

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 SMPS.

FEATURES

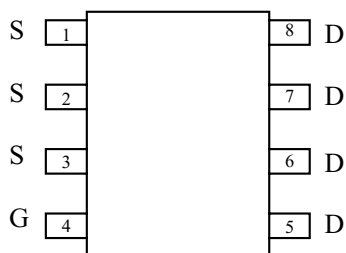
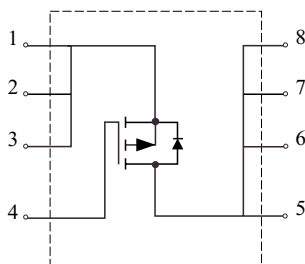
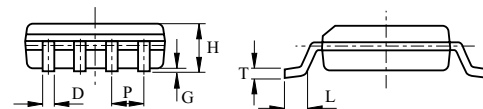
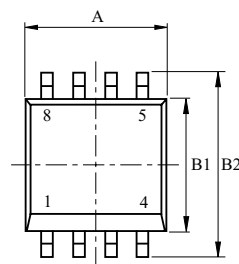
- $V_{DS} = -30V$, $I_D = -10A$.
- Drain-Source ON Resistance.
 $R_{DS(ON)} = 20m\ \Omega$ (Max.) @ $V_{GS} = -10V$
 $R_{DS(ON)} = 28m\ \Omega$ (Max.) @ $V_{GS} = -4.5V$
- Super High Dense Cell Design

MOSFET Maximum Ratings (Ta=25 °C Unless otherwise noted)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain Source Voltage		V_{DS}	-30	V
Gate Source Voltage		V_{GS}	± 25	V
Drain Current	DC	I_D^*	-10	A
	Pulsed	I_{DP}	-50	A
Drain Source Diode Forward Current		I_S	-1.7	A
Drain Power Dissipation		P_D^*	2.0	W
Maximum Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55~150	°C
Thermal Resistance, Junction to Ambient		R_{thJA}^*	62.5	°C/W

Note : *Surface Mounted on FR4 Board

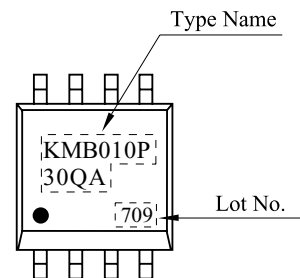
PIN CONNECTION (TOP VIEW)



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

FLP-8

Marking



KMB010P30QA

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	-30	-	-	V
Drain Cut-off Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V	-	-	-1	μA
Gate Leakage Current	I _{GSS}	V _{GS} =±25V, V _{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	V _{th}	V _{DS} =V _{GS} , I _D =-250 μA	-1.3	-1.9	-2.5	V
Drain-Source ON Resistance	R _{DS(ON)*}	V _{GS} =-10V, I _D =-10A	-	12	20	m Ω
		V _{GS} =-4.5V, I _D =-8A	-	20	28	
On-State Drain Current	I _{D(ON)*}	V _{DS} =-5V, V _{GS} =-10V	-30	-	-	A
Forward Transconductance	G _{fs} *	V _{DS} =-15V, I _D =-10A	-	14	-	S
Dynamic						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1MHz	-	2530	-	pF
Ouput Capacitance	C _{oss}		-	635	-	
Reverse Transfer Capacitance	C _{rss}		-	445	-	
Total Gate Charge	Q _g *	V _{DS} =-15V, V _{GS} =-10V, I _D =-10A	-	44.6	-	nC
Gate-Source Charge	Q _{gs} *		-	7.7	-	
Gate-Drain Charge	Q _{gd} *		-	11.5	-	
Turn-On Delat Time	t _{d(on)*}	V _{DD} =-15V, V _{GS} =-10V R _L =1.25 Ω, R _G =6 Ω	-	10.2	-	ns
Turn-On Rise Time	t _r *		-	6.3	-	
Turn-On Deley Time	t _{d(off)*}		-	22.5	-	
Turn-On Fall Time	t _r *		-	10.6	-	
Source-Drain Diode Ratings						
Source-Drain Forward Voltage	V _{SDF} *	V _{GS} =0V, I _{DR} =-1.7A,	-	-0.73	-1.2	V
Note						
1. Pulse Test : Pulse width ≤ 10 μs , Duty cycle ≤ 1%						

