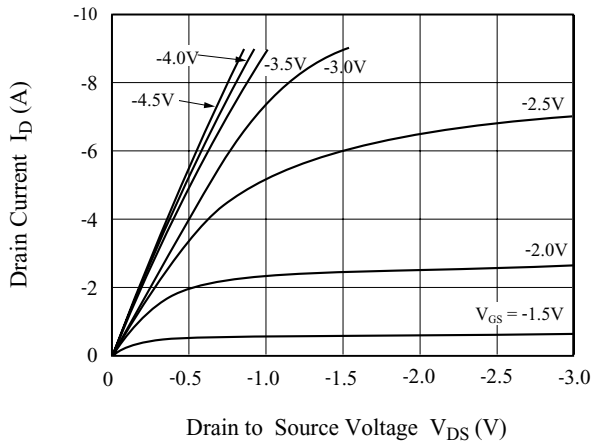


Fig2. $R_{DS(ON)} - I_D$

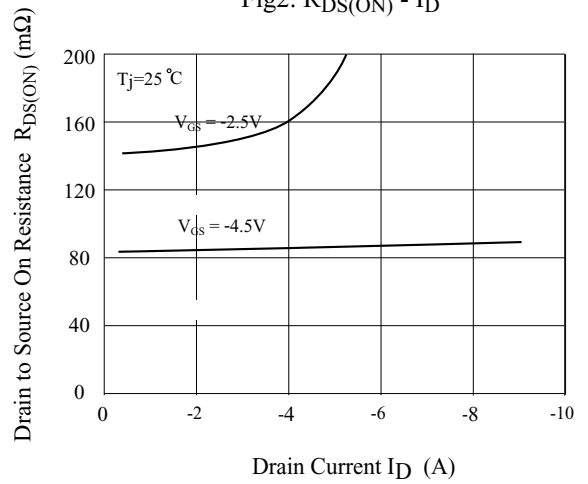


Fig3. $I_D - V_{GS}$

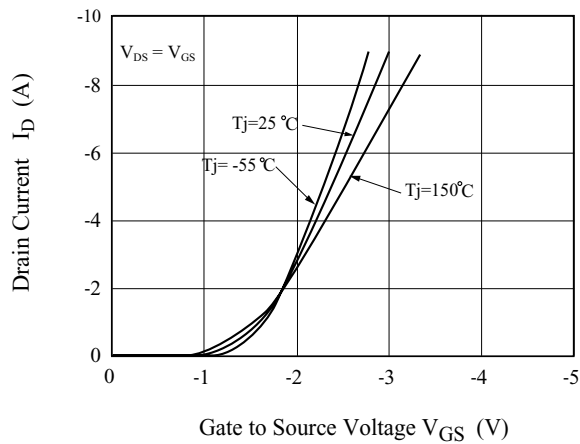


Fig4. $R_{DS(ON)} - T_j$

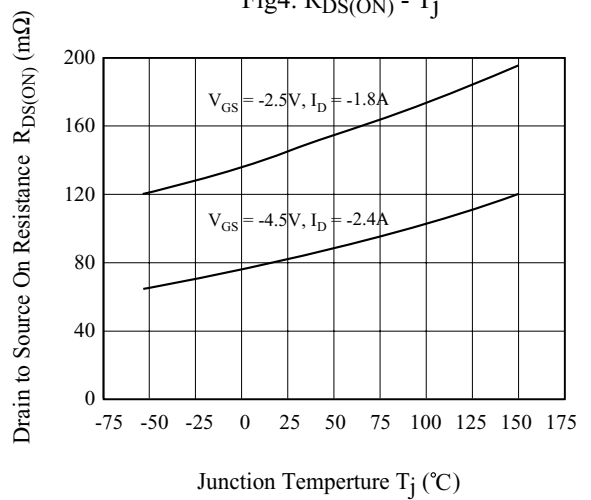


Fig5. $V_{th} - T_j$

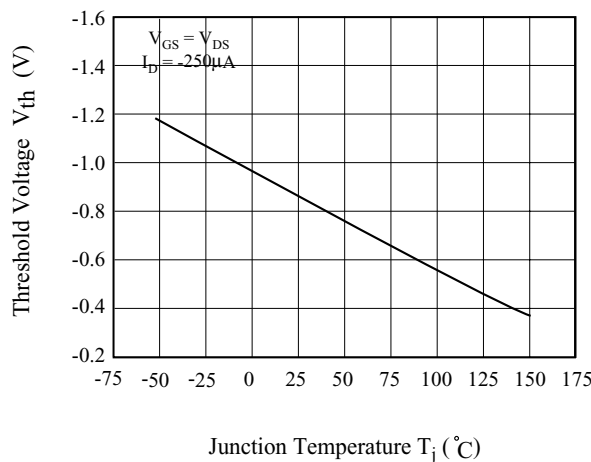
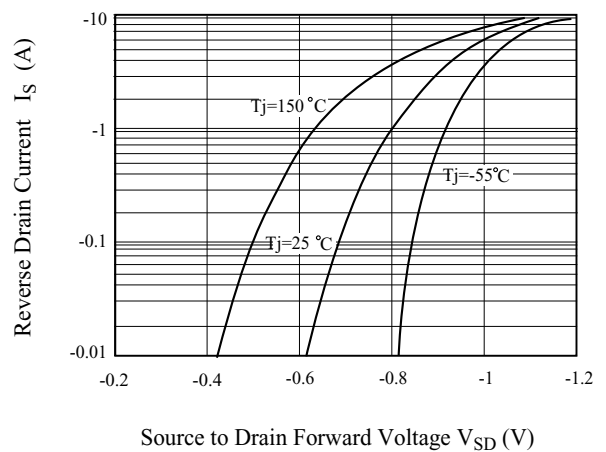


