

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 DC/DC Converter and Battery pack..

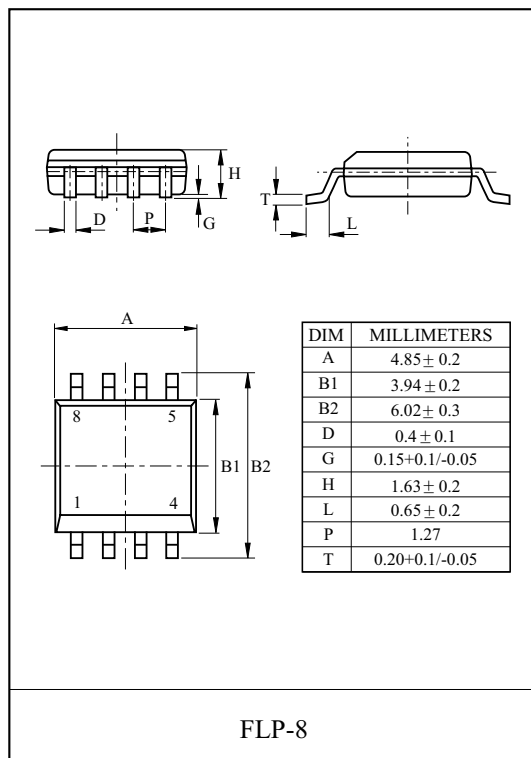
FEATURES

- $V_{DSS}=30V$, $I_D=16A$.
- Drain to Source On Resistance.
 - $R_{DS(ON)}=6.3m$ (Max.) @ $V_{GS}=10V$
 - $R_{DS(ON)}=10.7m$ (Max.) @ $V_{GS}=4.5V$

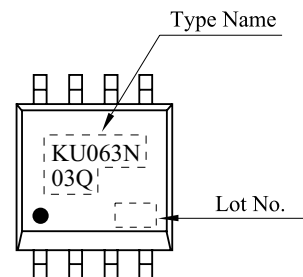
MOSFET Maximum Ratings (Ta=25 Unless otherwise noted)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain to Source Voltage		V_{DSS}	30	V
Gate to Source Voltage		V_{GSS}	± 20	V
Drain Current	DC@Ta=25 (Note 1)	I_D	16	A
	Pulsed	I_{DP}	64	A
Drain Power Dissipation	@Ta=25 (Note 1)	P_D	2.5	W
Maximum Junction Temperature		T_j	150	
Storage Temperature Range		T_{stg}	-55~150	
Thermal Resistance, Junction to Ambient (Note 1)		R_{thJA}	50	/W

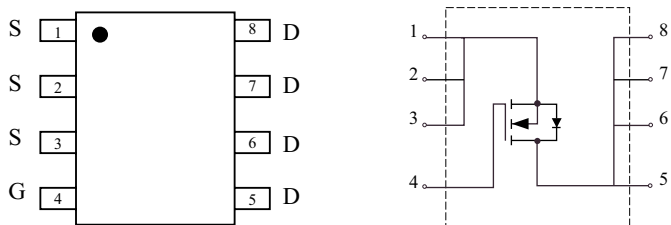
Note1) Surface Mounted on 1 × 1 FR4 Board, t 10sec.



Marking



PIN CONNECTION (TOP VIEW)



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ELECTRICAL CHARACTERISTICS (Ta=25) UNLESS OTHERWISE NOTED

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT		
Static								
Drain to Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250 μA	30	-	-	V		
Drain Cut-off Current	I _{DSS}	V _{GS} =0V, V _{DS} =30V	-	-	1	μA		
Gate to Source Leakage Current	I _{GSS}	V _{GS} = ± 20V, V _{DS} =0V	-	-	± 100	nA		
Gate to Source Threshold Voltage	V _{th}	V _{DS} =V _{GS} , I _D =250 μA	1.0	-	3.0	V		
Drain to Source On Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =16A (Note2)	-	5.3	6.3	m		
		V _{GS} =4.5V, I _D =13A (Note2)	-	8.9	10.7			
Forward Transconductance	g _{fs}	V _{DS} =5V, I _D =16A (Note2)	-	52	-	S		
Dynamic								
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHz (Note2)	-	1751	-	pF		
Output Capacitance	C _{oss}		-	350	-			
Reverse Transfer Capacitance	C _{rss}		-	253	-			
Gate Resistance	R _g	f=1MHz	-	2.8	-			
Total Gate Charge	V _{GS} =10V	V _{DS} =15V, V _{GS} =10V, I _D =16A (Note2)	-	39.7	-	nC		
	V _{GS} =4.5V		-	20.1	-			
Gate to Source Charge	Q _{gs}		-	6.8	-			
Gate to Drain Charge	Q _{gd}		-	8.2	-			
Turn-On Delay Time	t _{d(on)}		V _{DS} =15V, V _{GS} =10V I _D =16A, R _G =1.6 (Note2)	-	10.1		-	ns
Turn-On Rise Time	t _r			-	10.5		-	
Turn-Off Delay Time	t _{d(off)}	-		31.2	-			
Turn-Off Fall Time	t _f	-		11.0	-			
Source to Drain Diode Ratings								
Source to Drain Forward Voltage	V _{SD}	V _{GS} =0V, I _S =16A (Note2)	-	0.8	1.2	V		
Reverse Recovery Time	t _{rr}	I _S =16A, dI/dt=100A/μs	-	22.5	-	ns		
Reverse Recovered Charge	Q _{rr}	I _S =16A, dI/dt=100A/μs	-	9.5	-	nC		
Note2) Pulse Test : Pulse Width 300μs, Duty Cycle 2%								

