General Description

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

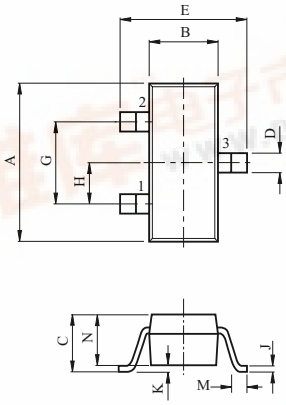
FEATURES

· V_{DSS}=-20V, I_D=-2.3A.

· Drain-Source ON Resistance.

: $R_{DS(ON)}$=130m Ω(Max.) @ V_{GS}=-4.5V.

: $R_{DS(ON)}$=190m Ω(Max.) @ V_{GS}=-2.5V.



DIM	MILLIMETERS
A	2.93±0.1
B	1.63±0.1
C	1.25 MAX
D	0.40+0.1/-0.05
E	2.80±0.15
G	1.9±0.1
H	0.95±0.1
J	0.15+0.1/-0.05
K	0.00 ~ 0.15
M	0.45±0.08
N	1.10±0.1

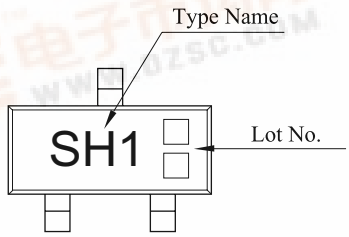
SOT-23W

MAXIMUM RATING (Ta=25℃)

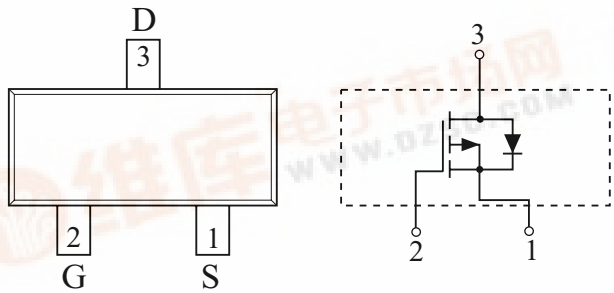
CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	-20	V
Gate-Source Voltage		V_{GSS}	±10	V
Drain Current	DC	I_D *	-2.3	A
	Pulsed (Note1)	I_{DP}*	-8	
Source-Drain Diode Current		I_S *	-1.25	A
Drain Power Dissipation	Ta=25 ℃	P_D *	1.25	W
Maximum Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55 ~150	℃
Thermal Resistance, Junction to Ambient		R_{thJA} *	100	℃/W

* : Surface Mounted on 1" × 1" FR4 Board

Marking



PIN CONNECTION (TOP VIEW)



ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA, V_{GS}=0V,	-20	-	-	V
Drain Cut-off Current	I_{DSS}	V_{GS}=0V, V_{DS}=-16V	-	-	-1	μA
Gate Leakage Current	I_{GSS}	V_{GS}=±10V, V_{DS}=0V	-	-	±100	nA
Gate Threshold Voltage	V_{th}	V_{DS}=V_{GS}, I_D=-250μA (Note 1)	-0.5	-0.8	-1.5	V
Drain-Source ON Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-2.3A (Note 1)	-	115	130	mΩ
		V_{GS}=-2.5V, I_D=-1.0A (Note 1)	-	175	190	
ON State Drain Current	$I_{D(ON)}$	V_{GS}=-4.5V, V_{DS}=-5V (Note 1)	-5	-	-	A
Forward Transconductance	g_{fs}	V_{DS}=-5V, I_D=-2.3A (Note 1)	-	6	-	S
Source-Drain Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-1.25A (Note 1)	-	-0.85	-1.2	V
Dynamic (Note 2)						
Total Gate Charge	Q_g	V_{DS}=-10V, I_D=-2.3A V_{GS}=-4.5V (Fig.1)	-	3.2	-	nC
Gate-Source Charge	Q_{gs}		-	0.7	-	
Gate-Drain Charge	Q_{gd}		-	0.8	-	
Turn-on Delay time	$t_{d(on)}$	V_{DS}=-10V, I_D=-1A V_{GS}=-4.5V, R_G=6 Ω (Fig.2)	-	9.8	-	ns
Turn-on Rise time	t_r		-	10.8	-	
Turn-off Delay time	$t_{d(off)}$		-	79.1	-	
Turn-off Fall time	t_f		-	41.3	-	
Input Capacitance	C_{iss}	V_{DS}=-20V, V_{GS}=0V f = 1.0MHz	-	290	-	pF
Output Capacitance	C_{oss}		-	60	-	
Reverse Trancefer Capacitance	C_{rss}		-	45	-	

