KMB8D2N60QA

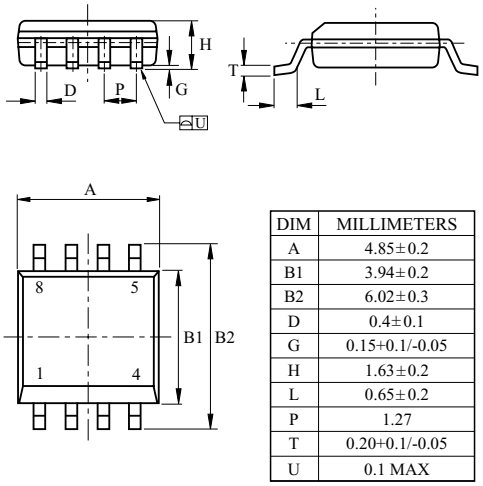
N-Ch Trench MOSFET

GENERAL DESCRIPTION

This Trench MOSFET has better characteristics, such as fast switching time, low on resistance, low gate charge and excellent avalanche characteristiscs. It is mainly suitable for Back-light Inverter.

FEATURES

- V_{DSS}=60V, I_D=8.2A.
- Drain-Source ON Resistance.
  $R_{DS(ON)}$=22mΩ(Max.) @ V_{GS}=10V
  $R_{DS(ON)}$=27mΩ(Max.) @ V_{GS}=4.5V
- Super High Dense Cell Design



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

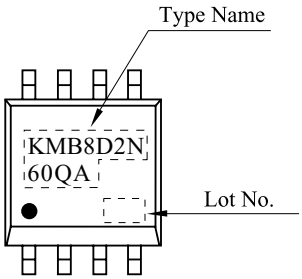
FLP-8

MOSFET Maximum Ratings (Ta=25℃ Unless otherwise noted)

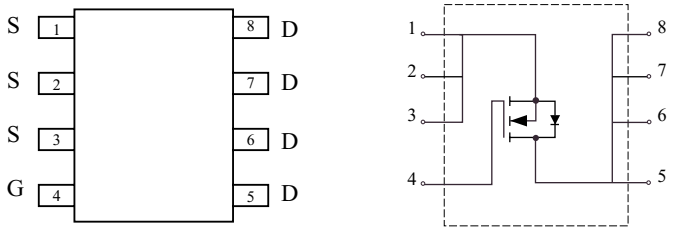
CHARACTERISTIC		SYMBOL	PATING	UNIT
Drain Source Voltage		V_{DSS}	60	V
Gate Source Voltage		V_{GSS}	±20	V
Drain Current	DC@T_A=25℃	I_D*	8.2	A
	DC@T_A=70℃		6.6	A
	Pulsed	I_{DP}	40	A
Drain Source Diode Forward Current		I_S	3.0	A
Drain Power Dissipation	T_A=25℃	P_D*	3.0	W
	T_A=70℃		2.0	W
Maximum Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55~150	℃
Thermal Resistance, Junction to Ambient		R_{thJA}*	41	℃/W

Note : *Surface Mounted on 1×1 FR4 Board

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}	V_{GS}=0V, I_{DS}=250 μA	60	-	-	V
Drain Cut-off Current	I_{DSS}	V_{DS}=48V, V_{GS}=0V	-	-	1	μA
		V_{DS}=48V, V_{GS}=0V, T_j=70℃	-	-	5	
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	-	3.0	V
Drain-Source ON Resistance	$R_{DS(ON)*}$	V_{GS}=10V, I_D=8.2A	-	16	22	mΩ
		V_{GS}=4.5V, I_D=7.6A	-	20	27	
Forward Transconductance	G_{fs*}	V_{DS}=5V, I_D=8.2A	-	2.4	-	S
Dynamic						
Input Capaclitance	C_{iss}	V_{DS}=30V, V_{GS}=0V, f=1MHz	-	1920	2300	pF
Ouput Capacitance	C_{oss}		-	155	-	
Reverse Transfer Capacitance	C_{rss}		-	116	-	
Total Gate Charge (V_{GS}=10V)	Q_{g*}	V_{DS}=30V, V_{GS}=10V, I_D=8.2A	-	47.6	58	nC
Total Gate Charge (V_{GS}=4.5V)			-	24.2	30	
Gate-Source Charge	Q_{gs*}		-	6.0	-	
Gate-Drain Charge	Q_{gd*}		-	14.4	-	
Turn-On Delay Time	$t_{d(on)*}$	V_{DD}=30V, V_{GS}=10V, R_L=3.6Ω, R_G=3Ω	-	8.2	-	ns
Turn-On Rise Time	t_{r*}		-	5.5	-	
Turn-Off Delay Time	$t_{d(off)*}$		-	29.7	-	
Turn-Off Fall Time	t_{f*}		-	5.2	-	
Source-Drain Diode Ratings						
Source-Drain Forward Voltage	V_{SDF*}	V_{GS}=0V, I_{DR}=1.7A,	-	0.74	1.0	V