Fig1. $I_D - V_{DS}$

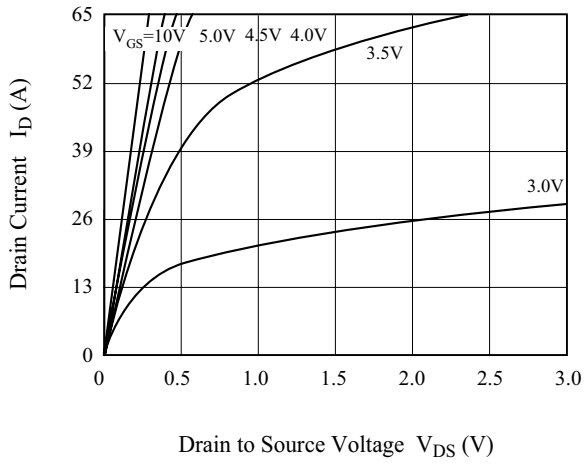


Fig2. $R_{DS(on)} - I_D$

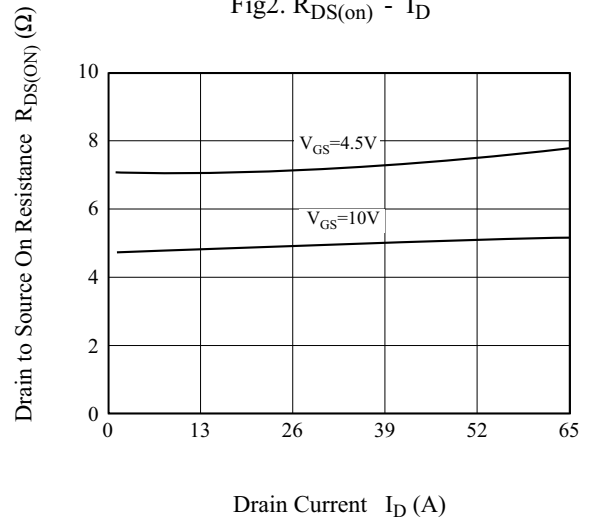


Fig3. $I_D - V_{GS}$

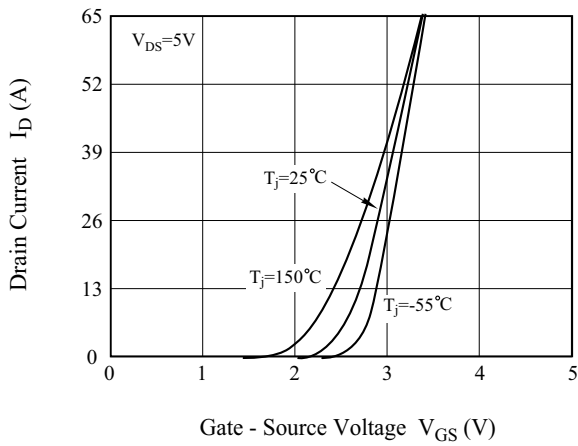


Fig4. $R_{DS(ON)} - T_j$

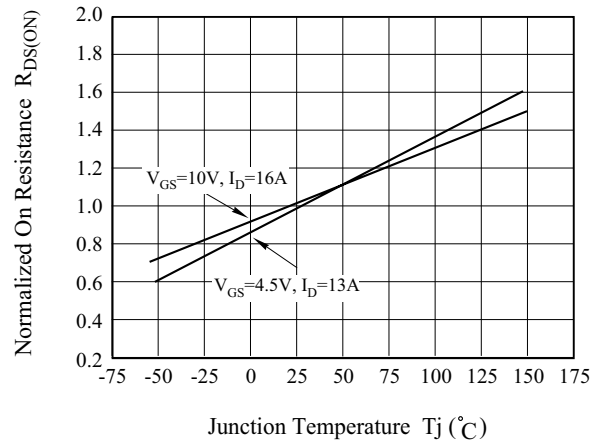


Fig5. $V_{th} - T_j$

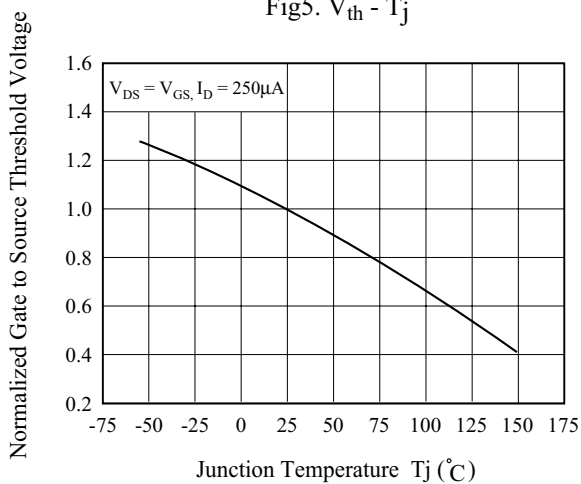
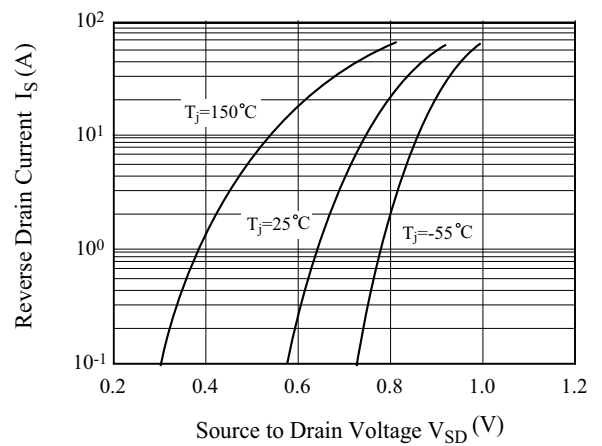


Fig6. $I_S - V_{SD}$



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