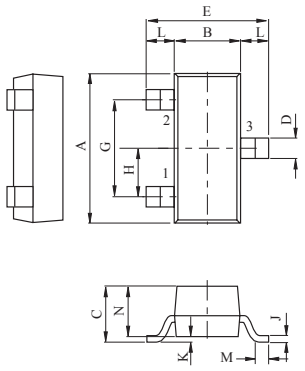
General Description

It s 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.
  : $R_{DS(ON)}$=100mΩ (Max.) @ V_{GS}=-4.5V.
  : $R_{DS(ON)}$=175mΩ (Max.) @ V_{GS}=-2.5V.



Unit : mm

DIM	MILLIMETERS
A	2.93 ± 0.20
B	1.30+0.20/-0.15
C	1.0+0.3/-0.1
D	0.40+0.15/-0.05
E	2.40+0.30/-0.20
G	1.90 ± 0.10
H	0.95 ± 0.10
J	0.13+0.10/-0.05
K	0.00 ~ 0.10
L	0.55 ± 0.10
M	0.20 MIN
N	1.00+0.20/-0.10

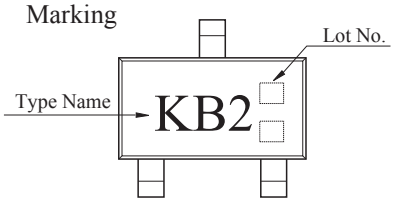
SOT-23

MAXIMUM RATING (Ta=25℃)

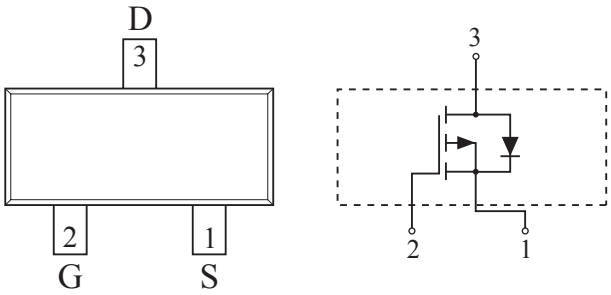
CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain to Source Voltage		V_{DSS}	-20	V
Gate to Source Voltage		V_{GSS}	±12	V
Drain Current	DC@Ta=25°C (Note1)	I_D	-2.4	A
	Pulsed (Note1)	I_{DP}	-9	
Drain Power Dissipation	Ta=25°C (Note1)	P_D	1.25	W
	Ta=100°C (Note1)		0.6	
Maximum Junction Temperature		T_j	150	°C
Storage 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.

Marking



PIN CONNECTION (TOP VIEW)



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, Tj=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 SourceSource 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%						

