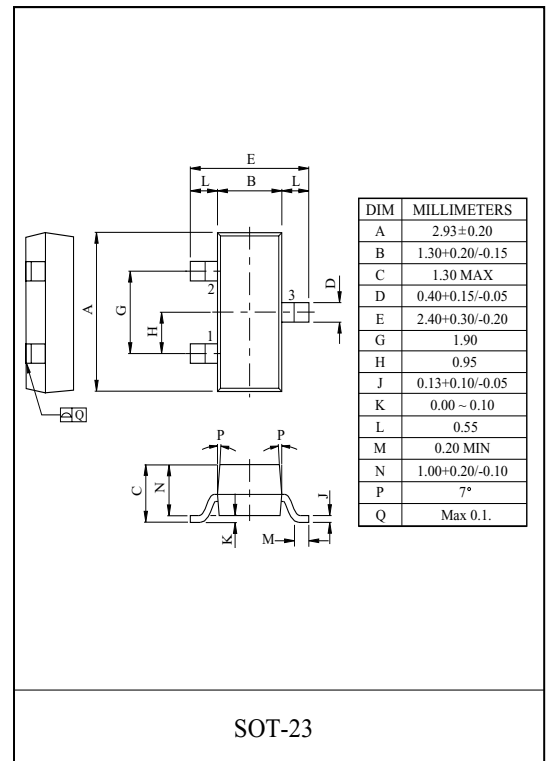


#### General Description

It is mainly suitable for use as a load switch.

#### FEATURES

- $V_{DSS} = -20V$ ,  $I_D = -3.7A$
- Drain to Source on-state Resistance  
 $R_{DS(ON)} = 76m\Omega$  (Max.) @  $V_{GS} = -4.5V$   
 $R_{DS(ON)} = 112m\Omega$  (Max.) @  $V_{GS} = -2.5V$

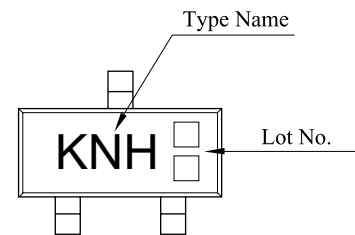


#### MAXIMUM RATING (Ta=25°C)

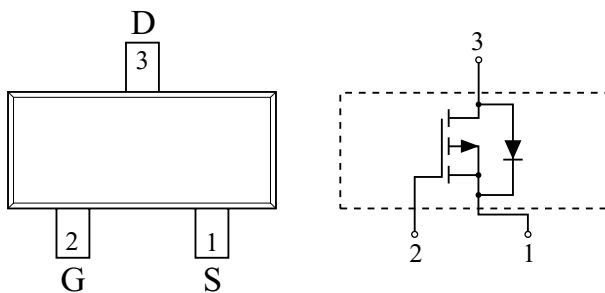
CHARACTERISTIC		SYMBOL	P-Ch	UNIT
Drain to Source Voltage		$V_{DSS}$	-20	V
Gate to Source Voltage		$V_{GSS}$	± 12	V
Drain Current	DC@Ta=25°C (Note1)	$I_D$	-3.7	A
	Pulsed (Note1)	$I_{DP}$	-16	
Drain to Source Diode Forward Current		$I_S$	-16	A
Drain Power Dissipation	Ta=25°C (Note1)	$P_D$	1.25	W
	Ta=100°C (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"×1" FR4 Board, t≤5sec.

#### Marking



#### 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> =-250μA	-20	-	-	V
Drain Cut-off Current	I <sub>DSS</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-20V	-	-	-1	μA
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> =-250μA	-0.55	-	-1.5	V
Drain to Source On Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.8A (Note2)	-	65	76	mΩ
		V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-2.3A (Note2)	-	90	112	
<b>Dynamic</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, f=1MHz, V <sub>GS</sub> =0V	-	443	-	pF
Output Capacitance	C <sub>oss</sub>		-	92	-	
Reverse Transfer Capacitance	C <sub>rss</sub>		-	51	-	
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-2.8A, V <sub>GS</sub> =-4.5V (Note2)	-	4.37	-	nC
Gate to Source Charge	Q <sub>gs</sub>		-	0.54	-	
Gate to Drain Charge	Q <sub>gd</sub>		-	1.54	-	
Turn-on Delay time	t <sub>d(on)</sub>	V <sub>DD</sub> =-10V, V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.8A, R <sub>G</sub> =6Ω (Note2)	-	6.2	-	ns
Turn-on Rise time	t <sub>r</sub>		-	18	-	
Turn-off Delay time	t <sub>d(off)</sub>		-	50	-	
Turn-off Fall time	t <sub>f</sub>		-	33	-	
<b>Source to Drain Diode Ratings</b>						
Source to Drain Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =-1.0A (Note2)	-	-0.8	-1.2	V
Note2) Pulse Test : Pulse width <300μs , Duty cycle < 2%						

