KMA2D7DP20X

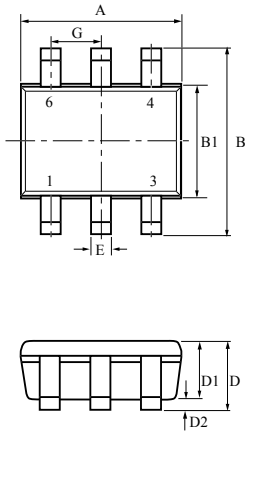
Dual P-CH Trench MOSFET

General Description

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

FEATURES

- V_{DSS}=-20V, I_D=-2.7A.
- Drain-Source ON Resistance.
  : $R_{DS(ON)}$=100mΩ(Max.) @ V_{GS}=-4.5V.
  : $R_{DS(ON)}$=175mΩ(Max.) @ V_{GS}=-2.5V.



DIM	MILLIMETERS
A	3.05 ± 0.1
B	2.85 ± 0.15
B1	1.65 ± 0.1
C	0.15 ±0.05
D	1.0 ± 0.1
D1	0.95 ± 0.05
D2	0.1 MAX
E	0.45MAX
F	0.6 MAX
F1	0.60 Ref.
G	1.0

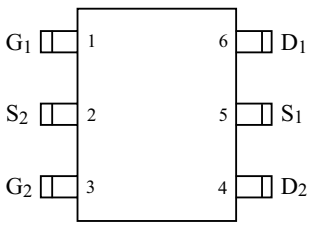
TSOP-6

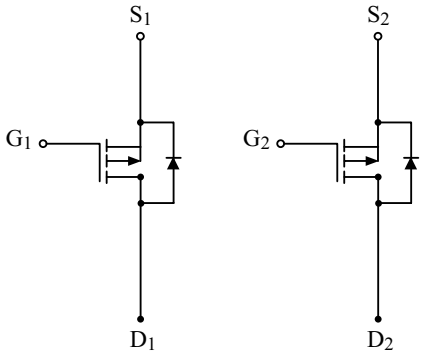
MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	-20	V
Gate-Source Voltage		V_{GSS}	±12	V
Drain Current	DC	I_D *	-2.7	A
	Pulsed	I_{DP}*	-8	
Drain Power Dissipation	Ta=25℃	P_D *	2.1	W
	Ta=100℃		0.85	
Maximum Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55～150	℃
Thermal Resistance, Junction to Ambient		R_{thJA} *	59	℃/W

* : Surface Mounted on 1"×1" Board, t≤300μsec.

PIN CONNECTION (TOP VIEW)





ELECTRICAL CHARACTERISTICS (Ta=25℃)

