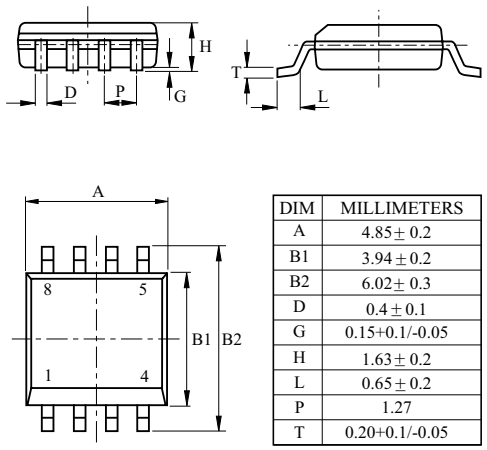
GENERAL DESCRIPTION

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 DC/DC Converter and Battery pack..



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

FEATURES

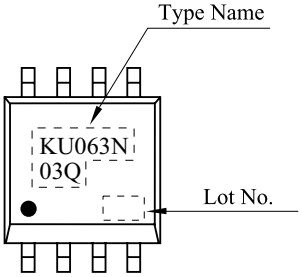
· V_{DSS}=30V, I_D=16A.
· Drain to Source On Resistance.
$R_{DS(ON)}$=6.3mΩ(Max.) @ V_{GS}=10V
$R_{DS(ON)}$=10.7mΩ(Max.) @ V_{GS}=4.5V

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

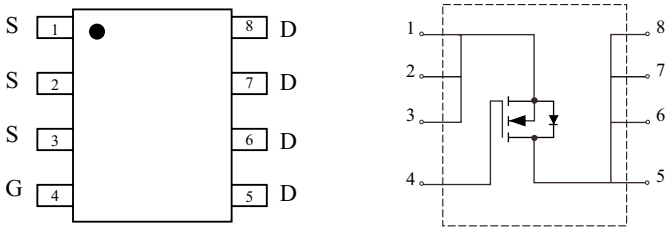
CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain to Source Voltage		V_{DSS}	30	V
Gate to Source Voltage		V_{GSS}	±20	V
Drain Current	DC@Ta=25℃ (Note 1)	I_D	16	A
	Pulsed	I_{DP}	64	A
Drain Power Dissipation	@Ta=25℃ (Note 1)	P_D	2.5	W
Maximum Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55~150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



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	mΩ
			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 Capaclitance		C_{iss}	V_{DS}=15V, V_{GS}=0V, f=1MHz (Note2)	-	1751	-	pF
Ouput Capacitance		C_{oss}		-	350	-	
Reverse Transfer Capacitance		C_{rss}		-	253	-	
Gate Resistance		R_g	f=1MHz	-	2.8	-	Ω
Total Gate Charge	V_{GS}=10V	Q_g	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=1.6Ω (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}