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Fig1.  $I_D - V_{DS}$

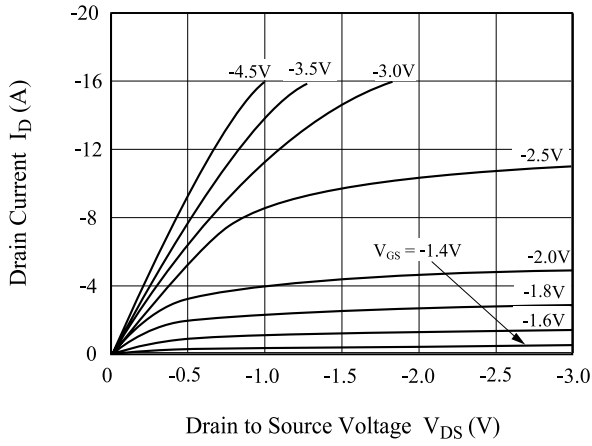


Fig2.  $R_{DS(ON)} - I_D$

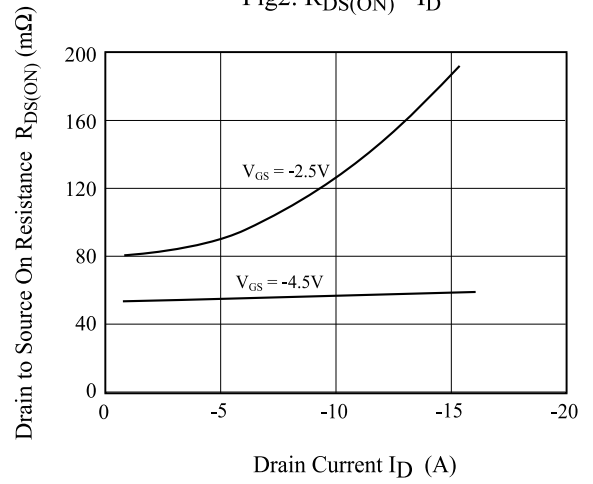


Fig3.  $I_D - V_{GS}$

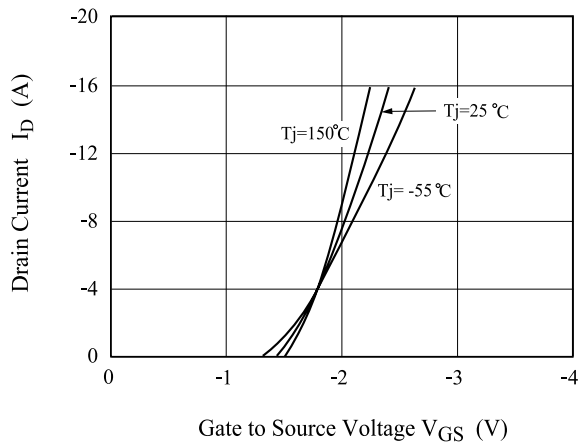


Fig4.  $R_{DS(ON)} - T_j$

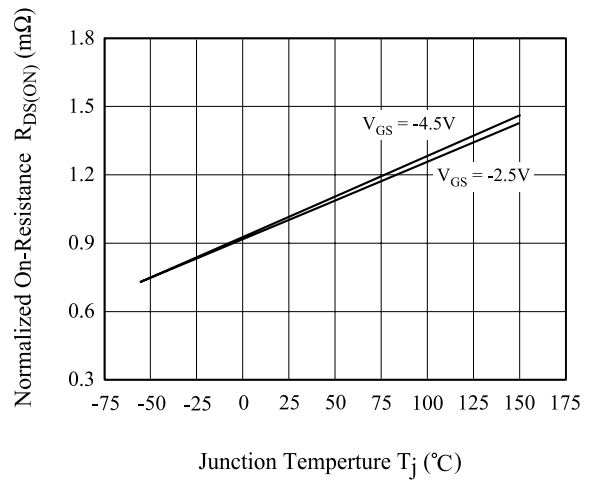


Fig5.  $V_{th} - T_j$

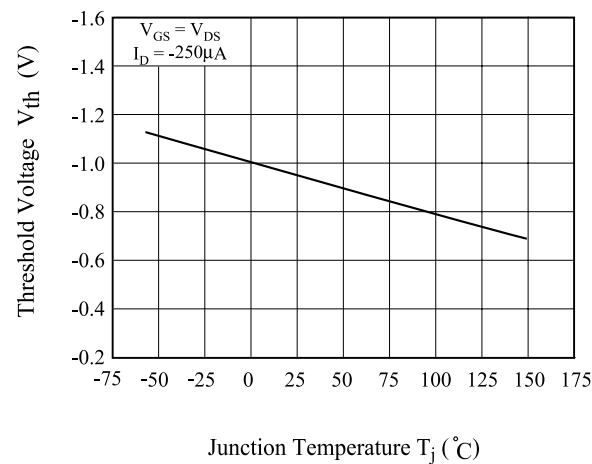
