

General Description

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

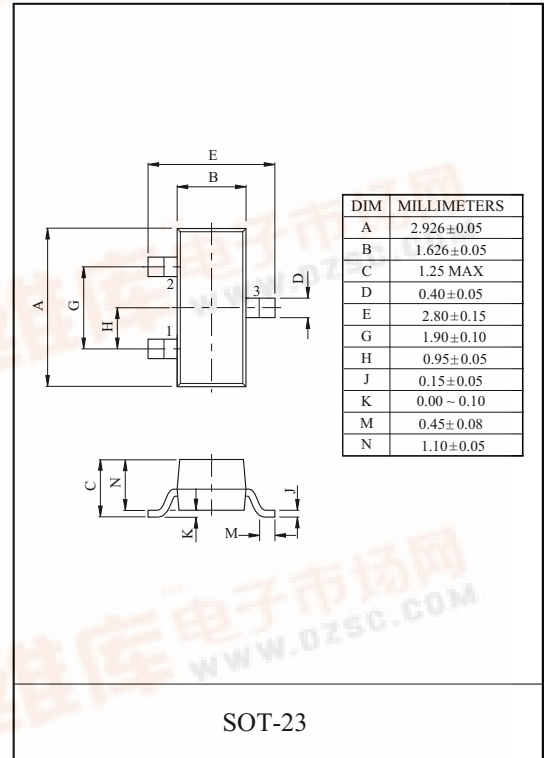
FEATURES

- $V_{DSS}=-20V$, $I_D=-2.4A$.
- Drain-Source ON 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)

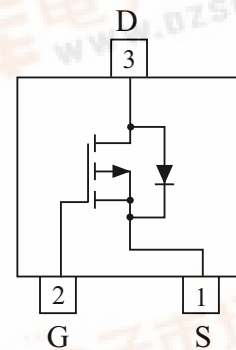
CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	-20	V
Gate-Source Voltage		V_{GSS}	± 12	V
Drain Current	DC	I_D^*	-2.4	A
	Pulsed (Note1)	I_{DP}^*	-9	
Source-Drain Diode Current		I_S^*	-0.9	A
Drain Power Dissipation	Ta=25 °C	P_D^*	1.0	W
	Ta=100 °C		0.6	
Maximum Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55~150	°C
Thermal Resistance, Junction to Ambient		R_{thJA}^*	125	°C/W

* : Surface Mounted on 1" × 1" FR4 Board, $t \leq 5sec$.



