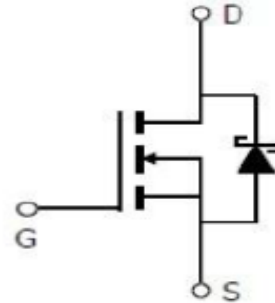
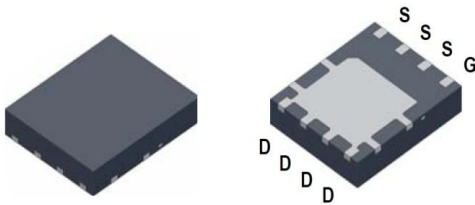


# PK6B0SA

## N-Channel Enhancement Mode MOSFET

### PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
30V	5mΩ @ $V_{GS} = 10V$	56A



PDFN 5X6P

### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS	UNITS	
Drain-Source Voltage	$V_{DS}$	30	V	
Gate-Source Voltage	$V_{GS}$	±20	V	
Continuous Drain Current <sup>3</sup>	$I_D$	$T_C = 25\text{ °C}$	56	
		$T_C = 100\text{ °C}$	35	
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	100	A	
Continuous Drain Current	$I_D$	$T_A = 25\text{ °C}$		20
		$T_A = 70\text{ °C}$		16
Avalanche Current	$I_{AS}$	26		
Avalanche Energy	$L = 0.1\text{mH}$	$E_{AS}$	33.8	mJ
Power Dissipation	$P_D$	$T_C = 25\text{ °C}$	31	W
		$T_C = 100\text{ °C}$	12	
Power Dissipation	$P_D$	$T_A = 25\text{ °C}$	4	W
		$T_A = 70\text{ °C}$	2.6	
Operating Junction & Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	°C	

### THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient <sup>2</sup>	$R_{\theta JA}$		30	°C / W
Junction-to-Ambient <sup>2</sup>	$R_{\theta JA}$		58	
Junction-to-Case	$R_{\theta JC}$		4	

<sup>1</sup>Pulse width limited by maximum junction temperature.

<sup>2</sup>The value of  $R_{\theta JA}$  is measured with the device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with  $T_A = 25\text{ °C}$ .

<sup>3</sup>Package limitation current is 47A.

<sup>4</sup>The Power dissipation is based on  $R_{\theta JA}$   $t \leq 10\text{ s}$  value

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## N-Channel Enhancement Mode MOSFET

### ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 1mA	30			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1.35	1.7	2.3	
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 24V, V <sub>GS</sub> = 0V			0.5	mA
		V <sub>DS</sub> = 20V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 55 °C			5	
Drain-Source On-State Resistance <sup>1</sup>	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 16A		5.3	7	mΩ
		V <sub>GS</sub> = 10V, I <sub>D</sub> = 19A		3.7	5	
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 19A		67		S
<b>DYNAMIC</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 15V, f = 1MHz		1165		pF
Output Capacitance	C <sub>oss</sub>			227		
Reverse Transfer Capacitance	C <sub>rss</sub>			146		
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 0V, f = 1MHz		2.6		Ω
Total Gate Charge <sup>2</sup>	Q <sub>g</sub>	V <sub>GS</sub> = 10V	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 19A	25		nC
		V <sub>GS</sub> = 4.5V		13		
Gate-Source Charge <sup>2</sup>	Q <sub>gs</sub>	3				
Gate-Drain Charge <sup>2</sup>	Q <sub>gd</sub>	7				
Turn-On Delay Time <sup>2</sup>	t <sub>d(on)</sub>	I <sub>D</sub> ≅ 19A, V <sub>GS</sub> = 10V, R <sub>GEN</sub> = 6Ω		19		nS
Rise Time <sup>2</sup>	t <sub>r</sub>			10		
Turn-Off Delay Time <sup>2</sup>	t <sub>d(off)</sub>		40			
Fall Time <sup>2</sup>	t <sub>f</sub>		12			
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)</b>						
Continuous Current <sup>3</sup>	I <sub>S</sub>				31	A
Forward Voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>F</sub> = 19A, V <sub>GS</sub> = 0V			1	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 19A, di <sub>F</sub> /dt = 100A / μS		7.3		nS
Reverse Recovery Charge	Q <sub>rr</sub>			0.5		nC