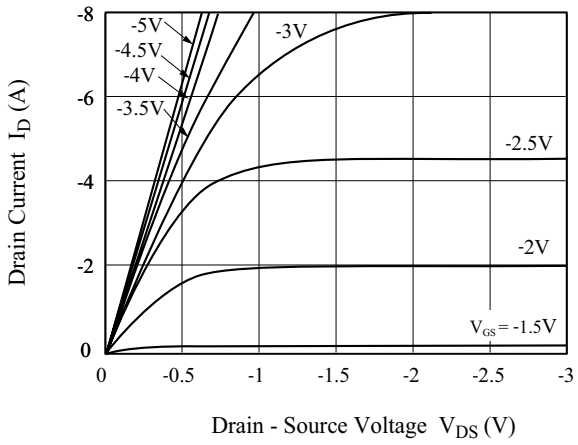
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250㎂, V_{GS}=0V	-20	-	-	V
Drain Cut-off Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V	-	-	-1	㎂
		V_{DS}=-16V, V_{GS}=0V, Tj=70℃ (Note 3)	-	-	-5	
Gate Threshold Voltage	V_{th}	V_{DS}=V_{GS}, I_D=-250㎂	-0.6	-	-	V
Gate Leakage Current	I_{GSS}	V_{GS}=±12V, V_{DS}=0V	-	-	±100	nA
Drain-Source ON Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-2.7A (Note 2)	-	80	100	mΩ
		V_{GS}=-2.5V, I_D=-2.0A (Note 2)	-	140	175	
On-State Drain Current	$I_{D(ON)}$	V_{GS}=-4.5V, V_{DS}=-5V (Note 2)	-8	-	-	A
Forward Transconductance	g_{fs}	V_{DS}=-5V, I_D=-2.7A (Note 2)	-	4	-	S
Dynamic (Note 3)						
Total Gate Charge	Q_g	V_{DS}=-10V, R_L=3.7Ω V_{GS}=-4.5V (Fig.1)	-	5.9	-	nC
Gate-Source Charge	Q_{gs}		-	1	-	
Gate-Drain Charge	Q_{gd}		-	2	-	
Turn-on Delay time	$t_{d(on)}$	V_{DS}=-10V, R_L=3.7Ω V_{GS}=-4.5V R_G=6Ω (Fig.2)	-	22	-	ns
Turn-on Rise time	t_r		-	10	-	
Turn-off Delay time	$t_{d(off)}$		-	20	-	
Turn-off Fall time	t_f		-	40	-	
Source-Drain Diode Ratings						
Continuous Source Current	I_S	V_{GS} < V_{th} (Note 1)	-	-	-0.6	A
Diode Forward Voltage	V_{SD}	I_S=-2.7A, V_{GS}=0V (Note 2)	-	-	-1.3	V

Note 1) Based on thermal dissipation from junction to ambient while mounted on a 1" × 1" PCB Board.

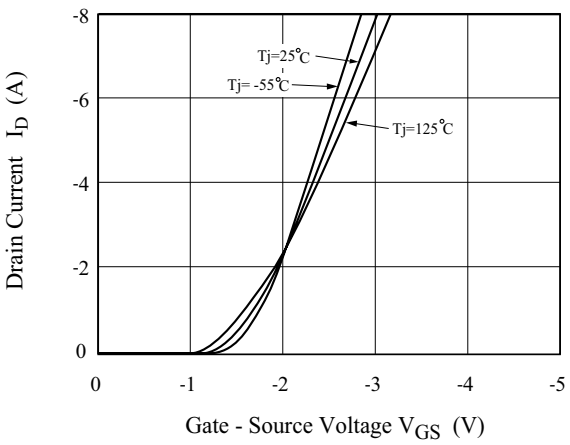
Note 2) Pulse test : Pulse width ≤300㎲.

Note 3) Guaranteed by design, not subject to production testing.