Fig1. I_D - V_{DS}

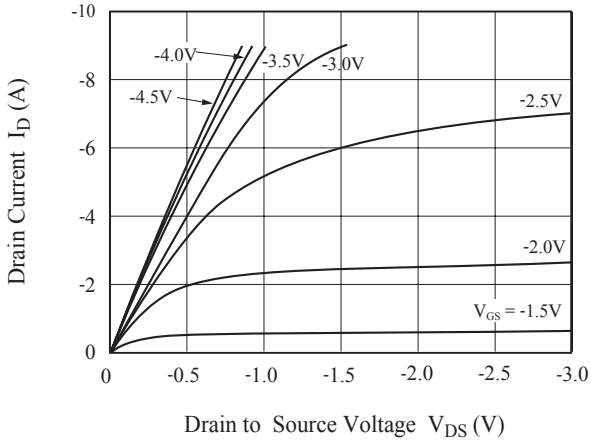


Fig2. $R_{DS(ON)}$ - I_D

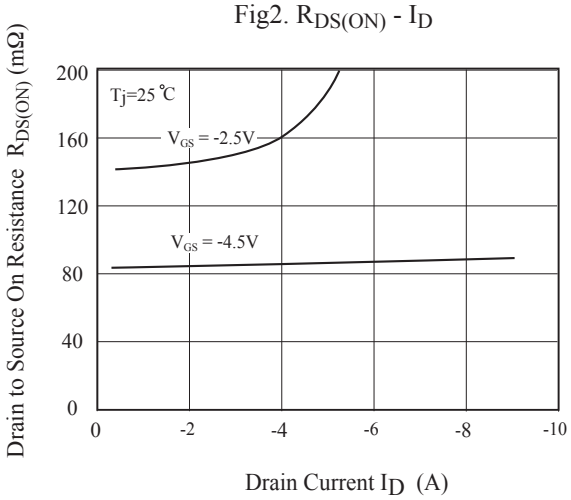


Fig3. I_D - V_{GS}

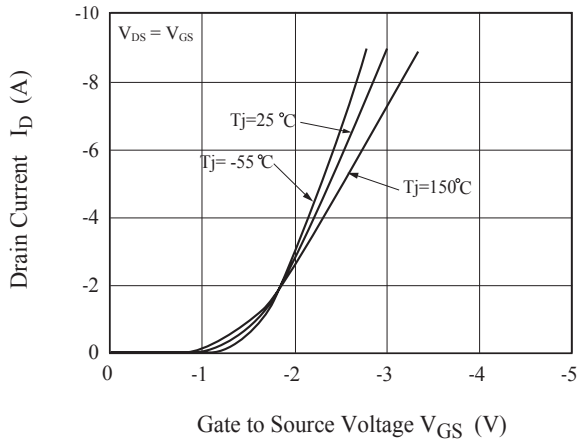


Fig4. $R_{DS(ON)}$ - T_j

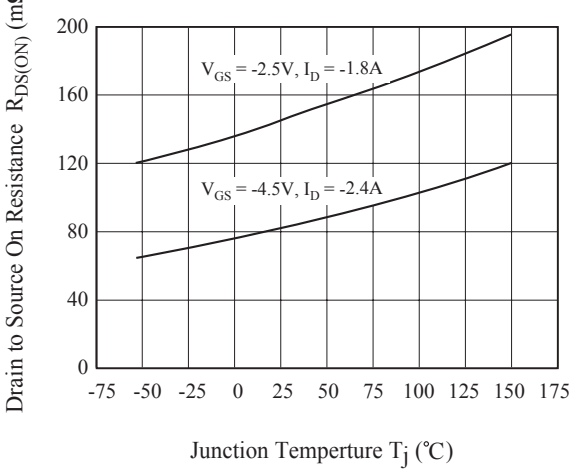


Fig5. V_{th} - T_j

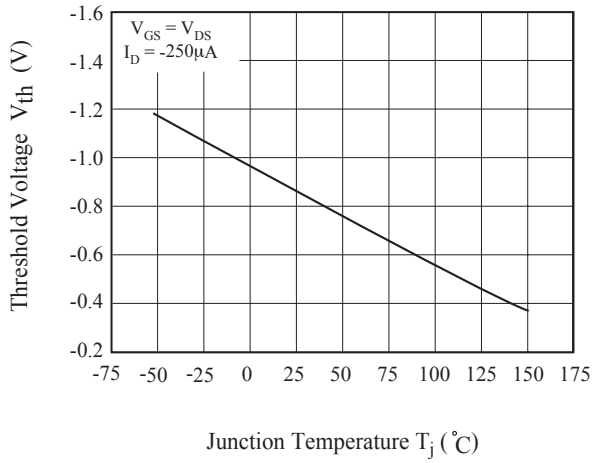


Fig6. I_S - V_{SD}