Fig6. $I_S - V_{SD}$



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

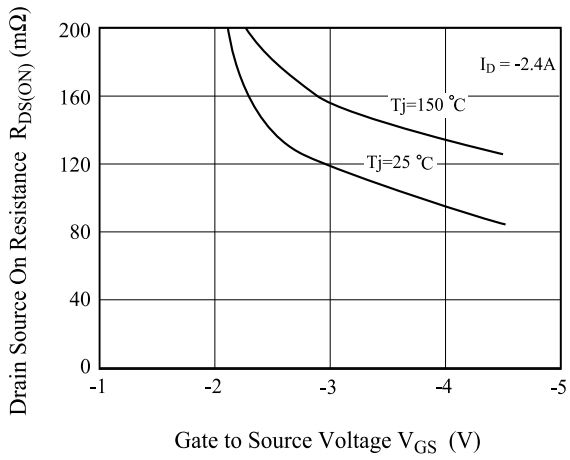


Fig7. $Q_g - V_{GS}$

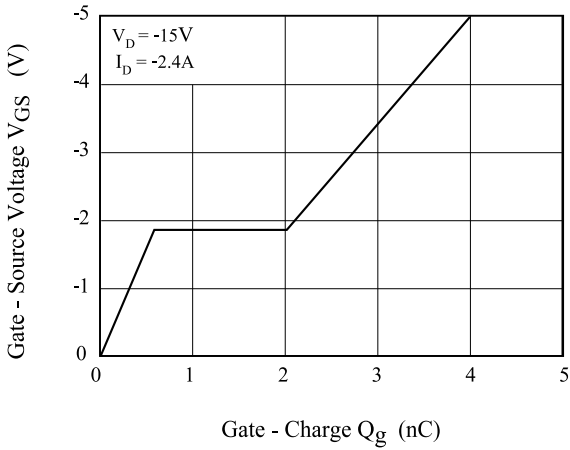


Fig8. $C - V_{DS}$

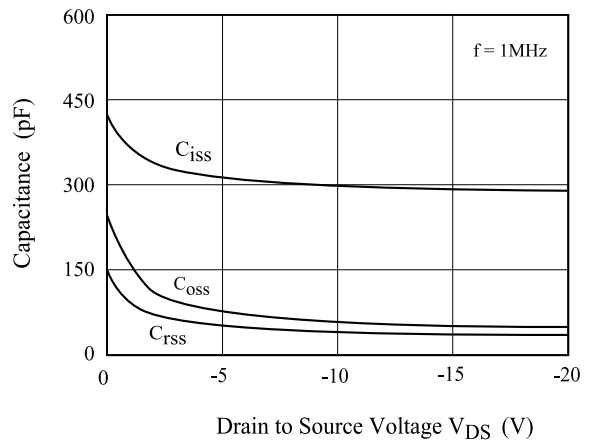


Fig9. Safe Operation Area

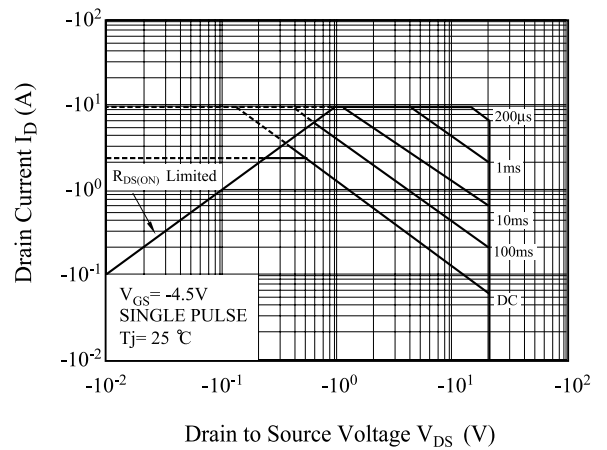


Fig10. Transient Thermal Response Curve