PIN CONNECTION

Top View



KMA2D4P20S

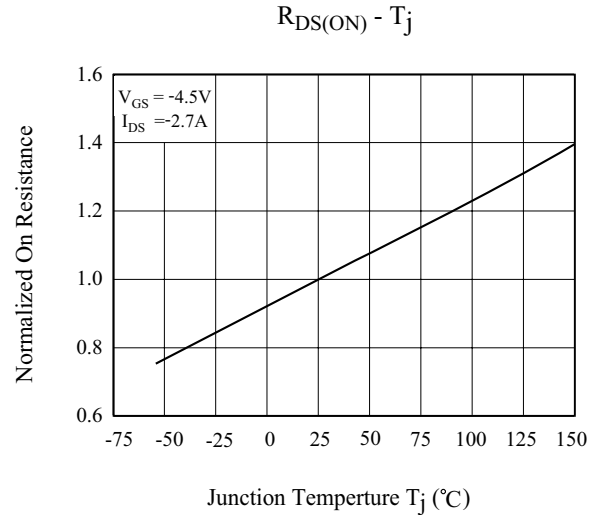
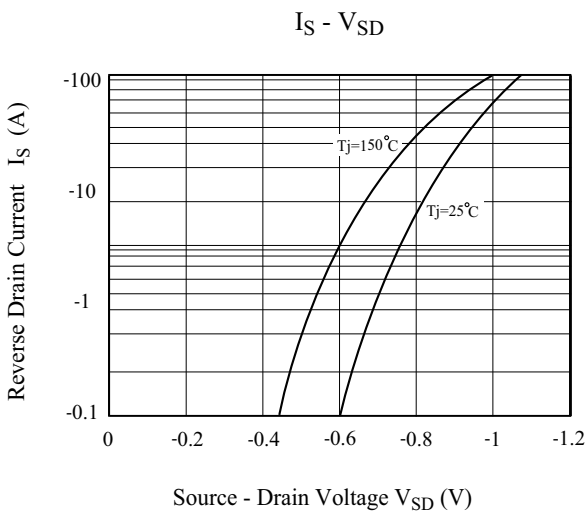
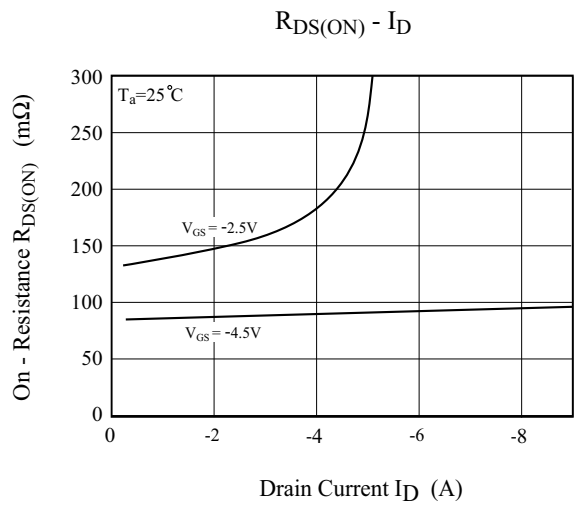
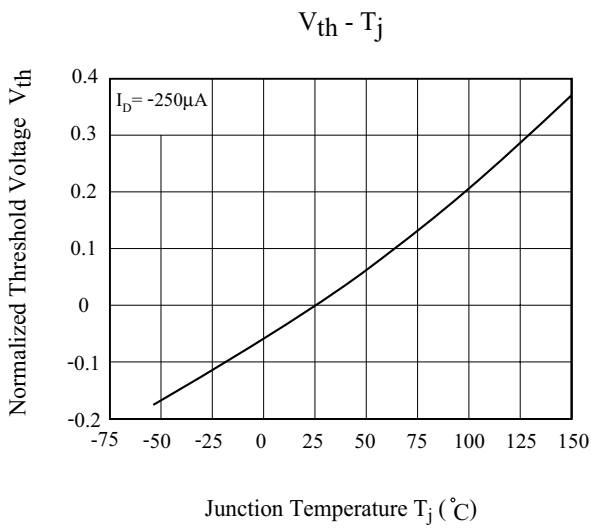
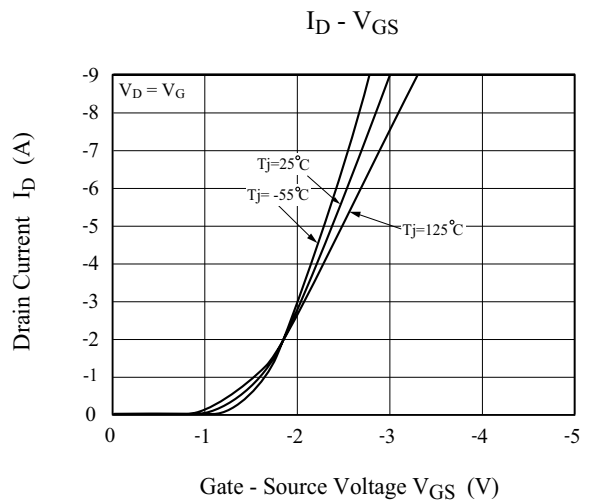
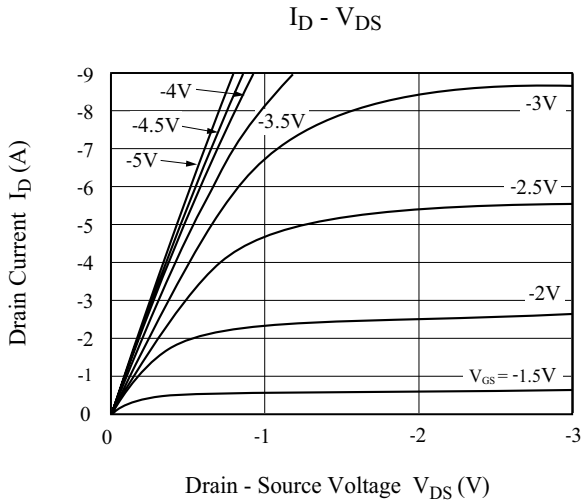
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu A, V_{GS}=0V,$	-20	-	-	V
Drain Cut-off Current	I_{DSS}	$V_{GS}=0V, V_{DS}=-20V$	-	-	-1	μA
		$V_{GS}=0V, V_{DS}=-16V, T_j=70^\circ C$	-	-	-5	
Gate Threshold Voltage	V_{th}	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.6	-	-	V
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	± 100	nA
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{GS}=-4.5V, I_D=-2.4A$ (Note 1)	-	88	100	m Ω
		$V_{GS}=-2.5V, I_D=-1.8A$ (Note 1)	-	146	175	
ON State Drain Current	$I_{D(ON)}$	$V_{GS}=-4.5V, V_{DS}=-5V$ (Note 1)	-9	-	-	A
Forward Transconductance	g_{fs}	$V_{DS}=-5V, I_D=-2.4A$ (Note 1)	-	4	-	S
Source-Drain Diode Forward Voltage	V_{SD}	$I_S=-2.4A, V_{GS}=0V$ (Note 1)	-	-	-1.3	V
Dynamic (Note 2)						
Total Gate Charge	Q_g	$V_{DS}=-15V, R_D=5.6\Omega$ $V_{GS}=-4.5V$ (Fig.1)	-	4	-	nC
Gate-Source Charge	Q_{gs}		-	0.6	-	
Gate-Drain Charge	Q_{gd}		-	1.4	-	
Turn-on Delay time	$t_{d(on)}$	$V_{DS}=-15V, R_L=5.6\Omega,$ $V_{GS}=-4.5V, R_G=6\Omega$ (Fig.2)	-	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	-	

