KMB6D0DN30QB

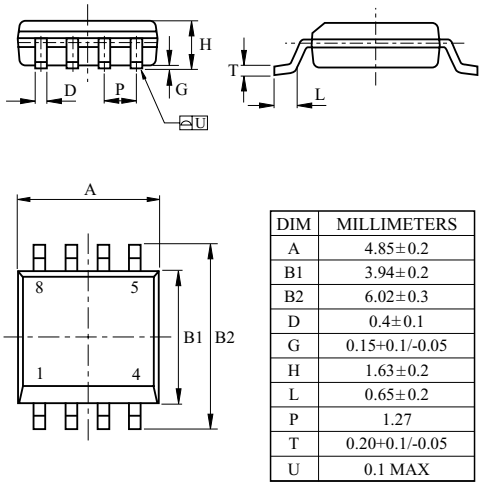
Dual N-Ch Trench MOSFET

GENERAL DESCRIPTION

This Trench MOSFET has better characteristics, such as fast switching time, low on resistance, low gate charge and excellent avalanche characteristics. It is mainly suitable for portable equipment and DC-DC Converter Applications.

FEATURES

- V_{DSS}=30V, I_D=6A.
- Drain-Source ON Resistance.
  $R_{DS(ON)}$=28mΩ (Max.) @V_{GS}=10V
  $R_{DS(ON)}$=42mΩ (Max.) @V_{GS}=4.5V
- Super High Dense Cell Design
- High Power and Current Handing Capability



DIM	MILLIMETERS
A	4.85±0.2
B1	3.94±0.2
B2	6.02±0.3
D	0.4±0.1
G	0.15+0.1/-0.05
H	1.63±0.2
L	0.65±0.2
P	1.27
T	0.20+0.1/-0.05
U	0.1 MAX

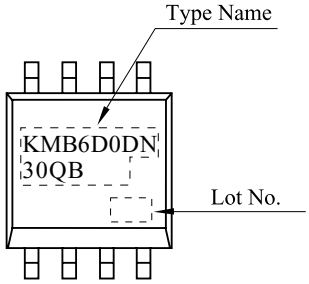
FLP-8

MAXIMUM RATING (Ta=25℃ Unless otherwise noted)

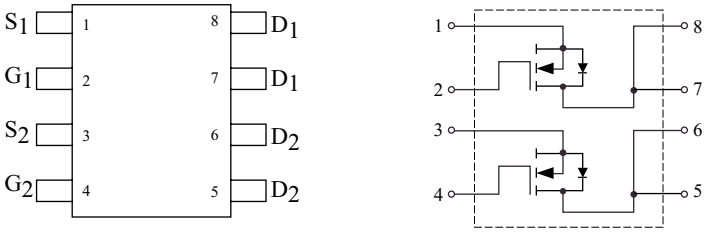
CHARACTERISTIC		SYMBOL	PATING	UNIT
Drain Source Voltage		V_{DSS}	30	V
Gate Source Voltage		V_{GSS}	±20	V
Drain Current	DC	I_D*	6	A
	Pulsed	I_{DP}	30	A
Drain Source Diode Forward Current		I_S	1.7	A
Drain Power Dissipation	25℃	P_D*	2	W
Maximum Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-50~150	℃
Thermal Resistance, Junction to Ambient		R_{thJA}*	62.5	℃/W

Note> *Surface Mounted on FR4 Board, t≤10sec.

Marking



PIN CONNECTION (TOP VIEW)