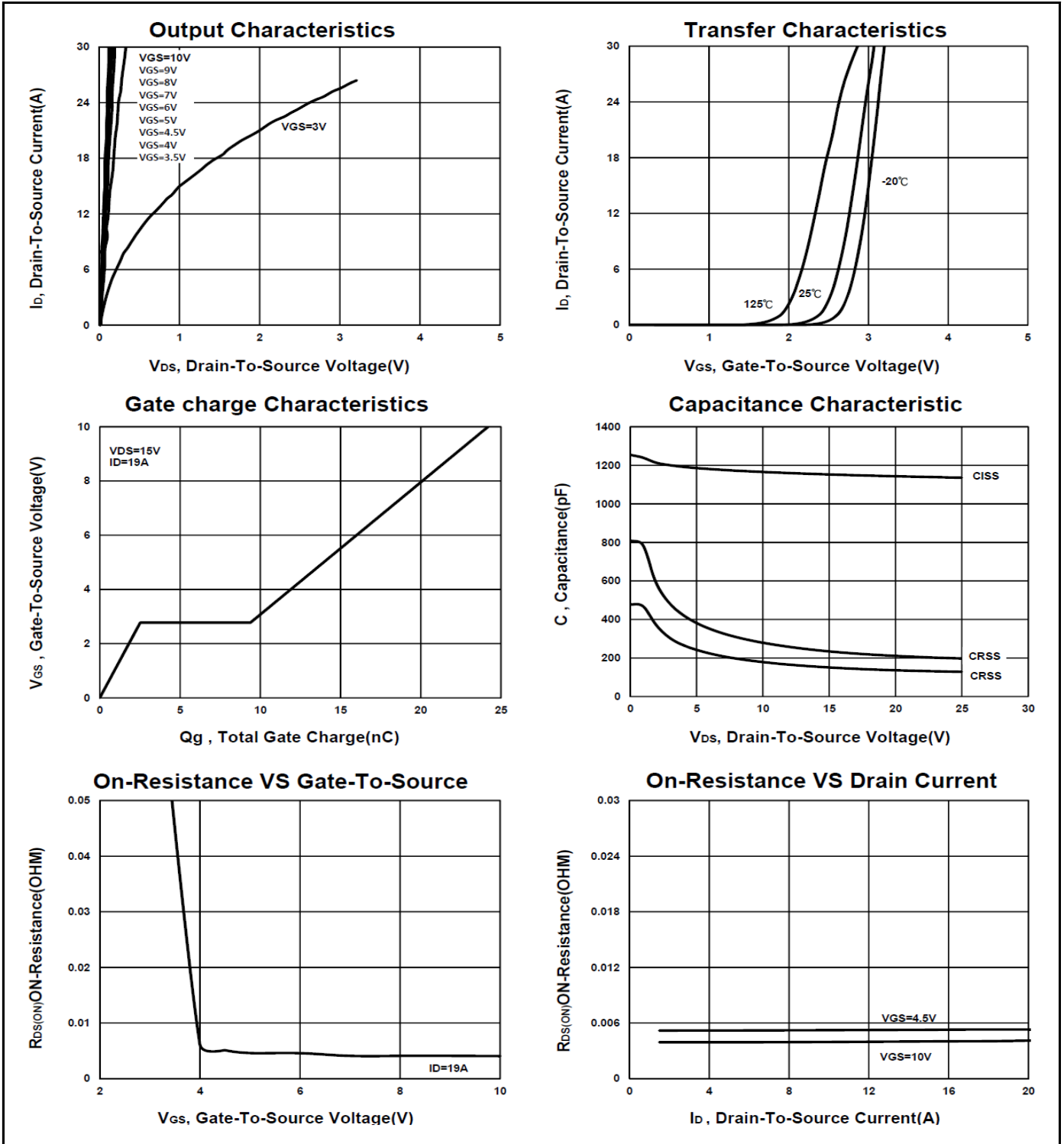
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

<sup>2</sup>Independent of operating temperature.