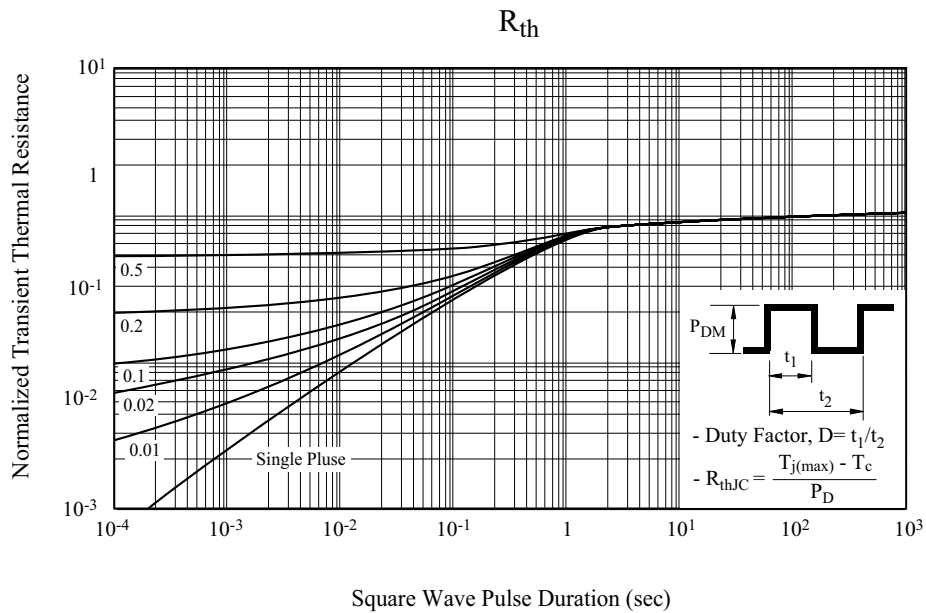
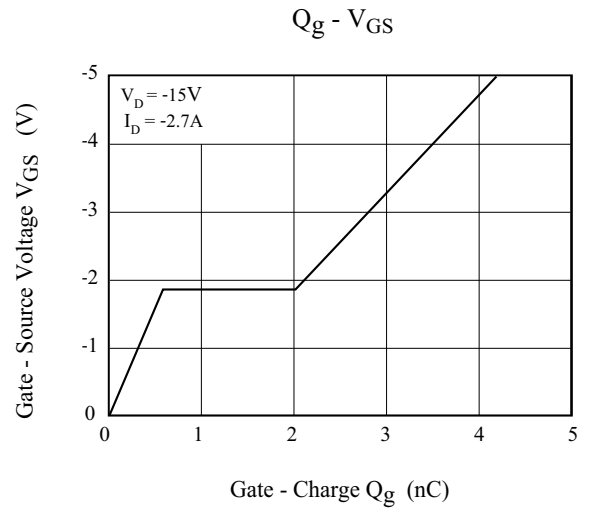
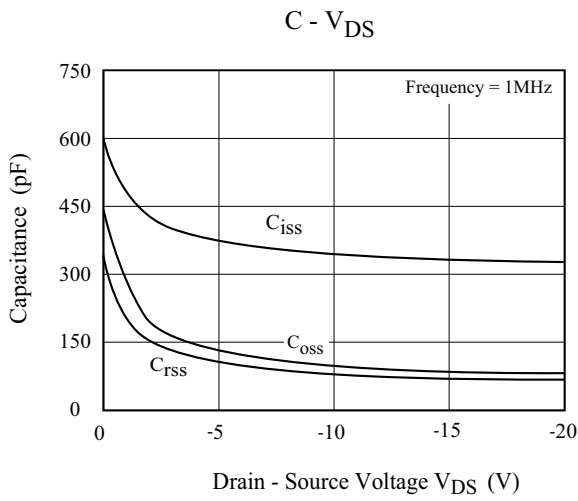
Note 1) Pulse test : Pulse width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