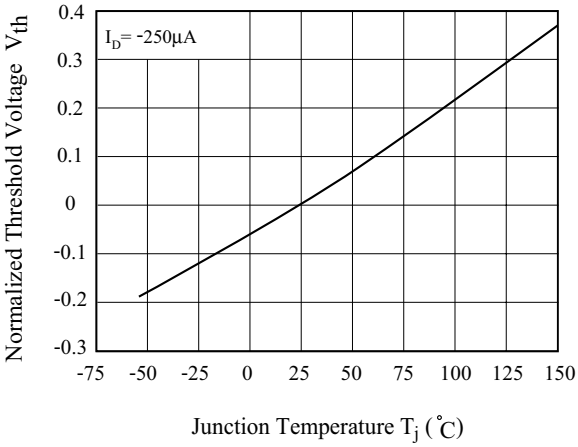
I_D - V_{DS}



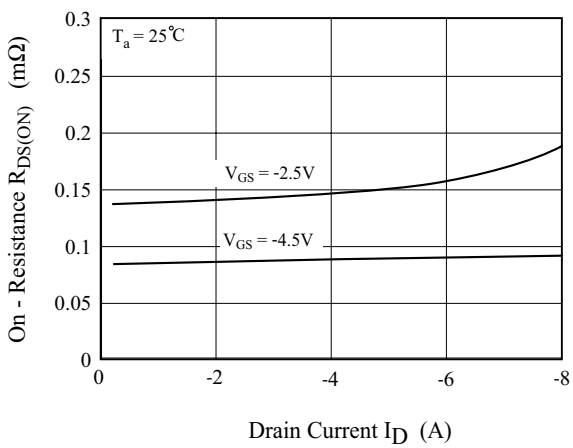
I_D - V_{GS}



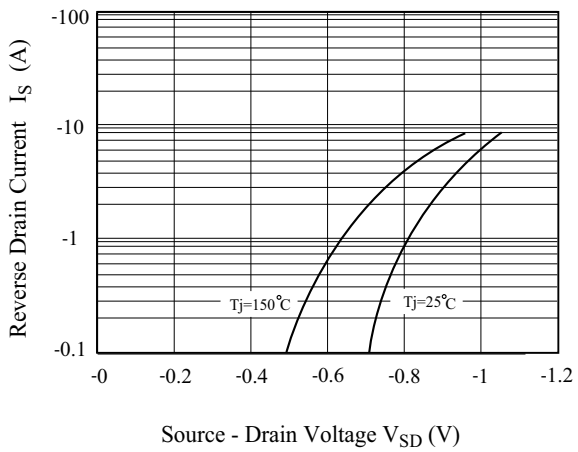
V_{th} - T_j



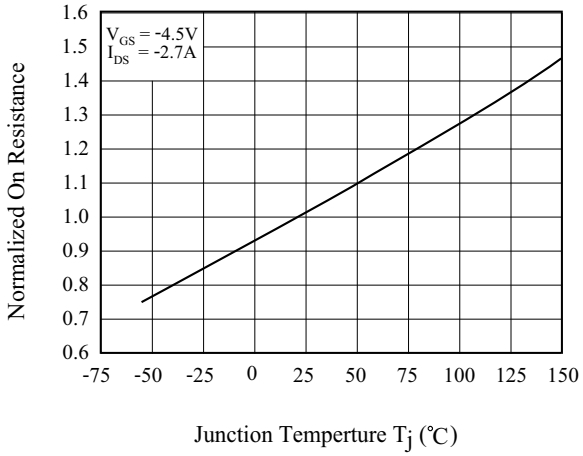
$R_{DS(ON)}$ - I_D



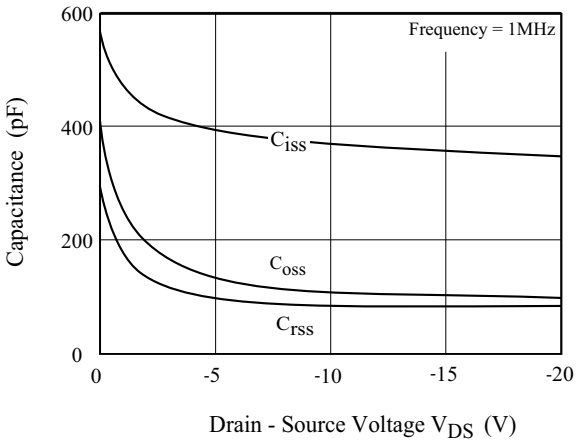