ELECTRICAL CHARACTERISTICS (Ta=25℃) **UNLESS OTHERWISE NOTED**

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250 μA, V_{GS}=0V	30	-	-	V
Drain Cut-off Current	I_{DSS}	V_{DS}=24V, V_{GS}=0V	-	-	1	μA
Gate Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Gate Threshold Voltage	V_{th}	V_{DS}=V_{GS}, I_D=250 μA	1.0	1.7	2.5	V
Drain-Source ON Resistance	$R_{DS(ON)}$*	V_{GS}=10V, I_D=6A	-	24	28	mΩ
		V_{GS}=4.5V, I_D=5A	-	35	42	
On-State Drain Current	$I_{D(ON)}$*	V_{DS}=5V, V_{GS}=10V	20	-	-	A
Forward Transconductance	g_{fs}*	V_{DS}=5V, I_D=6A	-	20	-	S
Dynamic						
Input Capacitance	C_{iss}	V_{DS}=15V, f=1MHz, V_{GS}=0V	-	742	-	pF
Ouput Capacitance	C_{oss}		-	126	-	
Reverse Transfer Capacitance	C_{rss}		-	76	-	
Total Gate Charge	Q_g*	V_{DS}=15V, V_{GS}=10V, I_D=6A	-	16.5	-	nC
Gate-Source Charge	Q_{gs}*		-	4.0	-	
Gate-Drain Charge	Q_{gd}*		-	2.6	-	
Turn-On Delay Time	$t_{d(on)}$*	V_{DD}=15V, V_{GS}=10V, I_D=6A, R_G=3Ω	-	7.4	-	ns
Turn-On Rise Time	t_r*		-	27.7	-	
Turn-Off Delay Time	$t_{d(off)}$*		-	12.2	-	
Turn-Off Fall Time	t_f*		-	7.6	-	
Source-Drain Diode Ratings						
Source-Drain Forward Voltage	V_{SDF}*	I_{DR}=1.7A, V_{GS}=0V	-	0.75	1.2	V
Note> * Pulse Test : Pulse width ≤ 300μs , Duty cycle ≤ 2%						

