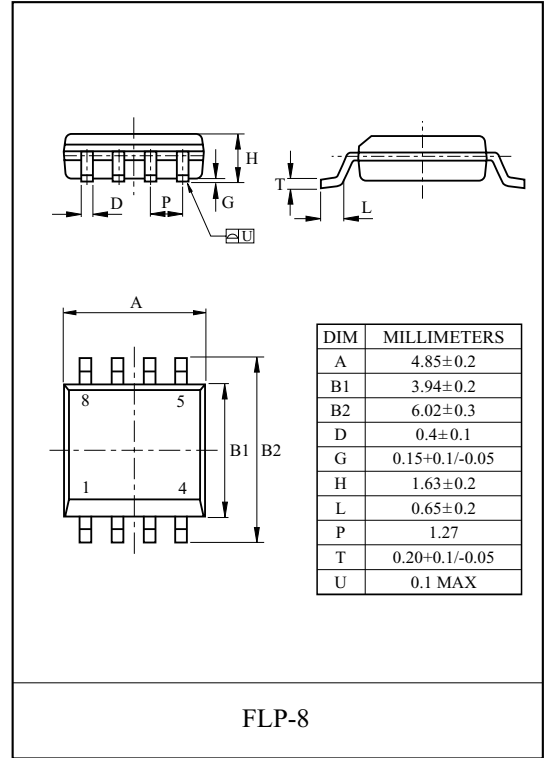


#### General Description

Battery Packs and Battery-powered portable equipment applications. It is mainly suitable for use as a load switch in battery powered applications and protection in battery packs.

#### FEATURES

- $V_{DSS} = -20V$ ,  $I_D = -6.5A$ .
- Drain-Source ON Resistance.
  - :  $R_{DS(ON)} = 35m$  (Max.) @  $V_{GS} = -4.5V$ .
  - :  $R_{DS(ON)} = 60m$  (Max.) @  $V_{GS} = -2.5V$ .

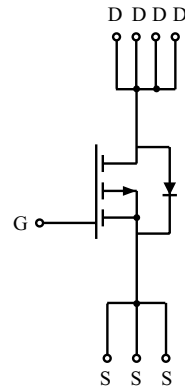
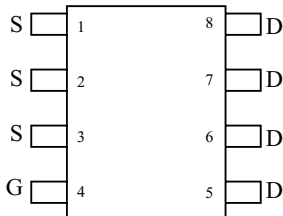


#### MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		$V_{DSS}$	-20	V
Gate-Source Voltage		$V_{GSS}$	± 12	V
Drain Current	DC	$I_D^*$	-6.5	A
	Pulsed (Note2)	$I_{DP}$	-32	
Drain Power Dissipation	Ta=25	$P_D^*$	2.5	W
	Ta=100		1.0	
Maximum Junction Temperature		$T_j$	150	
Storage Temperature Range		$T_{stg}$	-55 150	
Thermal Resistance, Junction to Ambient		$R_{thJA}^*$	50	/W

\* : Surface Mounted on 1 "x 1 " Board, t = 10sec.

#### PIN CONNECTION (TOP VIEW)



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## ELECTRICAL CHARACTERISTICS (Ta=25 °C)