I_S - V_{SD}



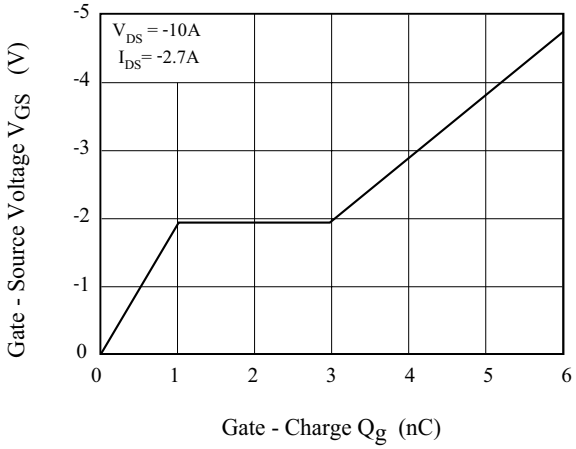
$R_{DS(ON)}$ - T_j



C - V_{DS}



Q_g - V_{GS}



R_{th}

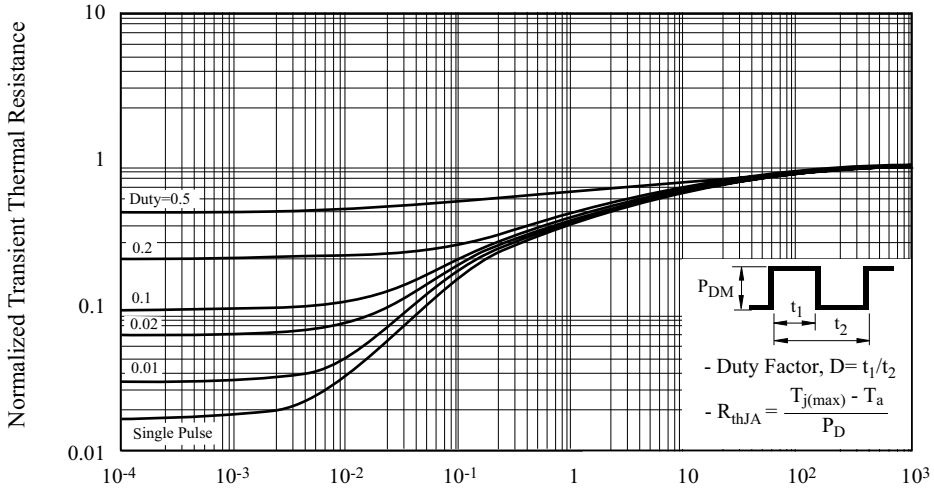


Fig. 1 Gate Charge

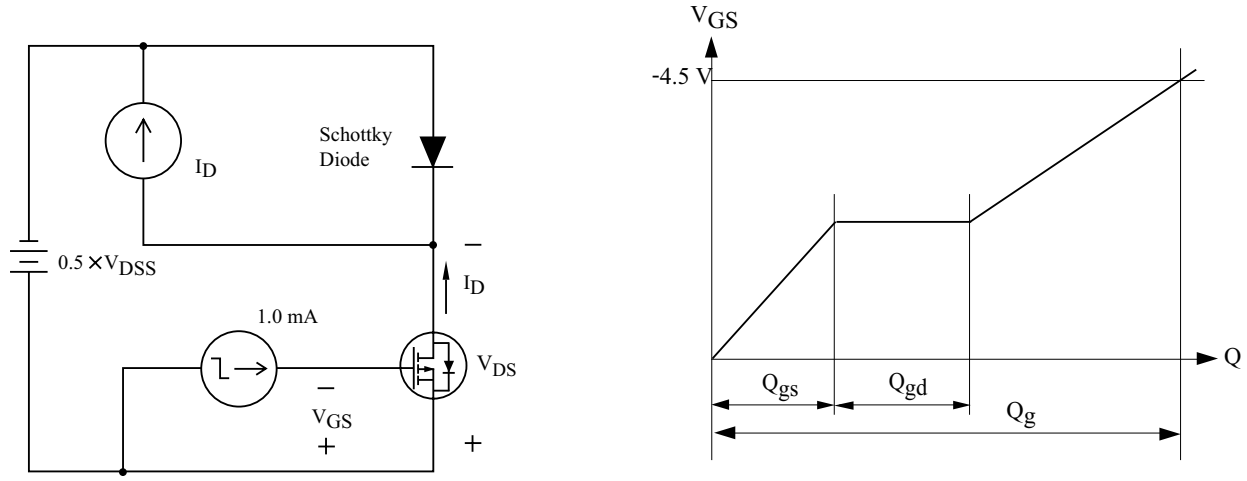


Fig. 2 Resistive Load Switching