<sup>3</sup>Package limitation current is 47A.

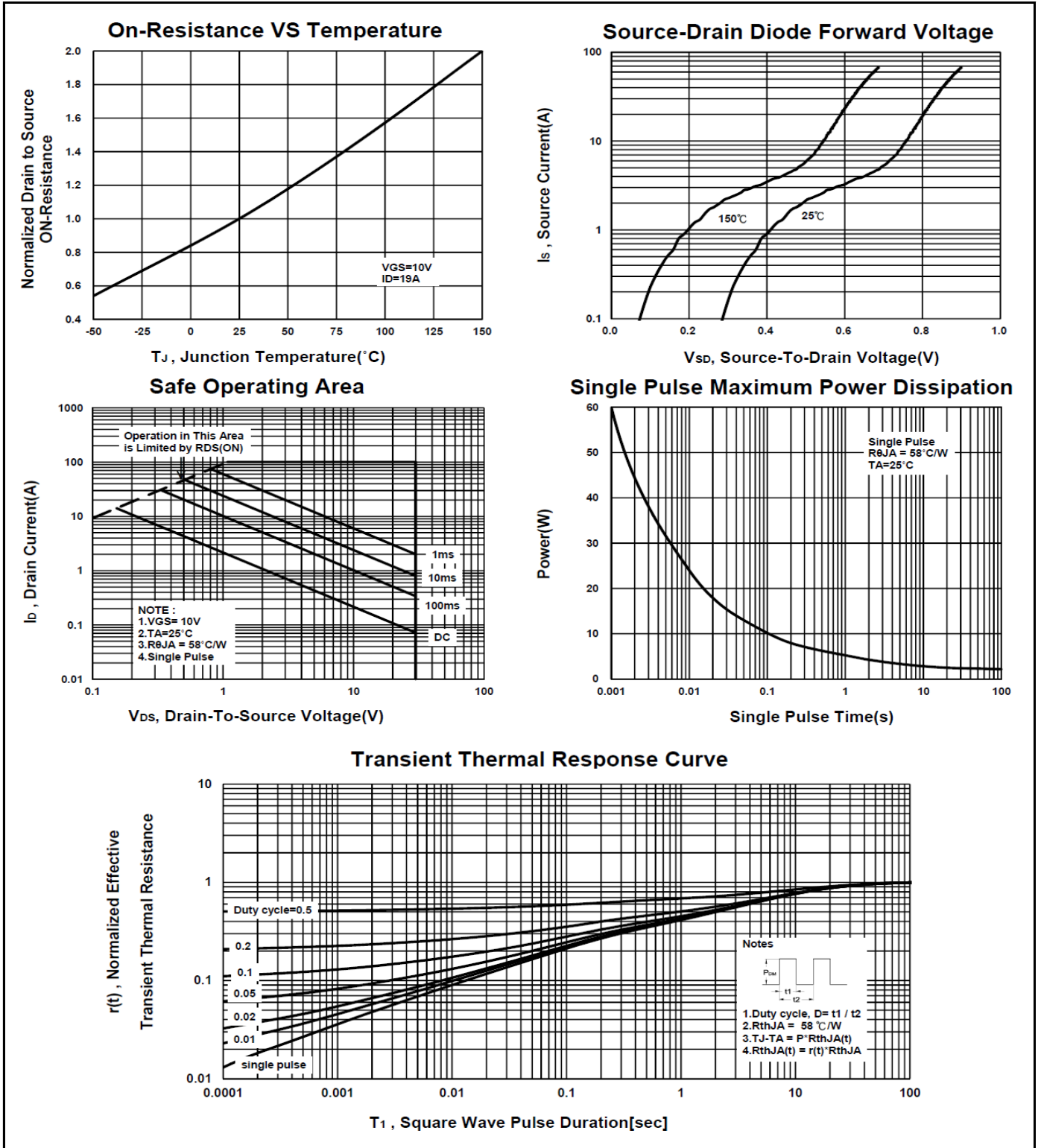
# PK6B0SA

## N-Channel Enhancement Mode MOSFET



# PK6B0SA

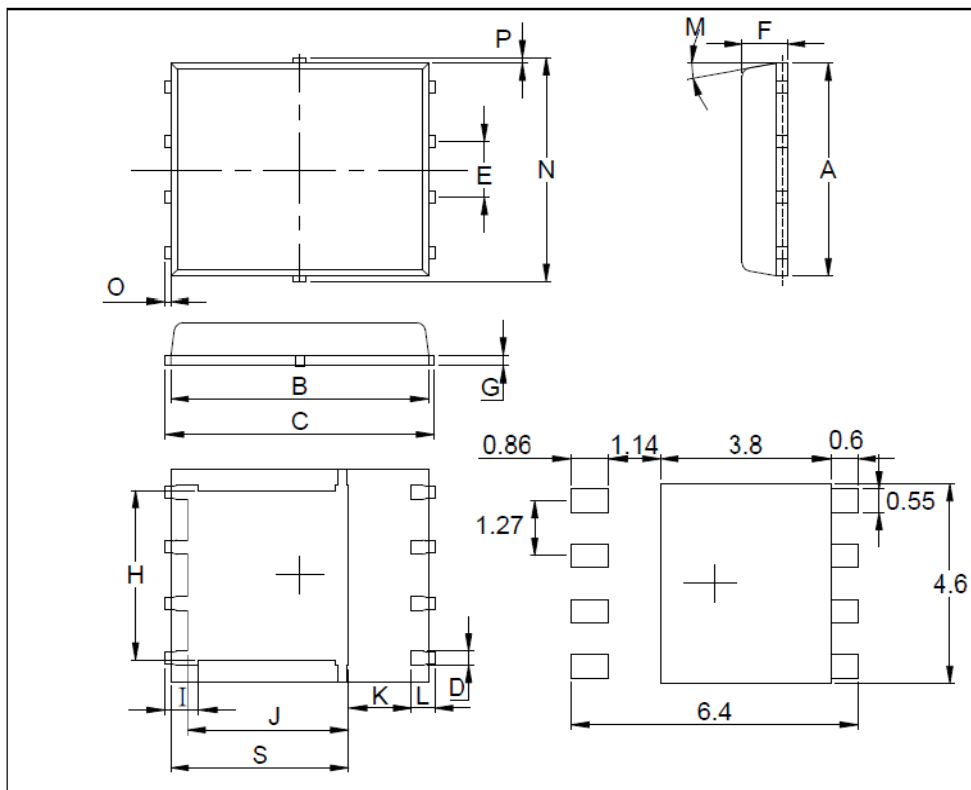
## N-Channel Enhancement Mode MOSFET



**PK6B0SA**  
**N-Channel Enhancement Mode MOSFET**

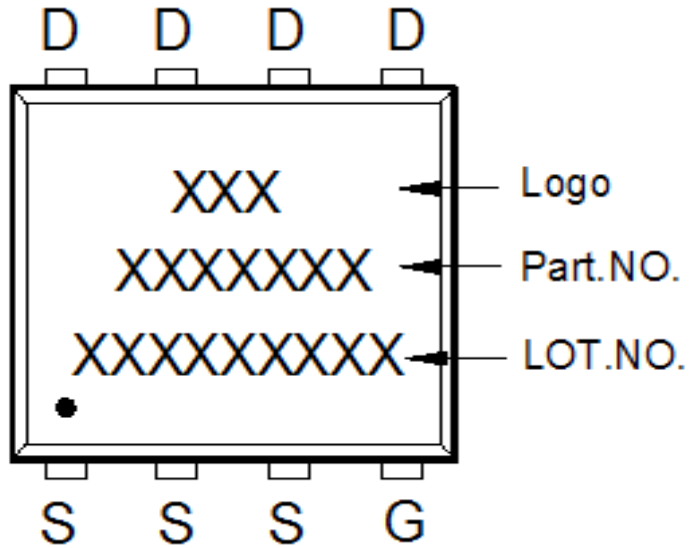
**PDFN 5x6P MECHANICAL DATA**

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.8		5.15	J	3.33		3.78
B	5.44		5.9	K	0.9		
C	5.9		6.35	L	0.35		0.712
D	0.33		0.51	M	0°		12°
E		1.27		N	4.8		5.5
F	0.8		1.25	O	0.05		0.3
G	0.15		0.34	P	0.06		0.2
H	3.61		4.31	S	3.69		4.19
I	0.35		0.71				