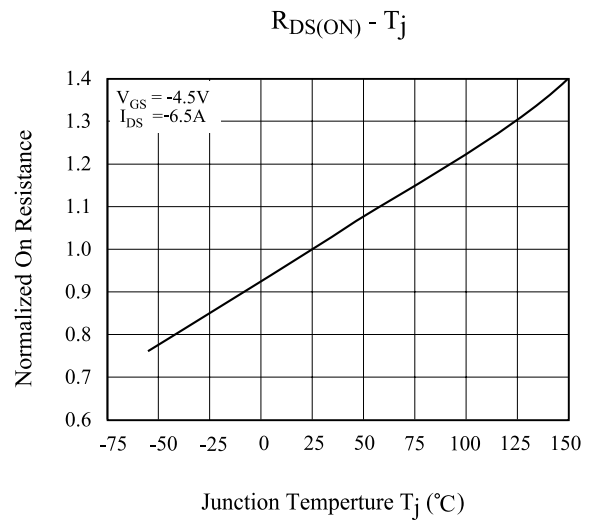
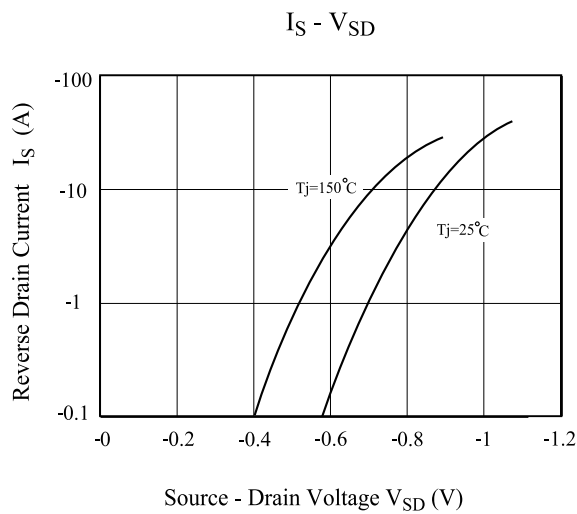
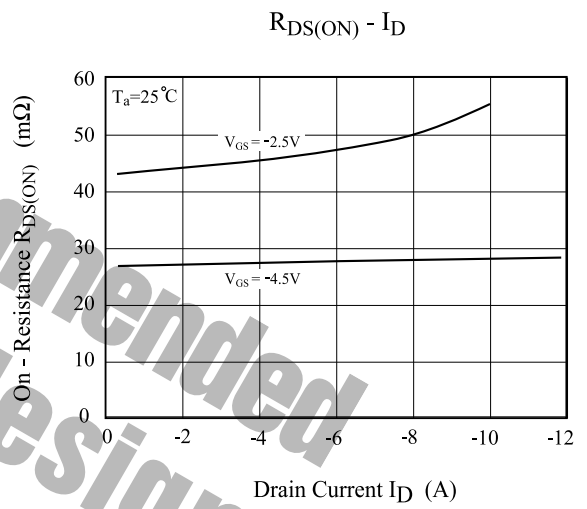
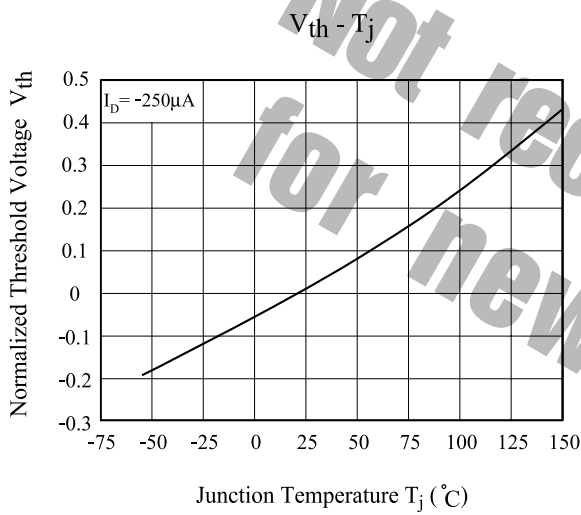
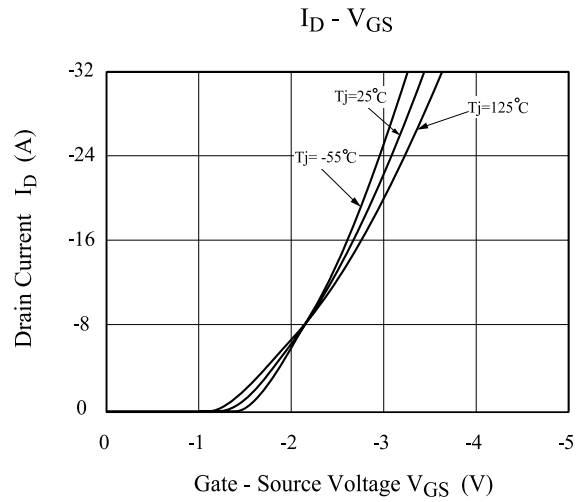
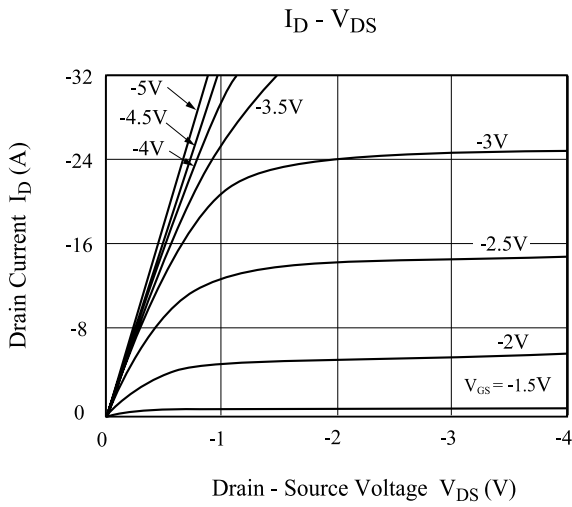
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
<b>Static</b>							
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D = -250 \mu A, V_{GS} = 0V,$	-20	-	-	V	
Drain Cut-off Current	$I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0V,$	-	-	-1	$\mu A$	
Gate Threshold Voltage	$V_{th}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-0.6	-	-	V	
Gate Leakage Current	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$	-	-	$\pm 100$	nA	
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -6.5A$ (Note 2)	-	27	35	m	
		$V_{GS} = -2.5V, I_D = -5.0A$ (Note 2)	-	46	60		
<b>Dynamic</b> <small>(Note 3)</small>							
Total Gate Charge	$Q_g$	$V_{DS} = -10V, I_D = -6.5A$  (Fig.1)	-	13.6	-	nC	
Gate-Source Charge	$Q_{gs}$		$V_{GS} = -4.5V$	-	2.3		-
Gate-Drain Charge	$Q_{gd}$			-	5.5		-
Turn-on Delay time	$t_{d(on)}$	$V_{DD} = -10V,$ $R_L = 1.5 \Omega, R_G = 6 \Omega$  (Fig.2)	-	10	-	ns	
Turn-on Rise time	$t_r$		-	35	-		
Turn-off Delay time	$t_{d(off)}$		-	38	-		
Turn-off Fall time	$t_f$		-	50	-		
<b>Source-Drain Diode Ratings</b>							
Continuous Source Current	$I_S$	$V_{GS} < V_{th}$ (Note 1)	-	-	-1.7	A	
Diode Forward Voltage	$V_{SD}$	$I_S = -6.5A, V_{GS} = 0V$ (Note 2)	-	-	-1.5	V	

