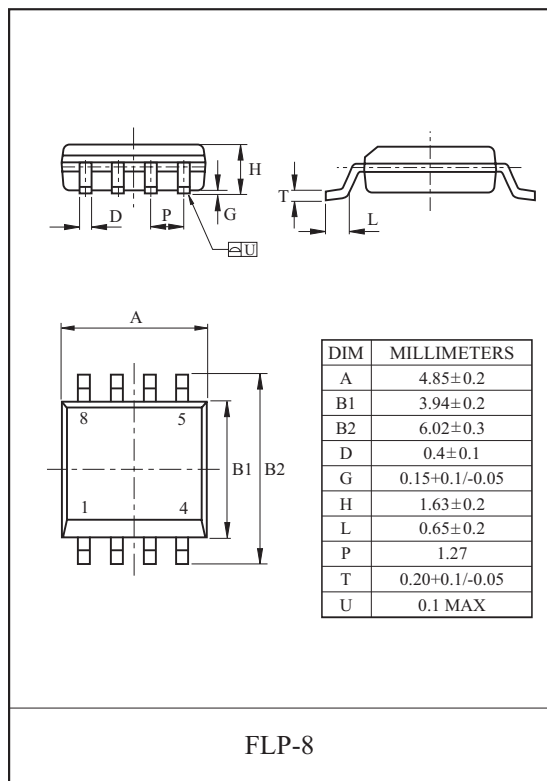


General Description

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 Load Switch.

FEATURES

- $V_{DSS} = -30V$, $I_D = -7.1A$
- Drain-Source ON Resistance
 $R_{DS(ON)} = 25m\Omega$ (Max.) @ $V_{GS} = -10V$
 $R_{DS(ON)} = 41m\Omega$ (Max.) @ $V_{GS} = -4.5V$
- Super Hige Dense Cell Design

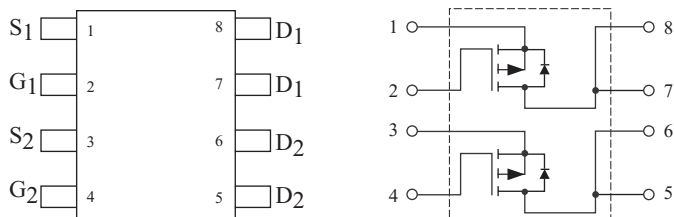


MAXIMUM RATING (Ta=25°C)

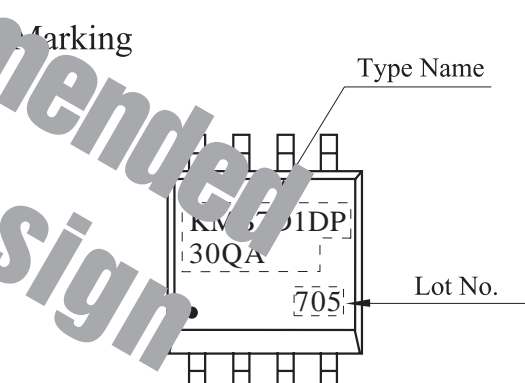
CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain-Source Voltage	V_{DSS}	-30	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current	DC@T _A =25°C	-7.1	A
	DC@T _A =70°C	-7.1	
	Pulsed	-10	
Drain-Source-Diode Forward Current	I_S	-1.7	A
Drain Power Dissipation	T _A =25°C	1.1	W
	T _A =70°C	0.7	
Maximum Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	-55 ~ 150	°C
Thermal Resistance, Junction to Ambient	R _{thJA}	110	°C/W

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

PIN CONNECTION (TOP VIEW)