Note 1) Pulse test : Pulse width ≤300 μs, Duty Cycle ≤2%.

Note 2) Guaranteed by design. Not subject to production testing.

Fig1. I_D - V_{DS}

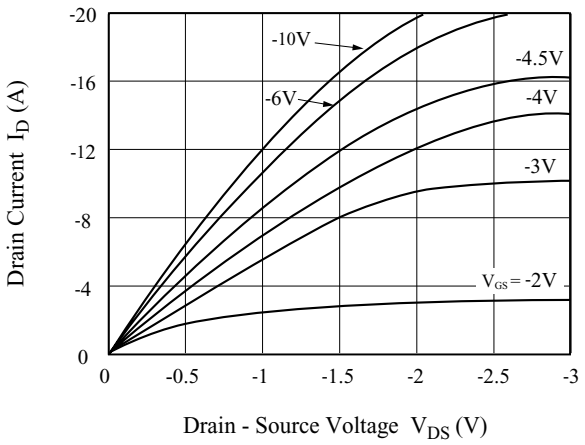


Fig2. I_D - V_{GS}

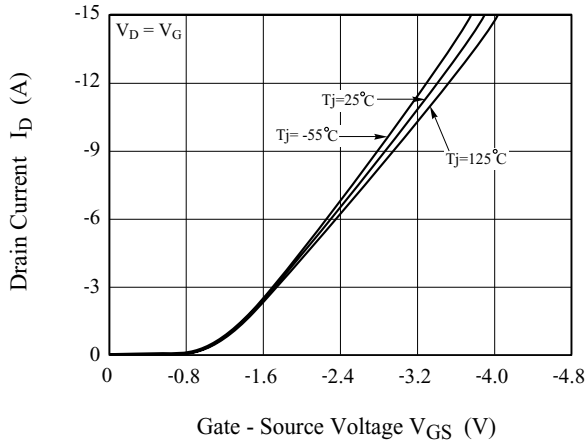


Fig3. V_{th} - T_j