Note 1) Based on thermal dissipation from junction to ambient while mounted on a 1"×1" PCB Board.

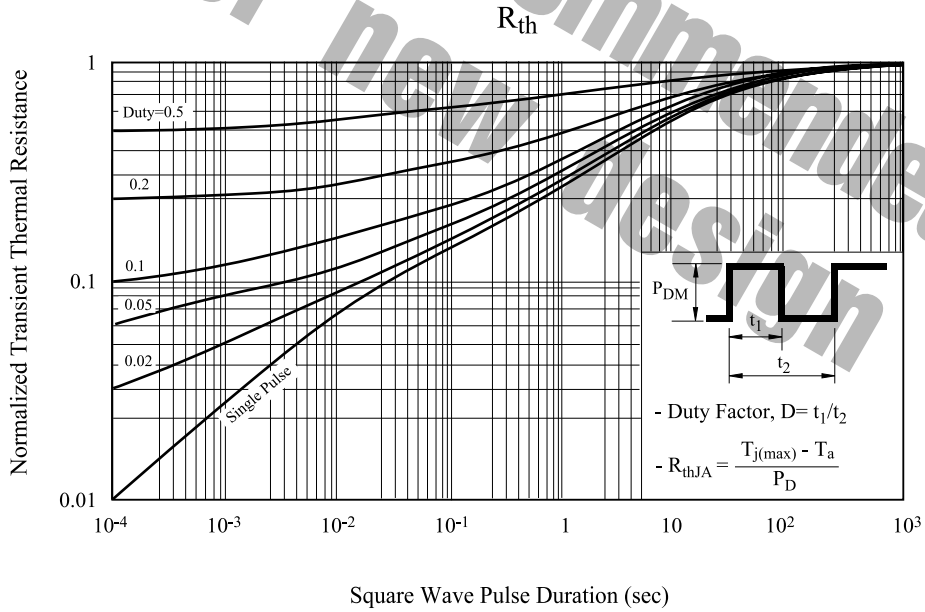
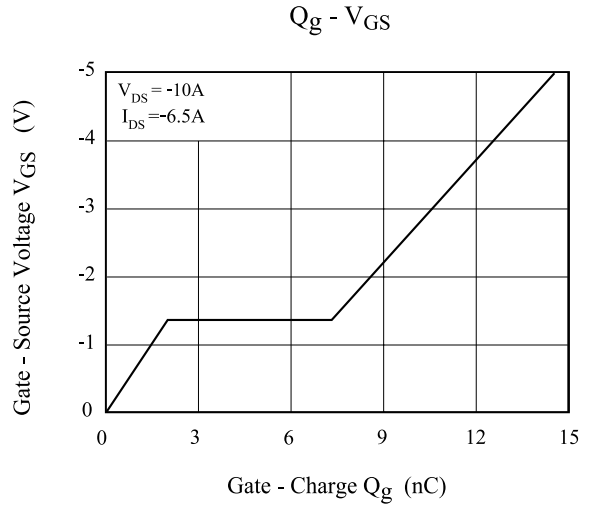
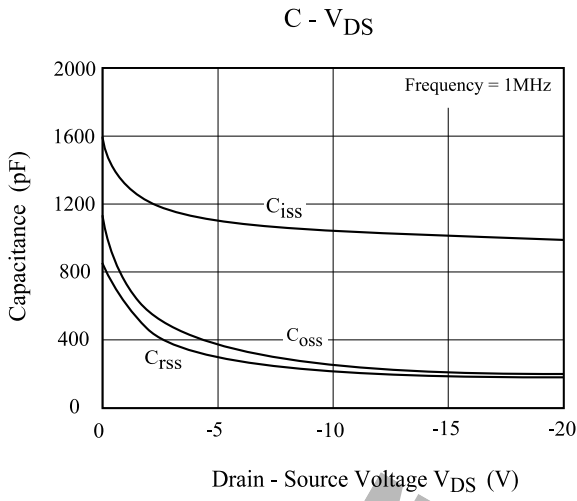
Note 2) Pulse test : Pulse width 300 $\mu s$ .

Note 3) Guaranteed by design, not subject to production testing.

# KMA6D5P20Q



# KMA6D5P20Q



# KMA6D5P20Q

Fig. 1 Gate Charge

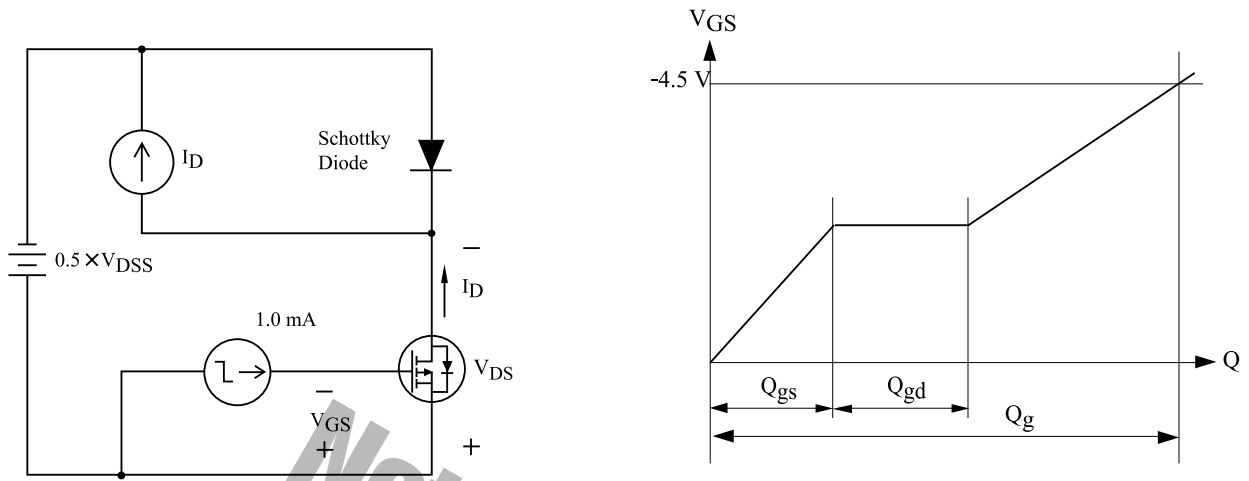


Fig. 2 Resistive Load Switching