Not recommended for new design



KMB7D1DP30QA

ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_{DS}=-10\mu A, V_{GS}=0V,$	-30	-	-	V
Drain Cut-off Current	I_{DSS}	$V_{GS}=0V, V_{DS}=-30V$	-	-	-1	μA
		$V_{GS}=0V, V_{DS}=-30V, T_j=55^\circ C$	-	-	-25	
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage	V_{th}	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-	-3	V
Drain-Source ON Resistance	$R_{DS(ON)}^*$	$V_{GS}=-10V, I_D=-7.1A$	-	20	25	$m\Omega$
		$V_{GS}=-4.5V, I_D=-5.5A$	-	33	41	
Forward Transconductance	g_{fs}^*	$V_{DS}=-10V, I_D=-7.1A$	-	20	-	S
Dynamic						
Input Capacitance	C_{iss}	$V_{DS}=15V, f=1MHz, V_{GS}=0V$	-	1550	-	pF
Output Capacitance	C_{oss}		-	420	-	
Reverse Transfer Capacitance	C_{rss}		-	380	-	
Total Gate Charge	Q_g^*	$V_{DS}=-15V, I_D=-7.1A$	-	33	50	nC
Gate-Source Charge	Q_{gs}^*		-	5.4	-	
Gate-Drain Charge	Q_{gd}^*		-	8.9	-	
Turn-On Delay Time	$t_{d(on)}^*$	$V_{DD}=-15V, V_{GS}=-10V, I_D=-1A, R_G=6\Omega$	-	9	15	ns
Turn-On Rise Time	t_r^*		-	12	20	
Turn-Off Delay Time	$t_{d(off)}^*$		-	34	90	
Turn-Off Fall Time	t_f^*		-	34	50	
Source-Drain Diode Ratings						
Source-Drain Forward Voltage	V_{SDF}^*	$V_{GS}=0V, I_{DR}=-1.7A$	-	-0.8	-1.2	V

