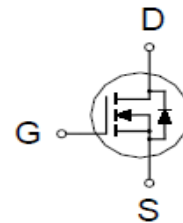
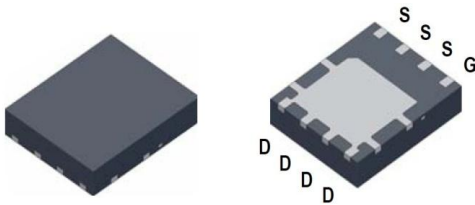


PK6B2BA

N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

| | | |
|---------------|------------------------------|-------|
| $V_{(BR)DSS}$ | $R_{DS(ON)}$ | I_D |
| 30V | 6m Ω @ $V_{GS} = 10V$ | 52A |



PDFN 5X6P

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ 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 ³ | I_D | $T_C = 25\text{ }^\circ\text{C}$ | 52 | |
| | | $T_C = 100\text{ }^\circ\text{C}$ | 33 | |
| Pulsed Drain Current ¹ | I_{DM} | 120 | A | |
| Continuous Drain Current | I_D | $T_A = 25\text{ }^\circ\text{C}$ | | 18 |
| | | $T_A = 70\text{ }^\circ\text{C}$ | | 14 |
| Avalanche Current | I_{AS} | 25 | | |
| Avalanche Energy | $L = 0.1\text{mH}$ | E_{AS} | 31 | mJ |
| Power Dissipation | P_D | $T_C = 25\text{ }^\circ\text{C}$ | 31 | W |
| | | $T_C = 100\text{ }^\circ\text{C}$ | 12 | |
| Power Dissipation ⁴ | P_D | $T_A = 25\text{ }^\circ\text{C}$ | 3.9 | W |
| | | $T_A = 70\text{ }^\circ\text{C}$ | 2.5 | |
| Operating Junction & Storage Temperature Range | T_J, T_{stg} | -55 to 150 | $^\circ\text{C}$ | |

THERMAL RESISTANCE RATINGS

| THERMAL RESISTANCE | SYMBOL | TYPICAL | MAXIMUM | UNITS |
|----------------------------------|-----------------|---------|---------|-----------------------------|
| Junction-to-Ambient ² | $R_{\theta JA}$ | | 32 | $^\circ\text{C} / \text{W}$ |
| Junction-to-Ambient ² | $R_{\theta JA}$ | | 57 | |
| Junction-to-Case | $R_{\theta JC}$ | | 4 | |

¹Pulse width limited by maximum junction temperature.

²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

³Package limitation current is 35A.

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

PK6B2BA

N-Channel Enhancement Mode MOSFET

ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

| PARAMETER | SYMBOL | TEST CONDITIONS | LIMITS | | | UNITS |
|---|----------------------|---|---|------|------|-------|
| | | | MIN | TYP | MAX | |
| STATIC | | | | | | |
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} = 0V, I _D = 250μA | 30 | | | V |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = 250μA | 1.3 | 1.6 | 2.3 | |
| Gate-Body Leakage | I _{GSS} | V _{DS} = 0V, V _{GS} = ±20V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = 24V, V _{GS} = 0V | | | 1 | μA |
| | | V _{DS} = 20V, V _{GS} = 0V, T _J = 55 °C | | | 10 | |
| Drain-Source On-State Resistance ¹ | R _{DS(ON)} | V _{GS} = 4.5V, I _D = 13A | | 5.2 | 8.5 | mΩ |
| | | V _{GS} = 10V, I _D = 13A | | 3.9 | 6 | |
| Forward Transconductance ¹ | g _{fs} | V _{DS} = 5V, I _D = 13A | | 86 | | S |
| DYNAMIC | | | | | | |
| Input Capacitance | C _{iss} | V _{GS} = 0V, V _{DS} = 15V, f = 1MHz | | 979 | | pF |
| Output Capacitance | C _{oss} | | | 192 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 117 | | |
| Gate Resistance | R _g | V _{GS} = 0V, V _{DS} = 0V, f = 1MHz | | 1.85 | | Ω |
| Total Gate Charge ² | Q _g | V _{GS} = 10V | V _{DS} = 15V, V _{GS} = 10V, I _D = 13A | 21 | | nC |
| | | V _{GS} = 4.5V | | 11 | | |
| Gate-Source Charge ² | Q _{gs} | 2.3 | | | | |
| Gate-Drain Charge ² | Q _{gd} | 6 | | | | |
| Turn-On Delay Time ² | t _{d(on)} | I _D ≅ 13A, V _{GS} = 10V, R _{GEN} = 6Ω | | 17.2 | | nS |
| Rise Time ² | t _r | | | 10 | | |
| Turn-Off Delay Time ² | t _{d(off)} | | 36.8 | | | |
| Fall Time ² | t _f | | 10 | | | |
| SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C) | | | | | | |
| Continuous Current | I _S | | | | 25 | A |
| Forward Voltage ¹ | V _{SD} | I _F = 13A, V _{GS} = 0V | | | 1.2 | V |
| Reverse Recovery Time | t _{rr} | I _F = 13A, di _F /dt = 100A / μS | | 11.5 | | nS |
| Reverse Recovery Charge | Q _{rr} | | | 2 | | nC |

