

General Description

It s Mainly Suitable for Load Switching Cell Phones, Battery Powered Systems and Level-Shifter.

FEATURES

- $V_{DS} = -20V$, $I_D = -0.3A$
- Drain-Source ON Resistance
 - : $R_{DS(ON)} = 1.2 \Omega$ @ $V_{GS} = -4.5V$
 - : $R_{DS(ON)} = 1.6 \Omega$ @ $V_{GS} = -2.5V$
 - : $R_{DS(ON)} = 2.7 \Omega$ @ $V_{GS} = -1.8V$

ORDERING INFORMATION

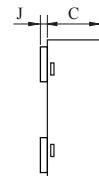
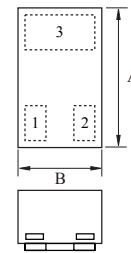
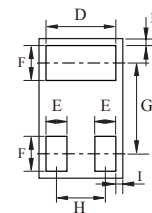
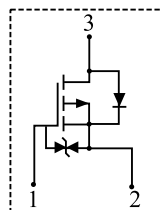
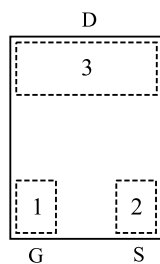
FULL NAME	PACKAGE	SUFFIX
KML0D3P20UL_RTL/H	ULP-3	-
KML0D3P20UL_RTR/HP	ULP-3(1)	Added code "P" to ULP-3(1)

MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	P-Ch	UNIT
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 6	V
Drain Current	DC @ $T_A = 25^\circ C$	-300	mA
	DC @ $T_A = 85^\circ C$		
	Pulsed	-1200	
Drain Power Dissipation	P_D	284	mW
Maximum Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55 ~ 150	℃
Thermal Resistance, Junction to Ambient	R_{thJA}	440	℃/W

Note 1) *Surface Mounted on FR4 Board, $t \leq 5sec$

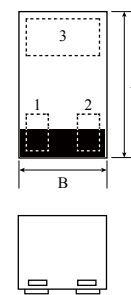
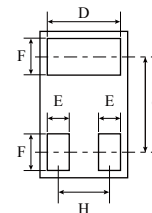
PIN CONNECTION (TOP VIEW)



1. Gate
2. Source
3. Drain

DIM	MILLIMETERS
A	1.0±0.05
B	0.6±0.05
C	0.38 ^{+0.02} _{-0.03}
D	0.5±0.03
E	0.15±0.03
F	0.25±0.03
G	0.65±0.03
H	0.35±0.03
I	0.05
J	0.05 Max

ULP-3

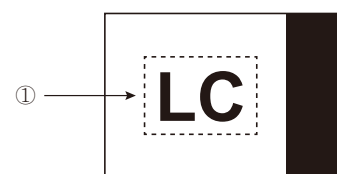


1. Gate
2. Source
3. Drain

DIM	MILLIMETERS
A	1.0±0.05
B	0.6±0.05
C	0.50±0.05
D	0.51±0.04
E	0.16±0.04
F	0.26±0.04
G	0.65 BSC
H	0.35 BSC
J	0.03 Max

ULP-3(1)

Marking



KML0D3P20UL

ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -250 \mu A$, $V_{GS} = 0V$	-20	-	-	V
Drain Cut-off Current	I_{DSS}	$V_{GS} = 0V$, $V_{DS} = -16V$	-	-0.3	-100	nA
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 4.5V$, $V_{DS} = 0V$	-	± 1.0	± 2.0	μA
Gate Threshold Voltage	V_{th}	$V_{DS} = V_{GS}$, $I_D = -250 \mu A$	-0.45	-	-1.0	V
Drain-Source ON Resistance	$R_{DS(ON)}^*$	$V_{GS} = -4.5V$, $I_D = -300mA$	-	0.80	1.20	Ω
		$V_{GS} = -2.5V$, $I_D = -250mA$	-	1.20	1.60	
		$V_{GS} = -1.8V$, $I_D = -150mA$	-	1.80	2.70	
Forward Transconductance	g_{fs}^*	$V_{DS} = -10V$, $I_D = -300mA$	-	0.4	-	S
Source-Drain Diode Forward Voltage	V_{SD}^*	$I_S = -150mA$, $V_{GS} = 0V$	-	-0.8	-1.2	V
Dynamic						
Total Gate Charge	Q_g^*	$V_{DS} = -10V$, $I_D = -250mA$, $V_{GS} = -4.5V$	-	1500	-	pC
Gate-Source Charge	Q_{gs}^*		-	150	-	
Gate-Drain Charge	Q_{gd}^*		-	450	-	
Turn-on Delay time	$t_{d(on)}^*$	$V_{DD} = -10V$, $V_{GS} = -4.5V$ $I_D = -200mA$, $R_G = 10 \Omega$	-	5	-	ns
Turn-off Delay time	$t_{d(off)}^*$		-	35	-	ns