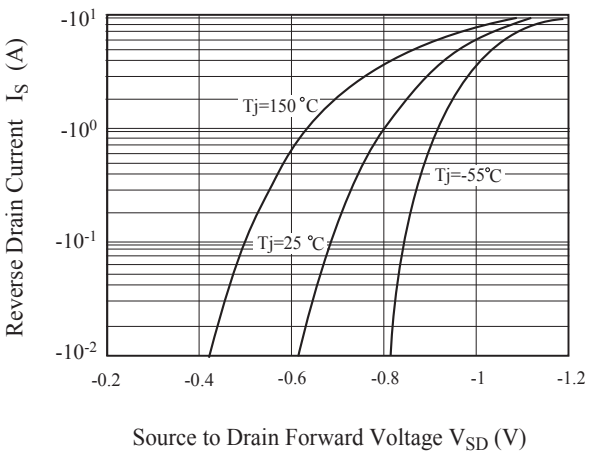


Fig7. $R_{DS(ON)}$ - V_{GS}

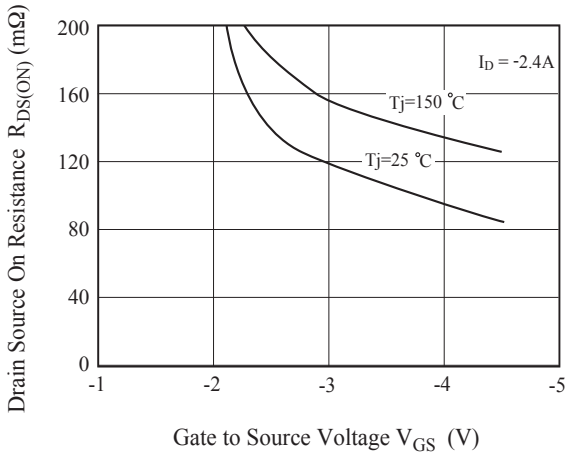


Fig8. C - V_{DS}

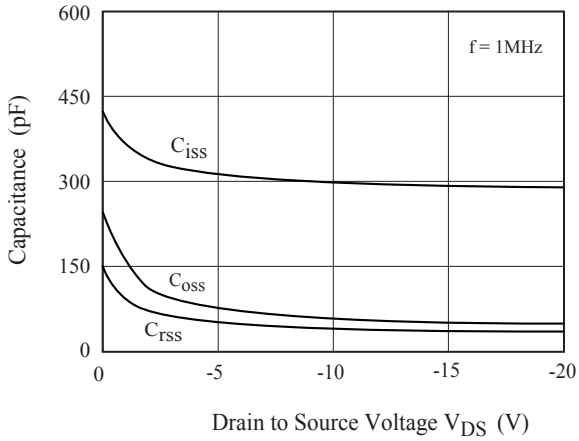


Fig7. Q_g - V_{GS}

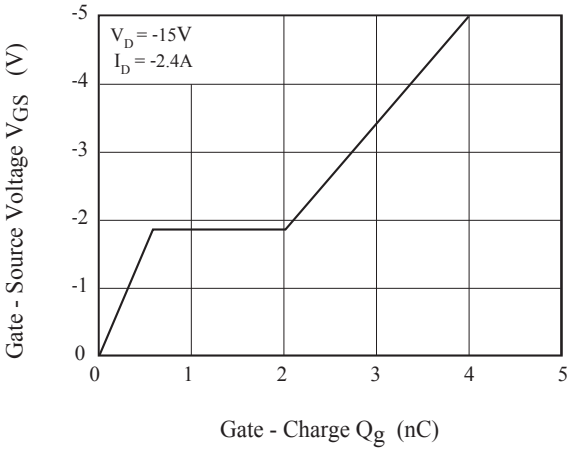


Fig9. Safe Operation Area

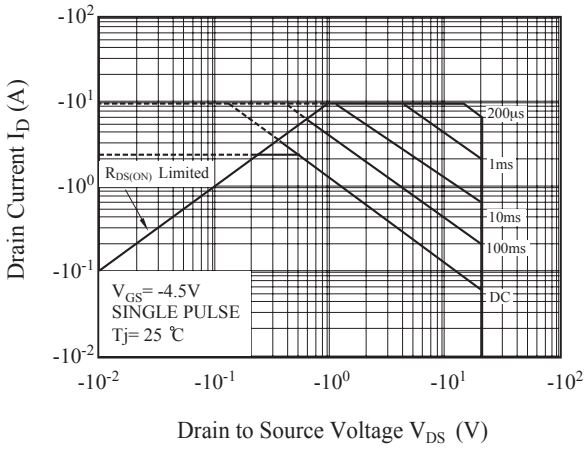


Fig10. Transient Thermal Response Curve