Fig1. I_D - V_{DS}

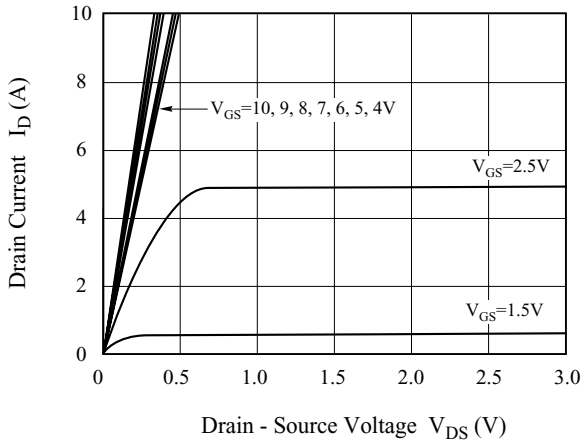


Fig2. $R_{DS(on)}$ - I_D

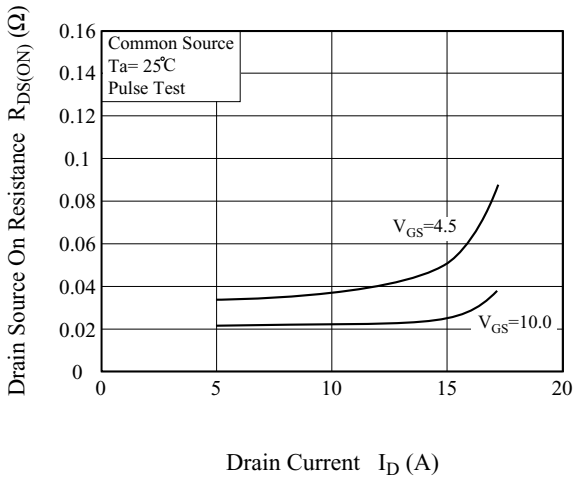


Fig3. I_D - V_{GS}

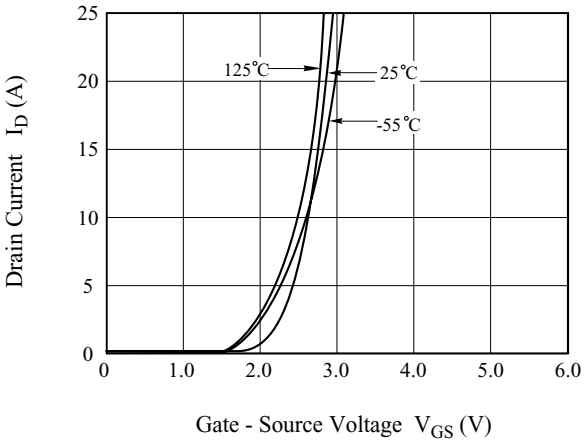


Fig4. $R_{DS(ON)}$ - T_j

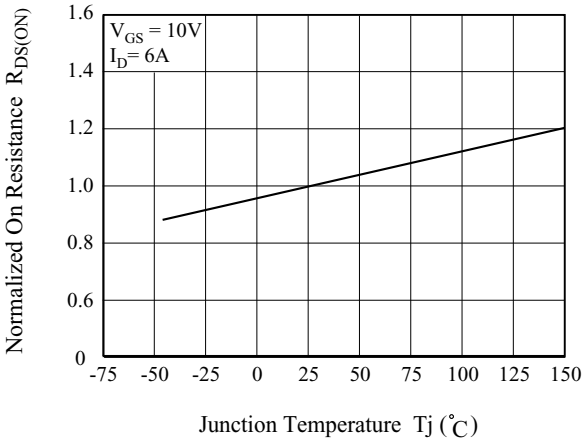


Fig5. V_{th} - T_j

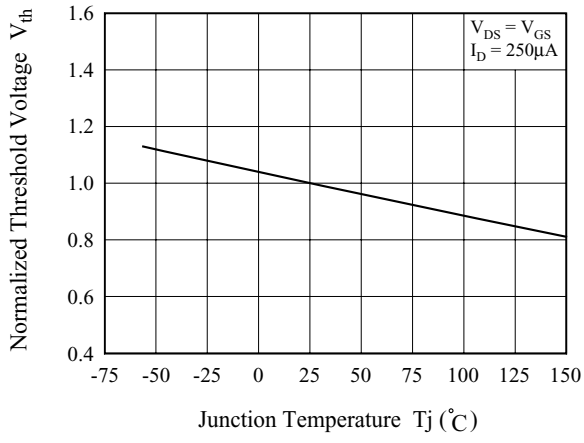


Fig6. I_S - V_{SDF}

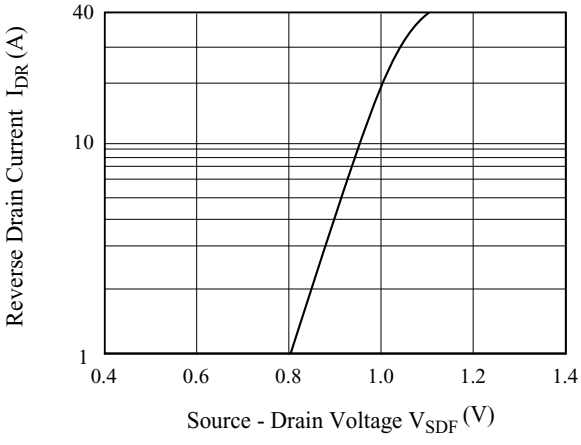