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Fig1. $I_D - V_{DS}$

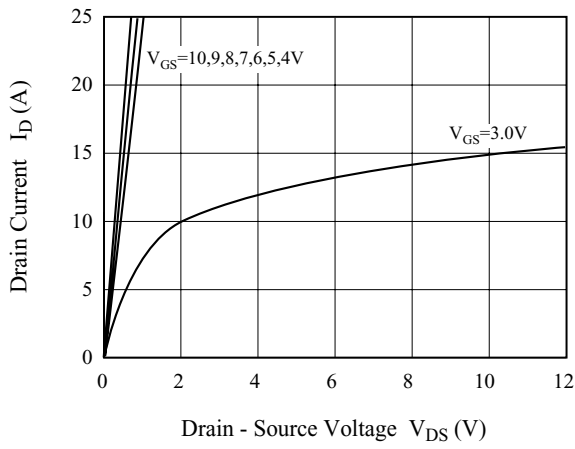


Fig2. $I_D - V_{GS}$

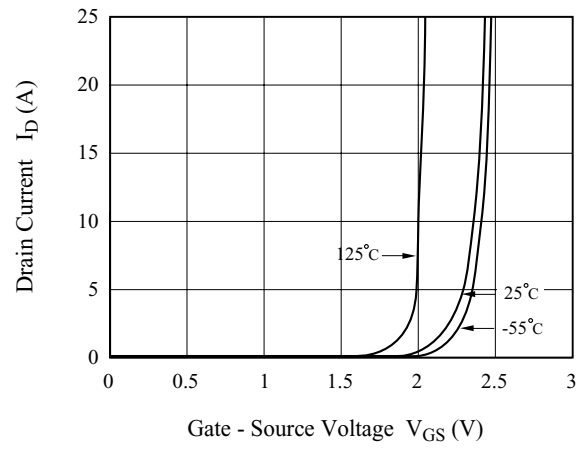


Fig3. $C - V_{DS}$

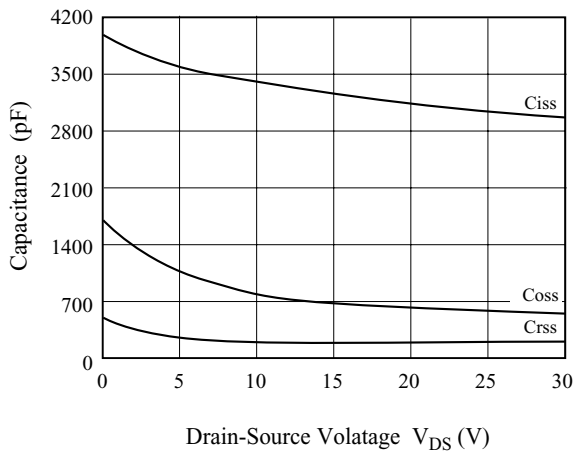


Fig4. $R_{DS(ON)} - T_j$

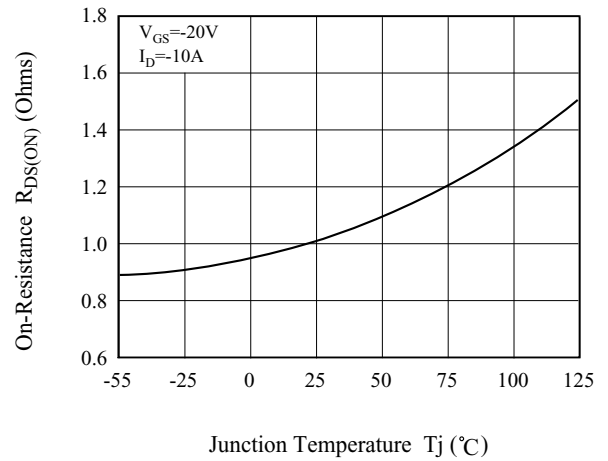


Fig5. $V_{th} - T_j$