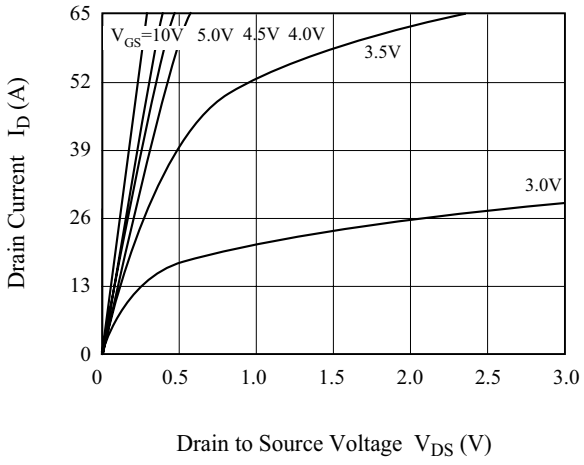


Fig2. $R_{DS(on)}$ - I_D

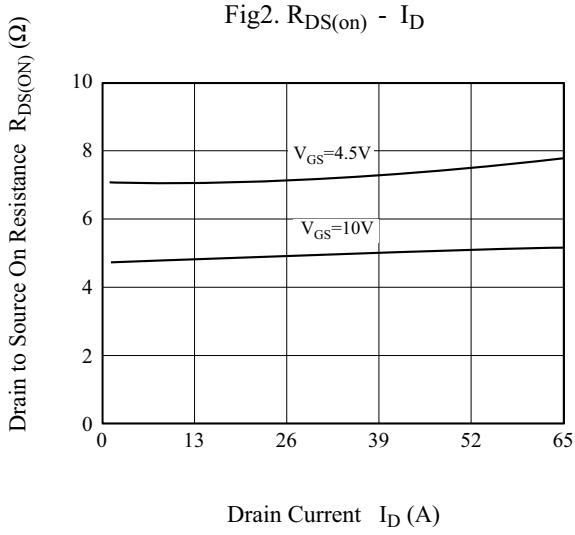


Fig3. I_D - V_{GS}

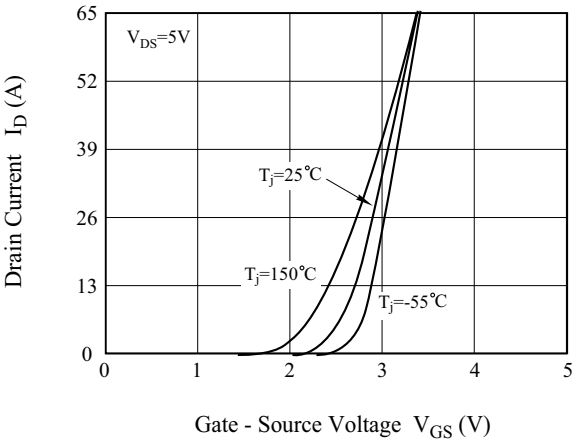


Fig4. $R_{DS(ON)}$ - T_j

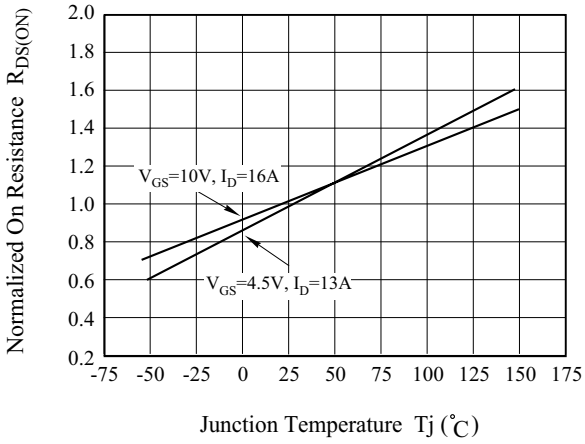


Fig5. V_{th} - T_j

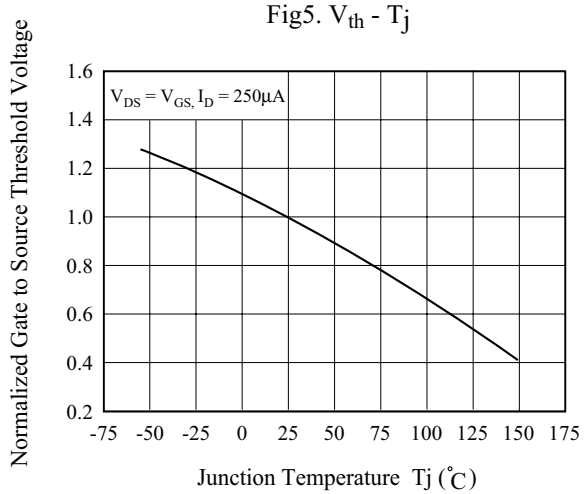


Fig6. I_S - V_{SD}