Note 2) *Pulse test : Pulse width $\leq 300 \mu s$, Duty Cycle $\leq 2\%$.

Fig 1. $I_D - V_{DS}$

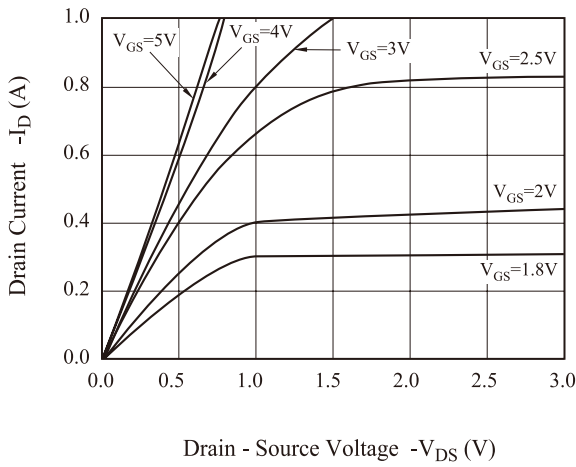


Fig 2. $R_{DS(on)} - I_D$

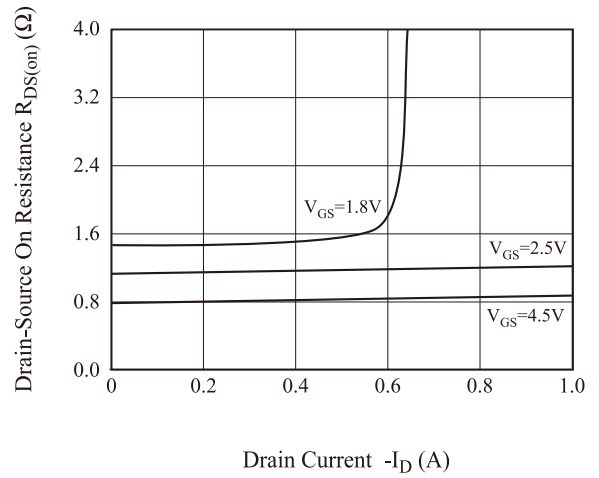


Fig 3. $I_D - V_{GS}$

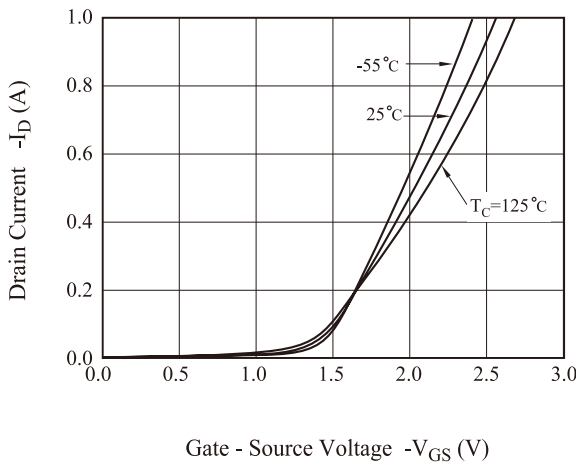


Fig 4. $R_{DS(on)} - T_j$

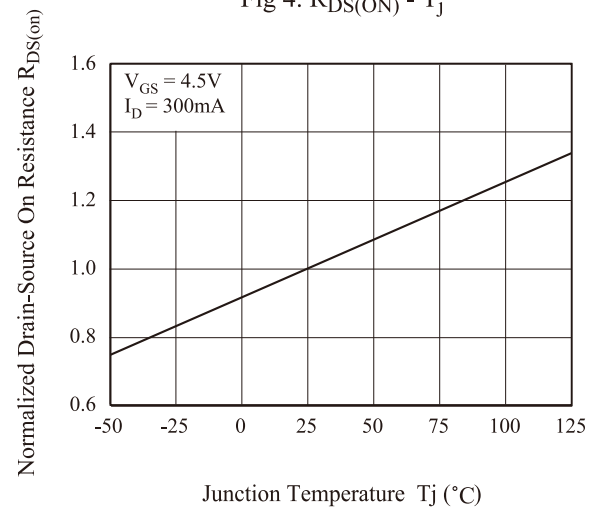