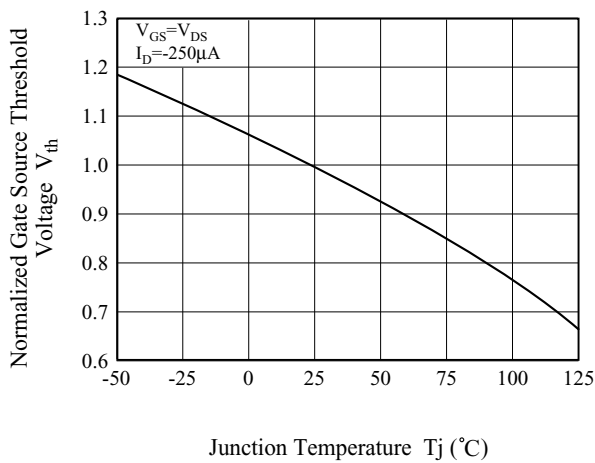
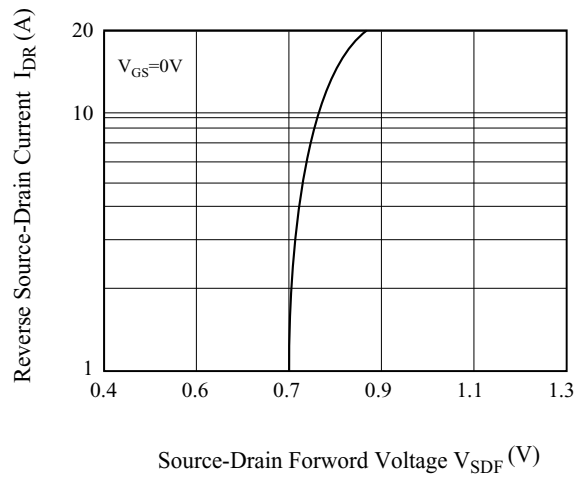


Fig 6. $I_{DR} - V_{SDF}$



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Fig7. $V_{GS} - Q_g$

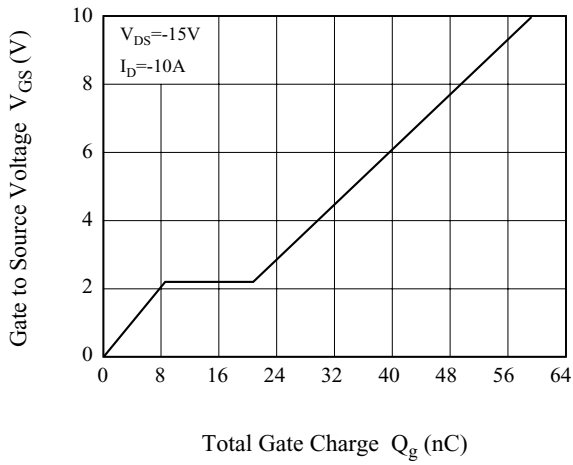


Fig8. Safe Operation Area

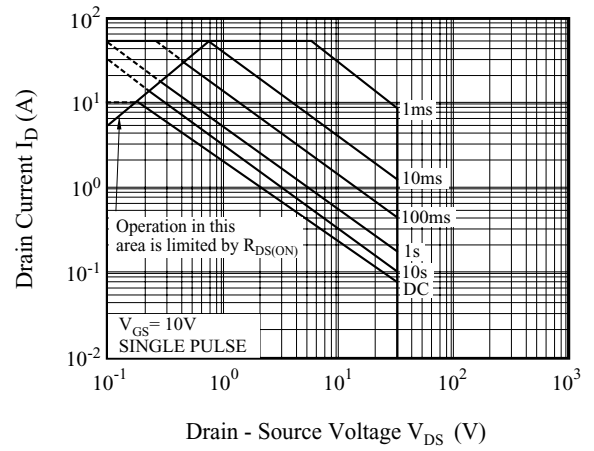


Fig9. Transient Thermal Response Curve