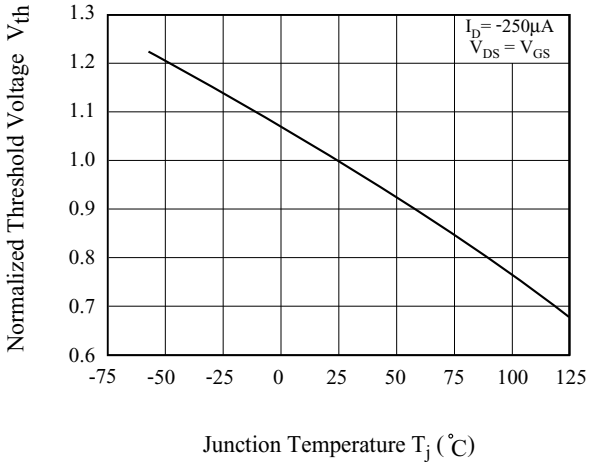


Fig4. I_S - V_{SD}

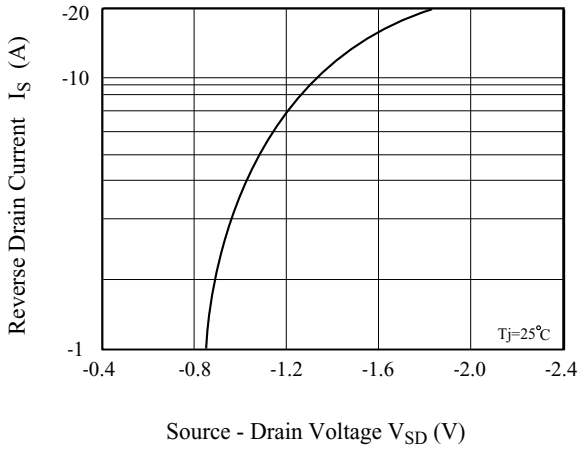


Fig5. $R_{DS(ON)}$ - T_j

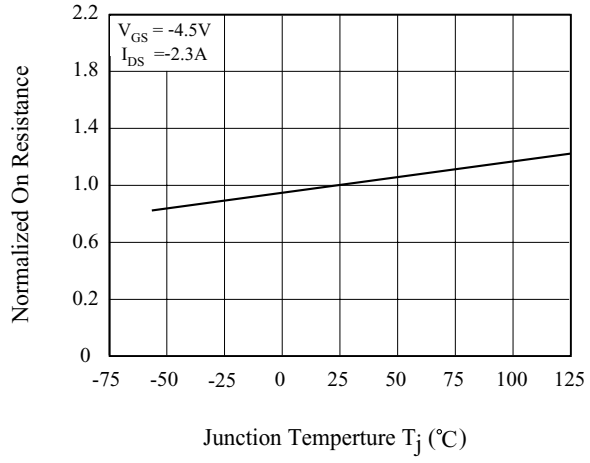


Fig6. C - V_{DS}

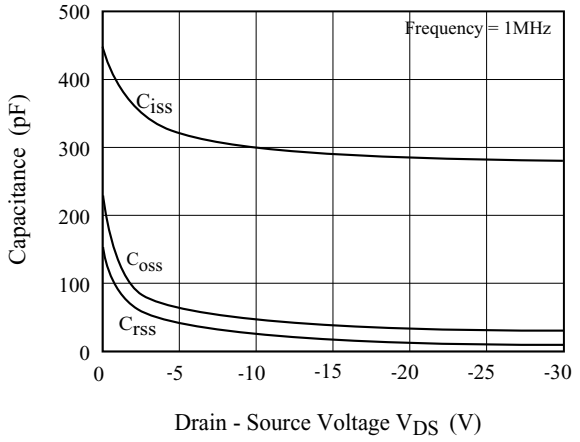


Fig7. Q_g - V_{GS}