Note

1. Pulse Test : Pulse width ≤ 10μs , Duty cycle ≤ 1%

Fig1. I_D - V_{DS}

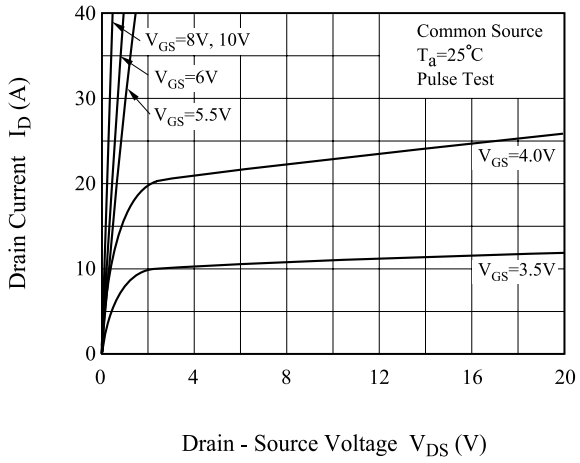


Fig2. $R_{DS(ON)}$ - I_D

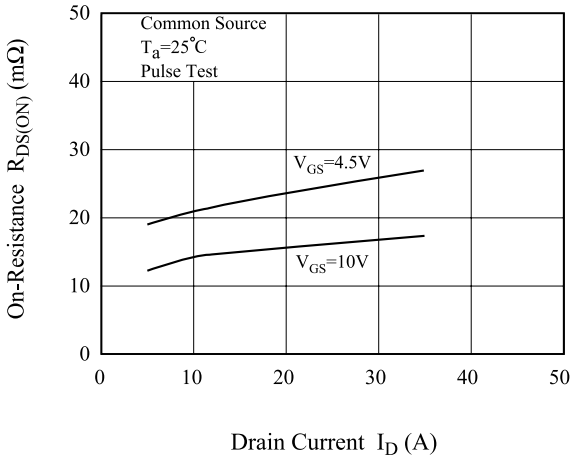


Fig3. I_D - V_{GS}

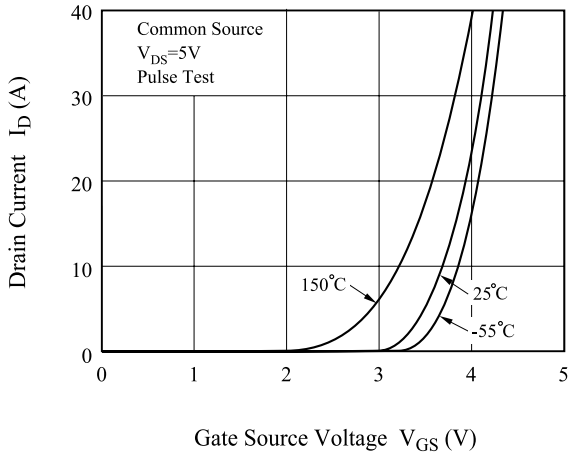


Fig4. $R_{DS(ON)}$ - T_j

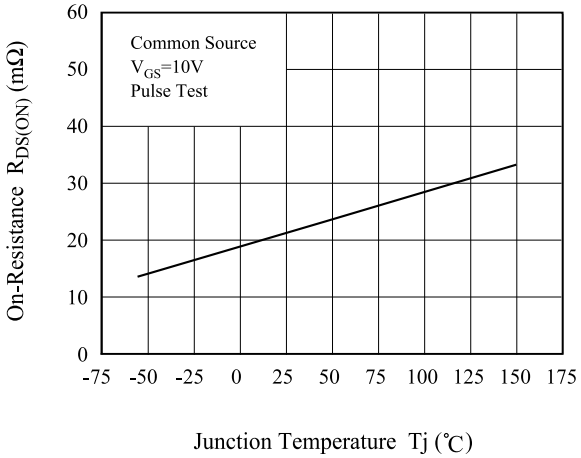


Fig5. V_{th} - T_j