* : Pulse Test : Pulse width <300 μs , Duty cycle < 2%

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Fig1. $V_{DS} - I_D$

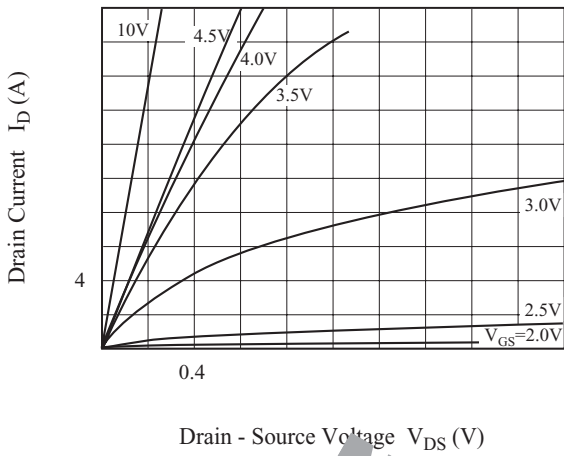


Fig2. $R_{DS(ON)} - I_D$

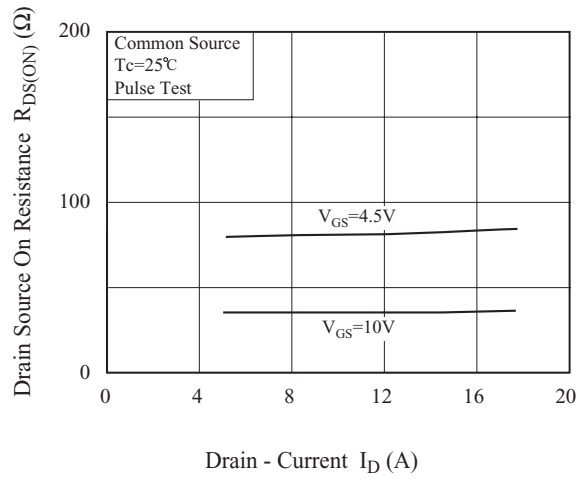


Fig3. $V_{GS} - I_D$

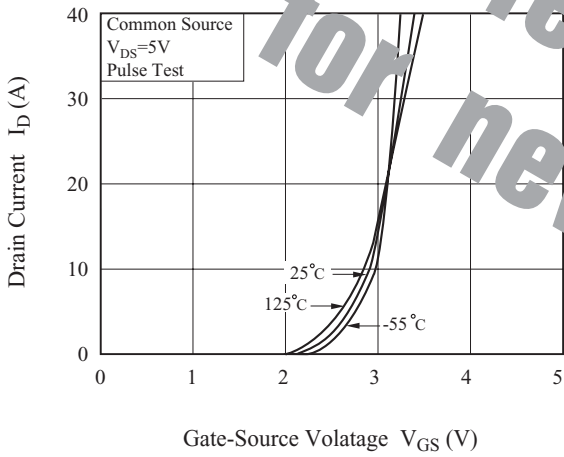


Fig4. $R_{DS(on)} - T_j$

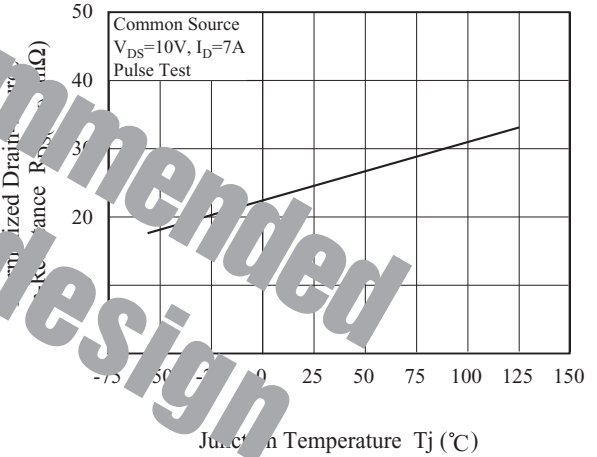


Fig5. $V_{th} - T_j$

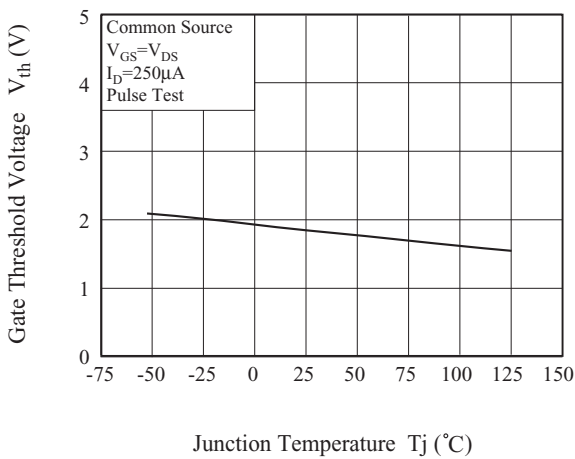
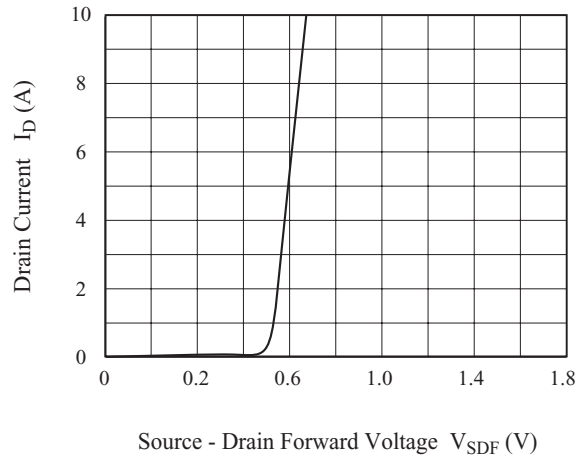


Fig6. $I_S - V_{SDF}$



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Fig7. Transient Thermal Response Curve