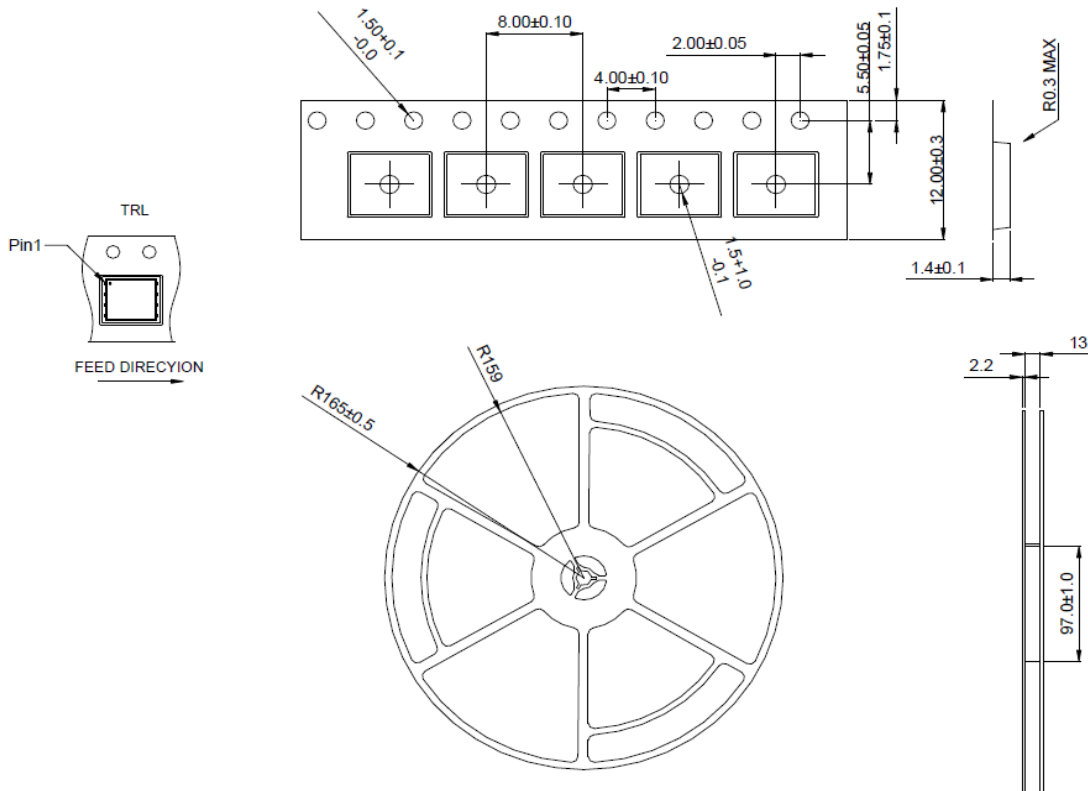


**PK6B0SA**  
**N-Channel Enhancement Mode MOSFET**

**A. Marking Information**



**B. Tape&Reel Information:3000pcs/Reel**

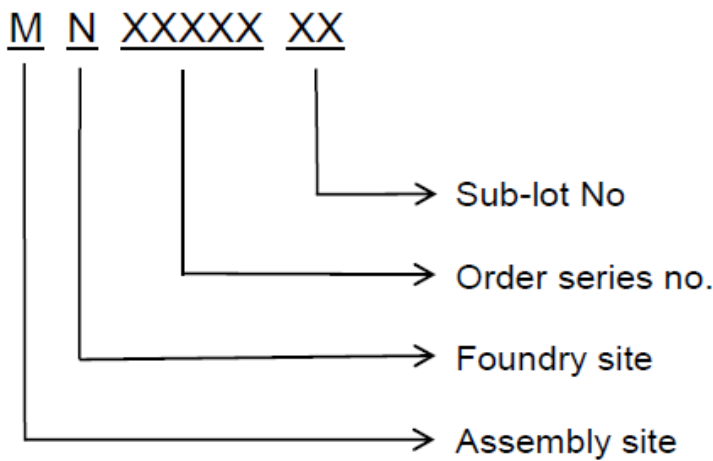


# PK6B0SA

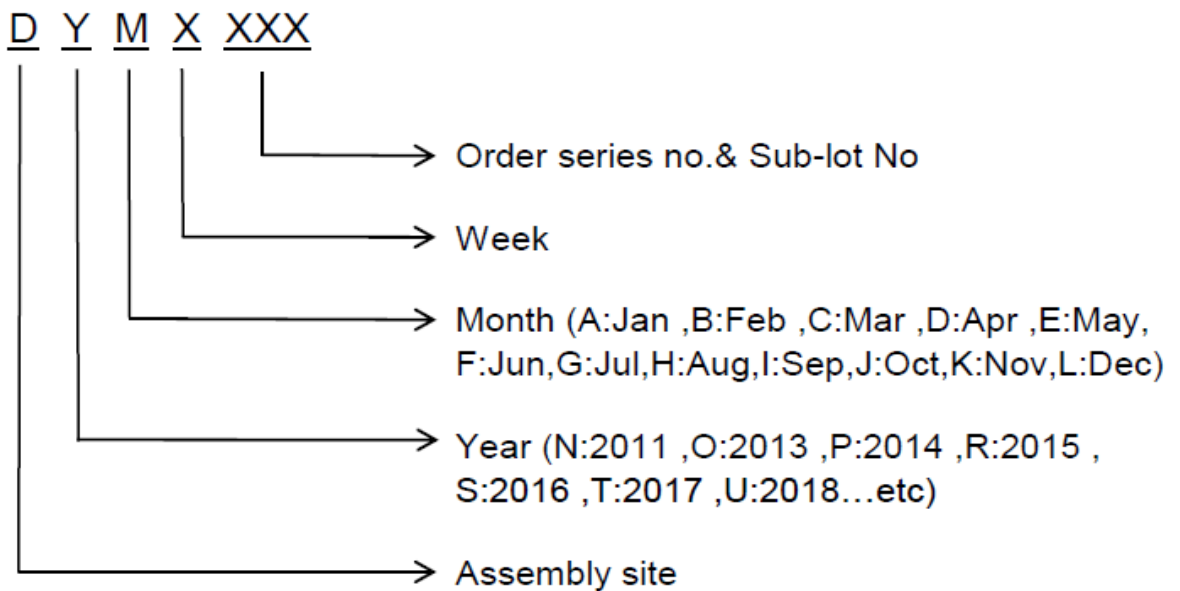
## N-Channel Enhancement Mode MOSFET

### C. Lot No.&Date Code rule

#### 1.Lot No.



#### 2.Date Code





# PK6B0SA

## N-Channel Enhancement Mode MOSFET

### D.Label rule

标签内容(Label content)



1	Label Size	30 * 90 mm
2	Font style	Times New Roman or Arial (或可区分英文"0"和数字"0", "G"和"Q"的字型即可)
3	U-NIKC	Height: 4 mm
4	Package	Height: 2 mm
5	Date	Height: 2 mm Shipping date: YYYY/MM/DD, ex. 2008/09/12
6	Device	Height: 3 mm (Max: 16 Digit)
7	Lot	Height: 3 mm (Max: 9 Digit) Sub lot
8	D/C	Height: 3 mm (Max: 7 Digit)
9	QTY	Height: 3 mm (Max: 6 Digit) Thousand mark is no needed
10	RoHS label	 long axis: 12 mm minor axis: 6 mm bottom color: White Font color: Black Font style: Arial
11	Halogen Free label	 Diameter: 10 mm bottom color: Green Font color: Black Font style: Arial
12	Scan information	Device / Lot / D/C / QTY , Insert " / " between every parts. for example: P3055LDG/G12345601/GGG2301/2000 DPI (Dots per inch): Over 300 dpi Code : Code 128 Height: 6 mm at least