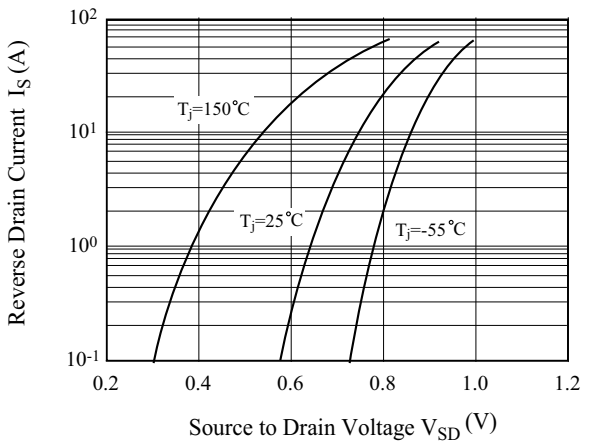


Fig7. $R_{DS(ON)}$ - V_{GS}

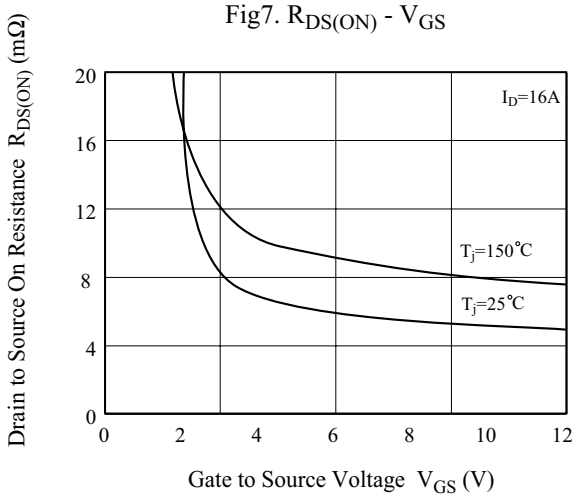


Fig8. C - V_{DS}

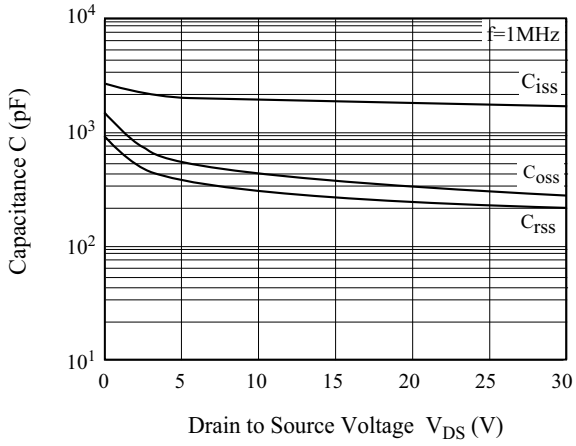


Fig9. Q_g - V_{GS}

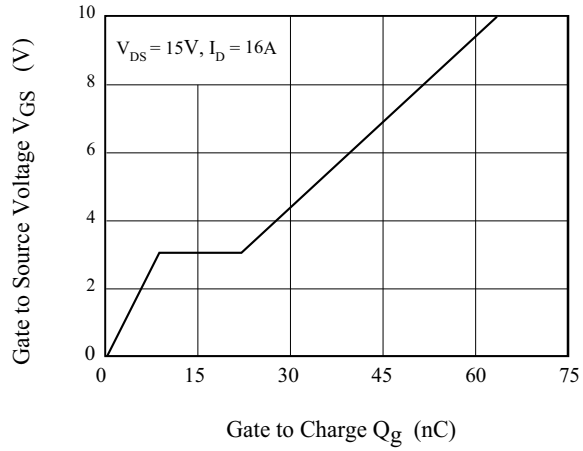


Fig10. Safe Operation Area

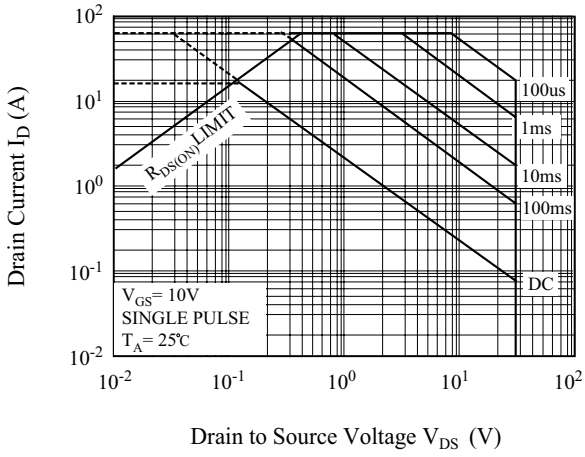


Fig11. Transient Thermal Response Curve