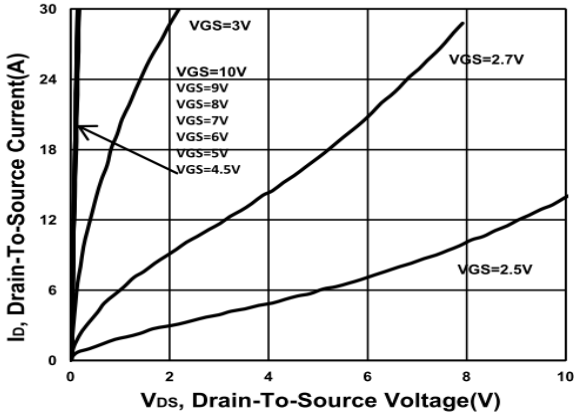
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

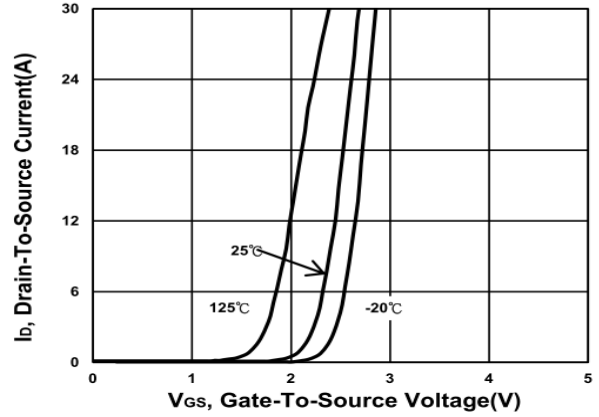
PK6B2BA

N-Channel Enhancement Mode MOSFET

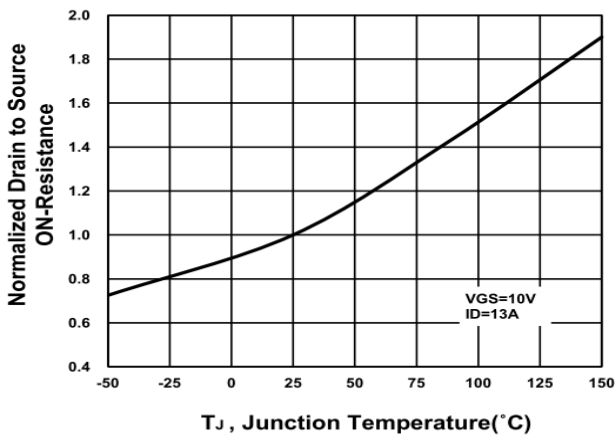
Output Characteristics



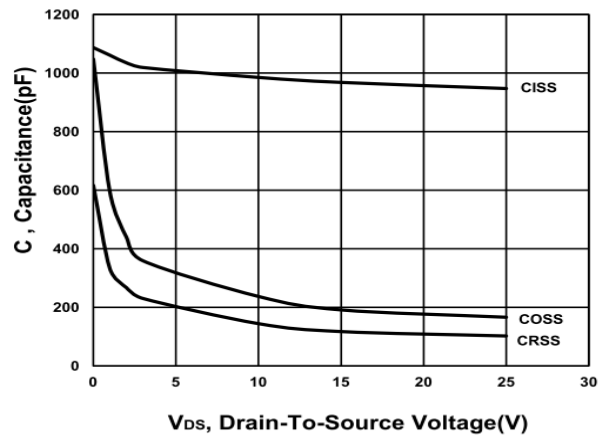