Fig 5. $V_{th} - T_j$

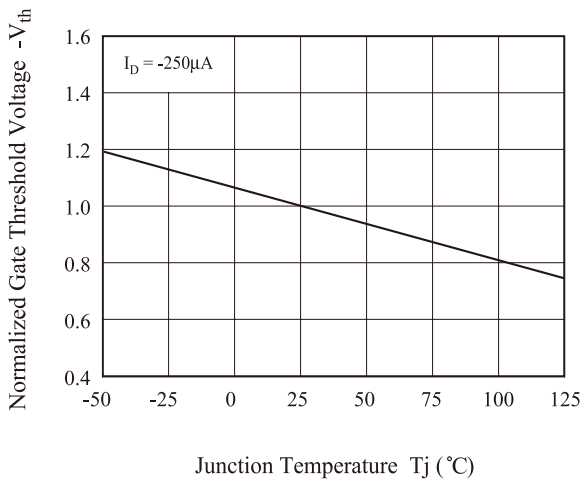


Fig 6. $I_{DR} - V_{SDF}$

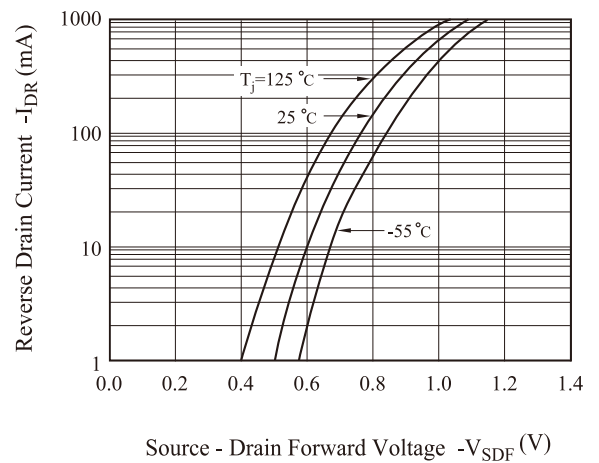


Fig 7. $V_{GS} - Q_g$

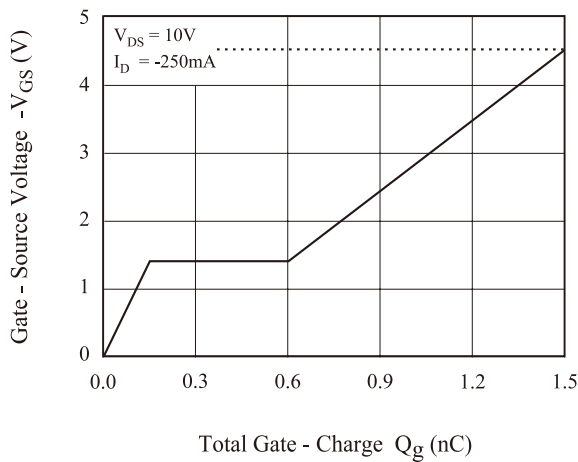


Fig 8. $C - V_{DS}$

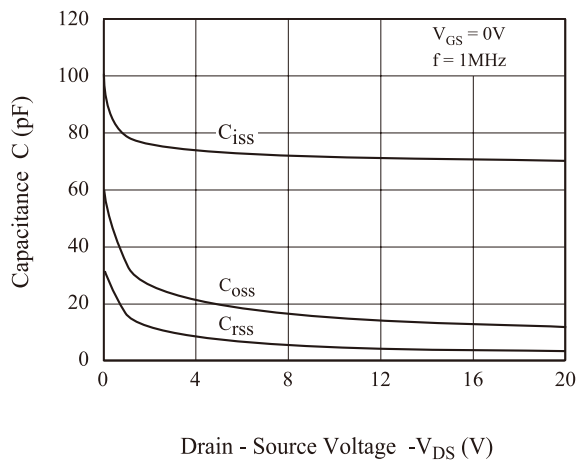


Fig 9. Transient Thermal Response Curve