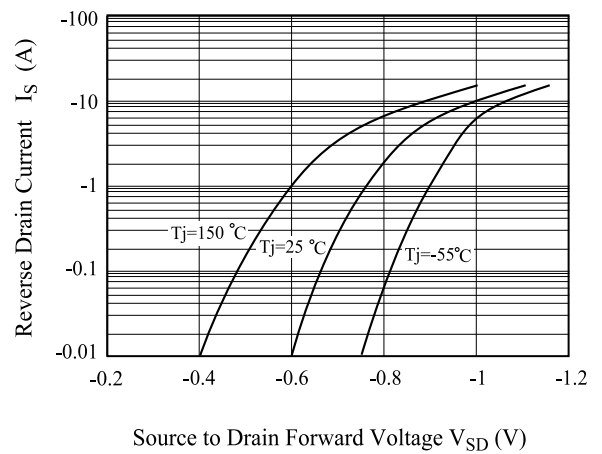


Fig6.  $I_S - V_{SD}$



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

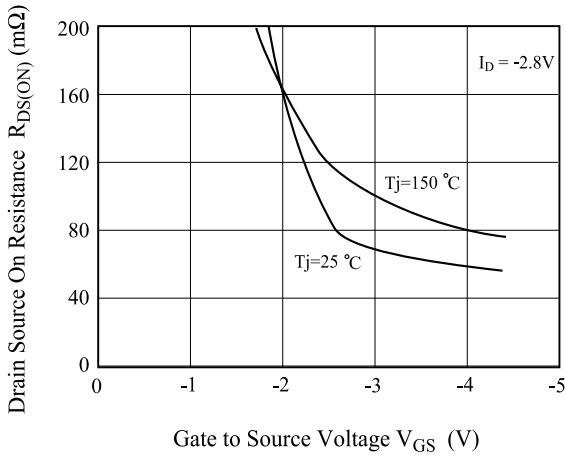


Fig8.  $C - V_{DS}$

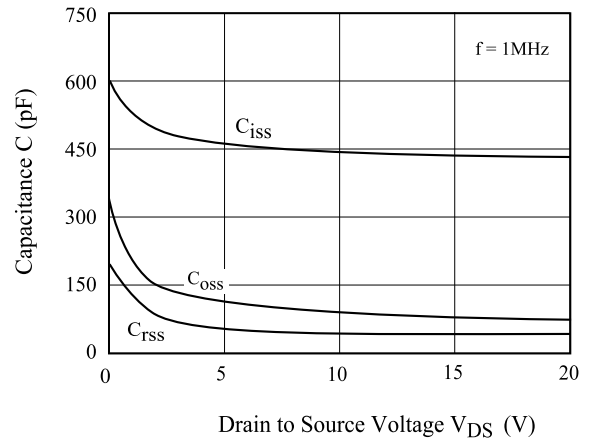


Fig9.  $Q_g - V_{GS}$

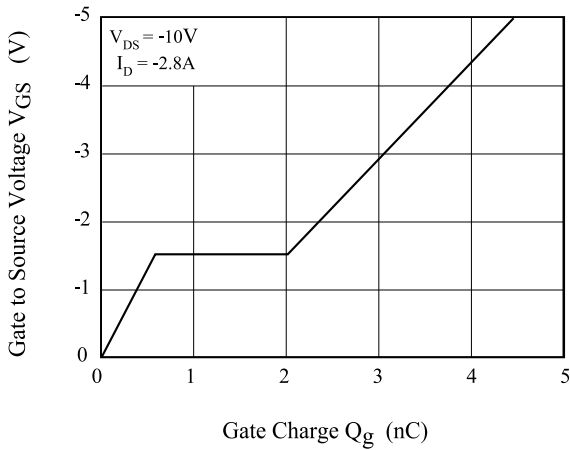


Fig10. Safe Operation Area

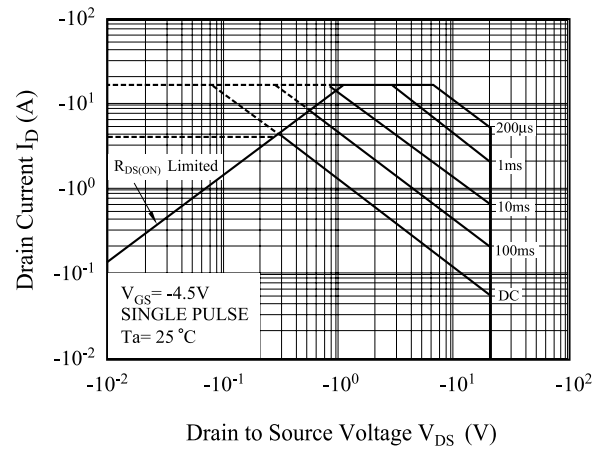


Fig10. Transient Thermal Response Curve