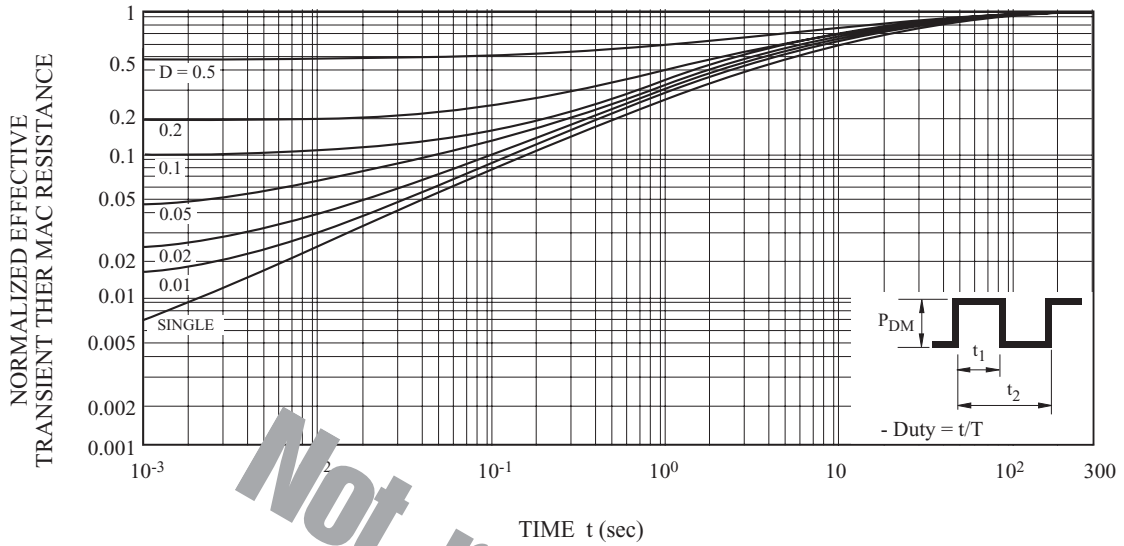
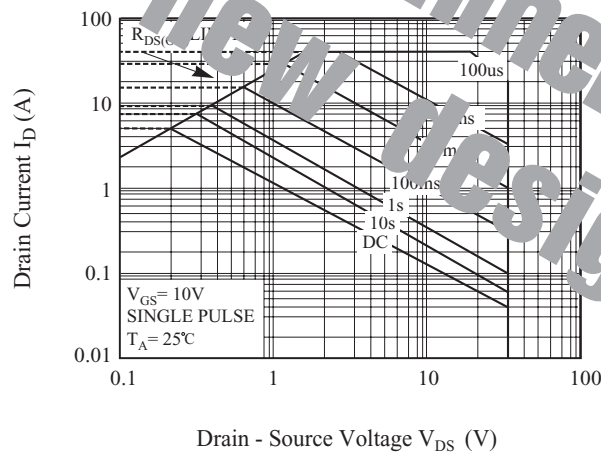


Fig8. Safe Operating Area



Not recommended for new design

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Fig9. Gate Charge Circuit and Wave Form

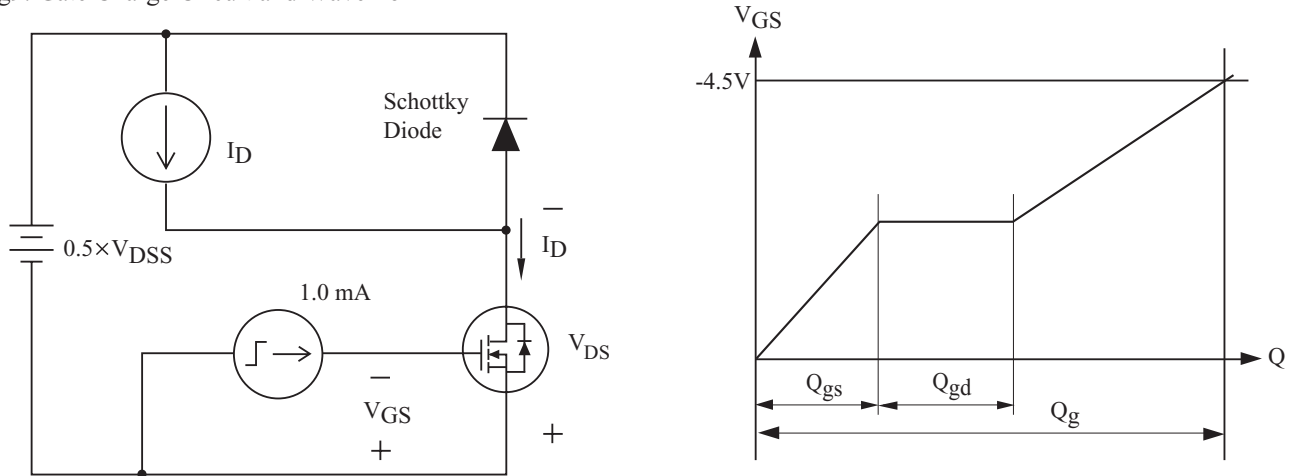


Fig10. Resistive Load Switching