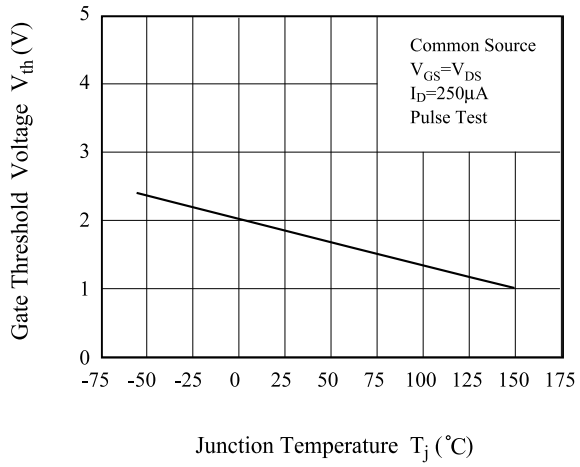


Fig 6. I_S - V_{SDF}

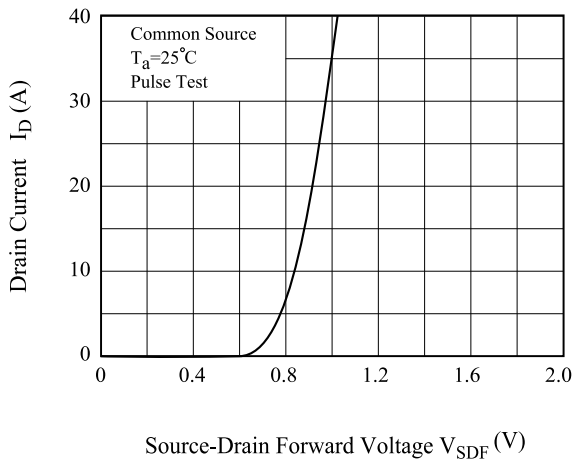


Fig7. V_{GS} - Q_g

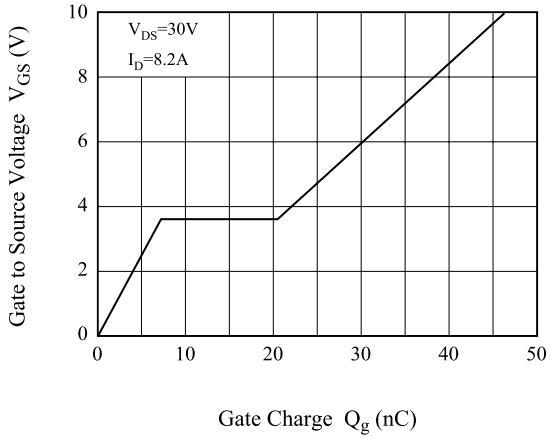


Fig8. C - V_{DS}

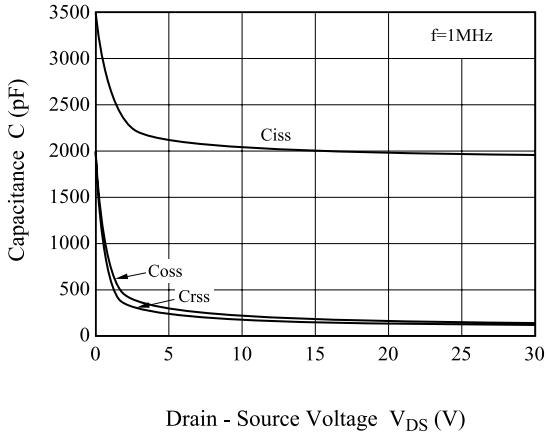


Fig9. Safe Operation Area

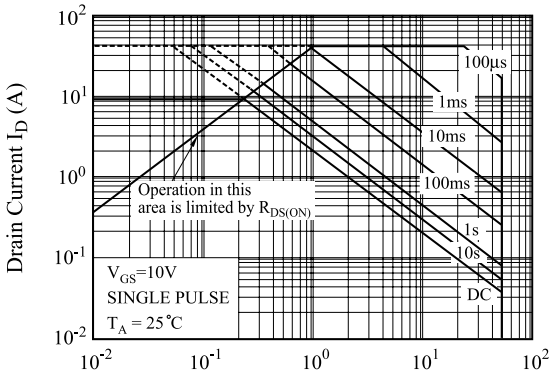


Fig10. Transient Thermal Response Curve