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

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Fig. 1 Gate Charge

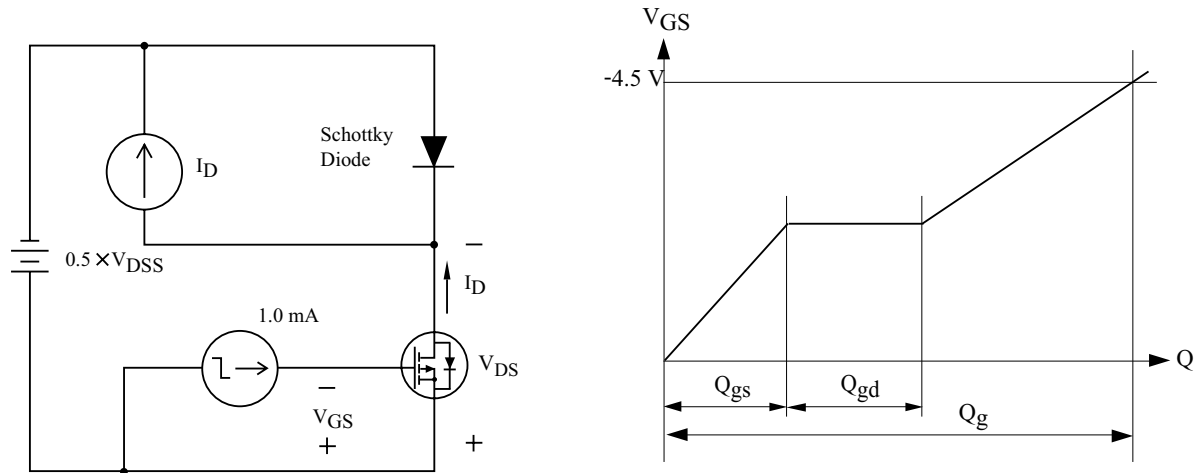


Fig. 2 Resistive Load Switching