Fig7. C - V_{DS}

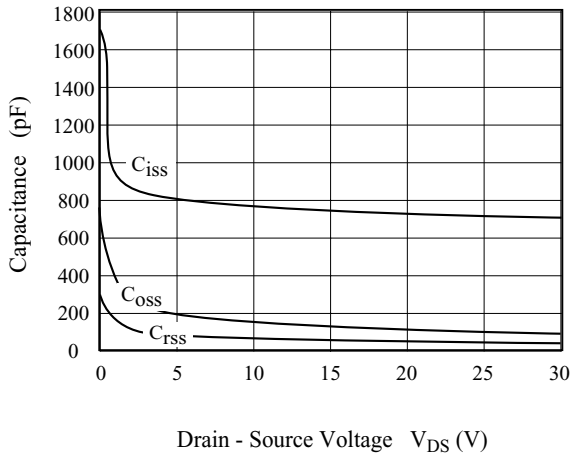


Fig8. Q_g - V_{GS}

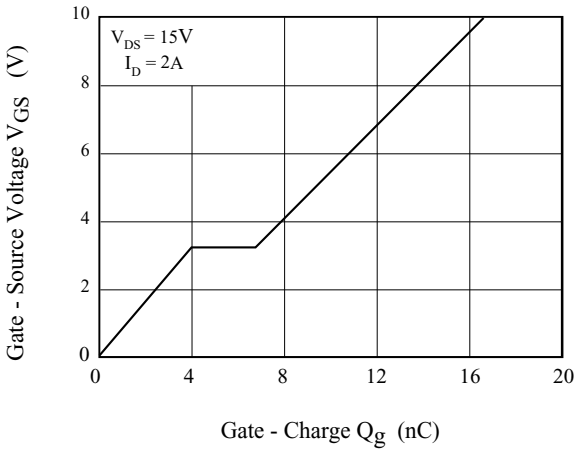


Fig9. Safe Operation Area

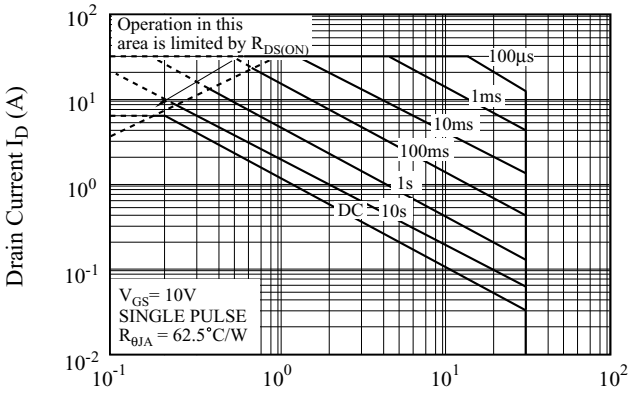


Fig10. Transient Thermal Response Curve

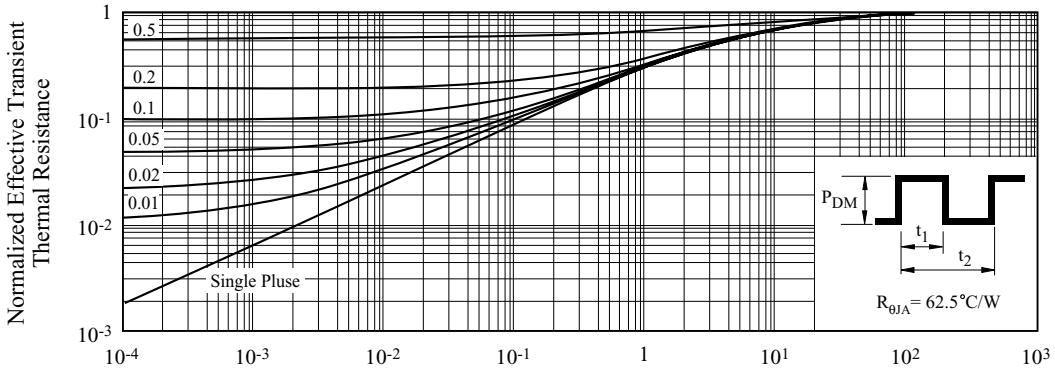


Fig11. Gate Charge

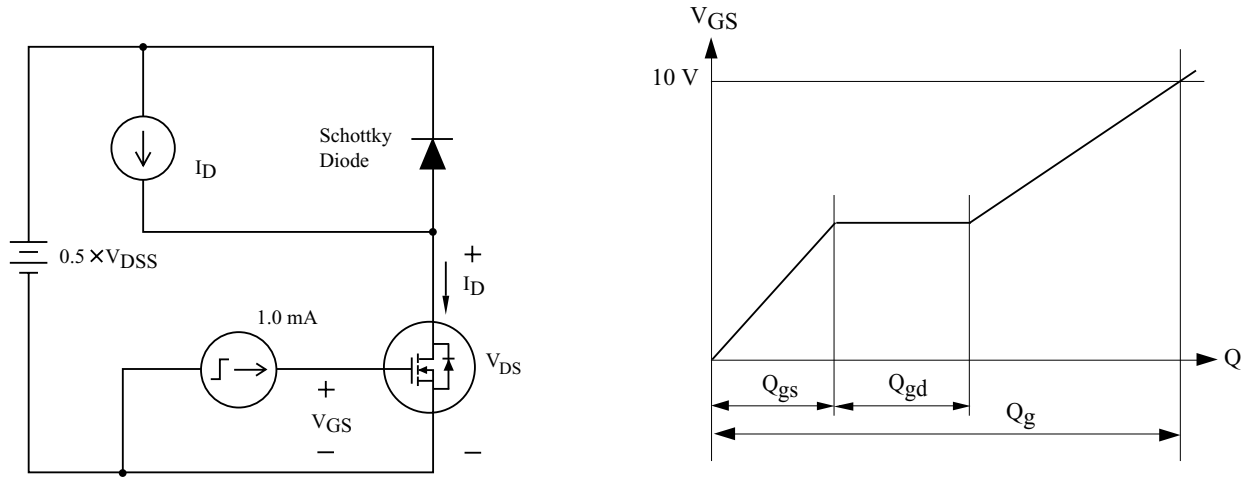


Fig12. Resistive Load Switching