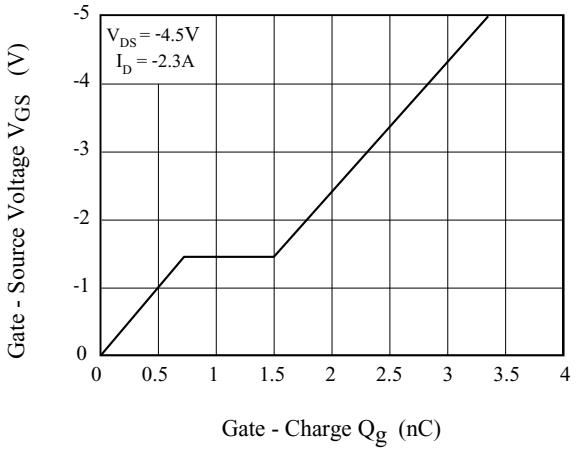


Fig8. Safe Operation Area

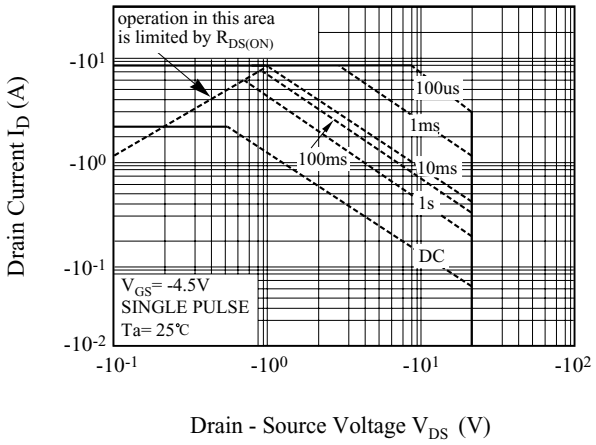


Fig9. Transient Thermal Response Curve

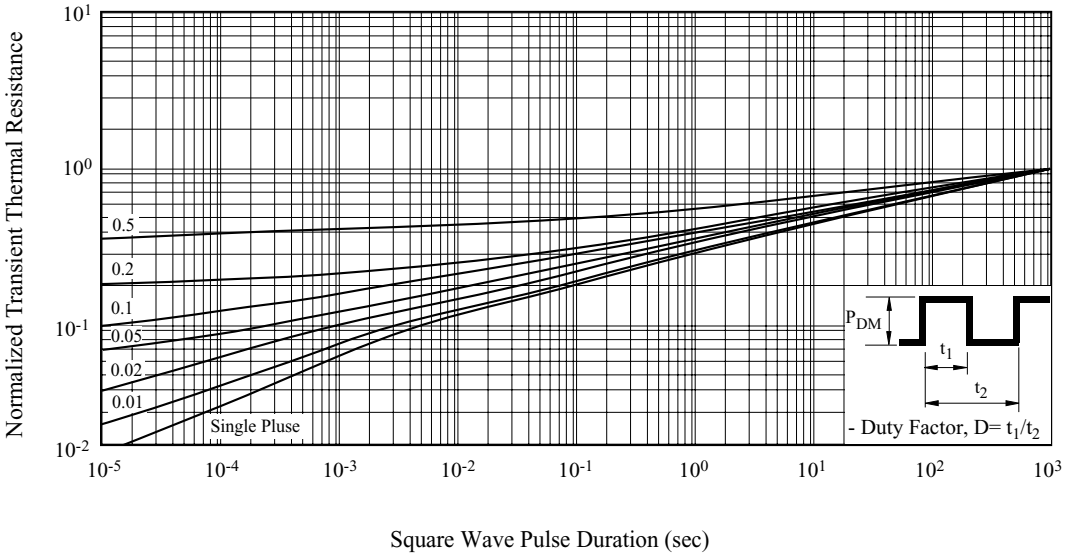


Fig10. Gate Charge

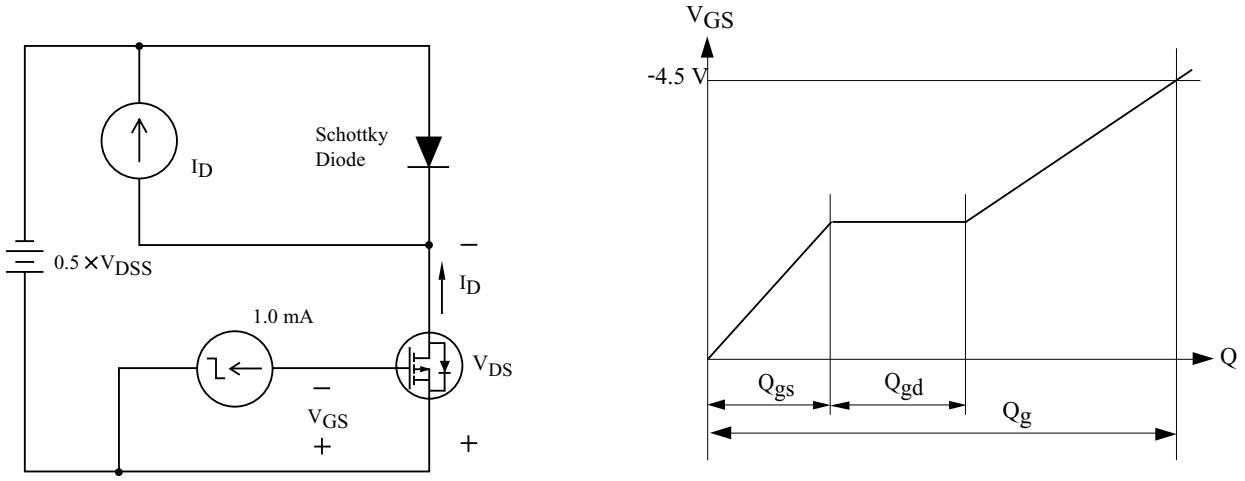


Fig11. Resistive Load Switching