Transfer Characteristics



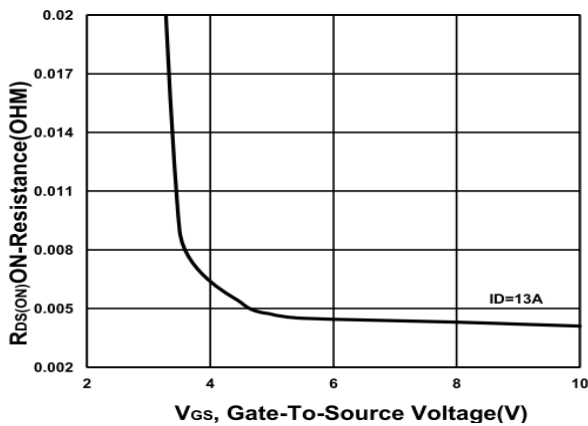
On-Resistance VS Temperature



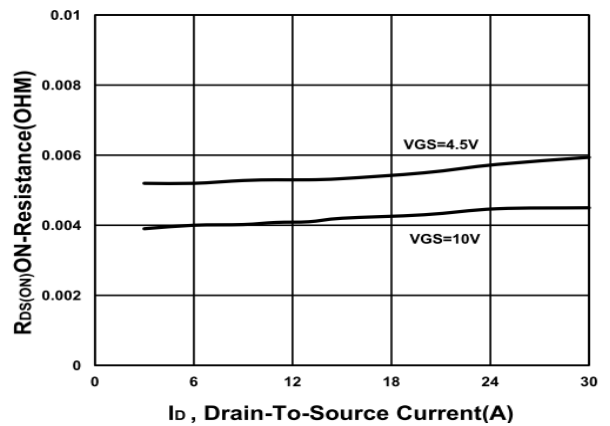
Capacitance Characteristic



On-Resistance VS Gate-To-Source

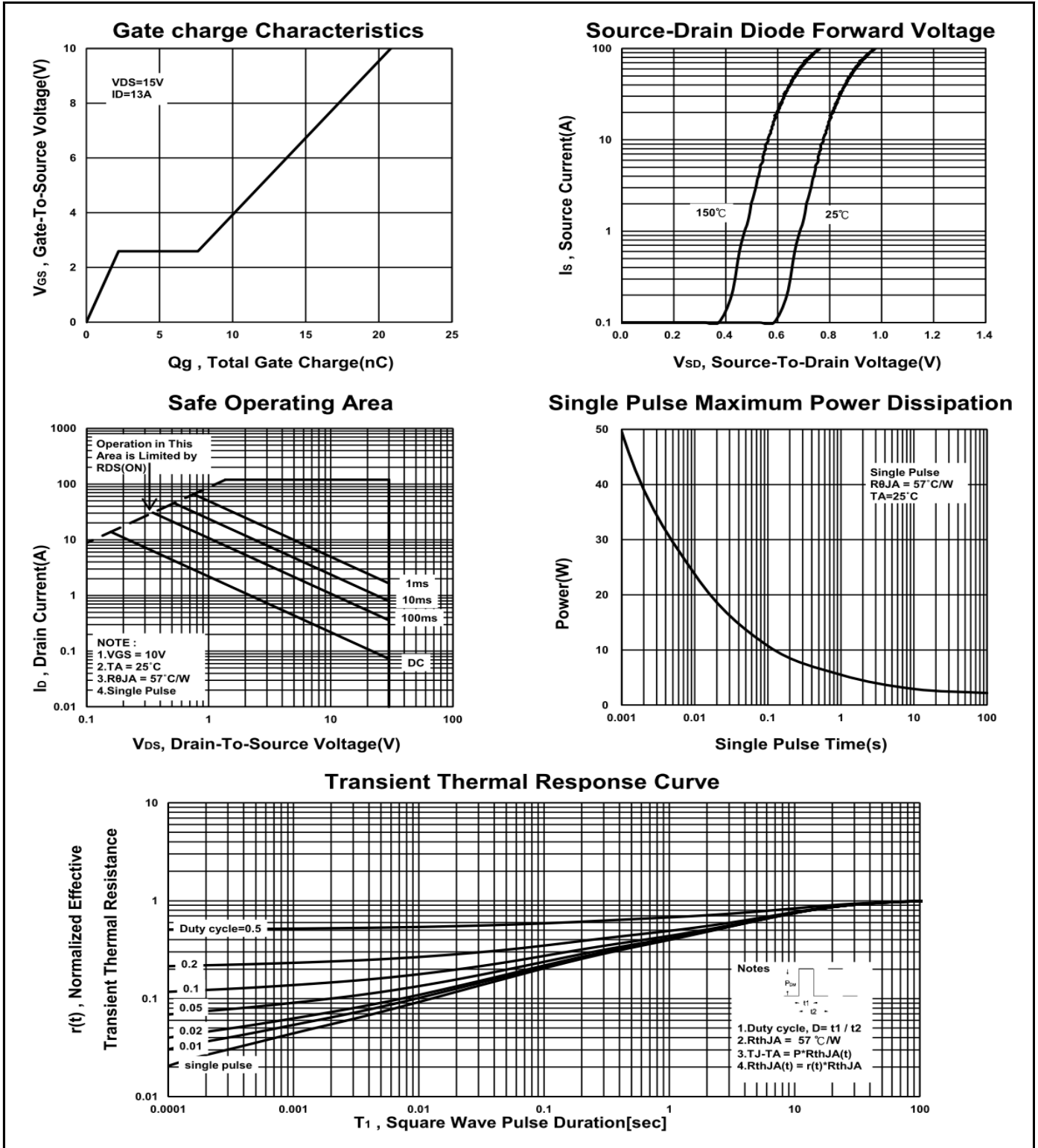


On-Resistance VS Drain Current



PK6B2BA

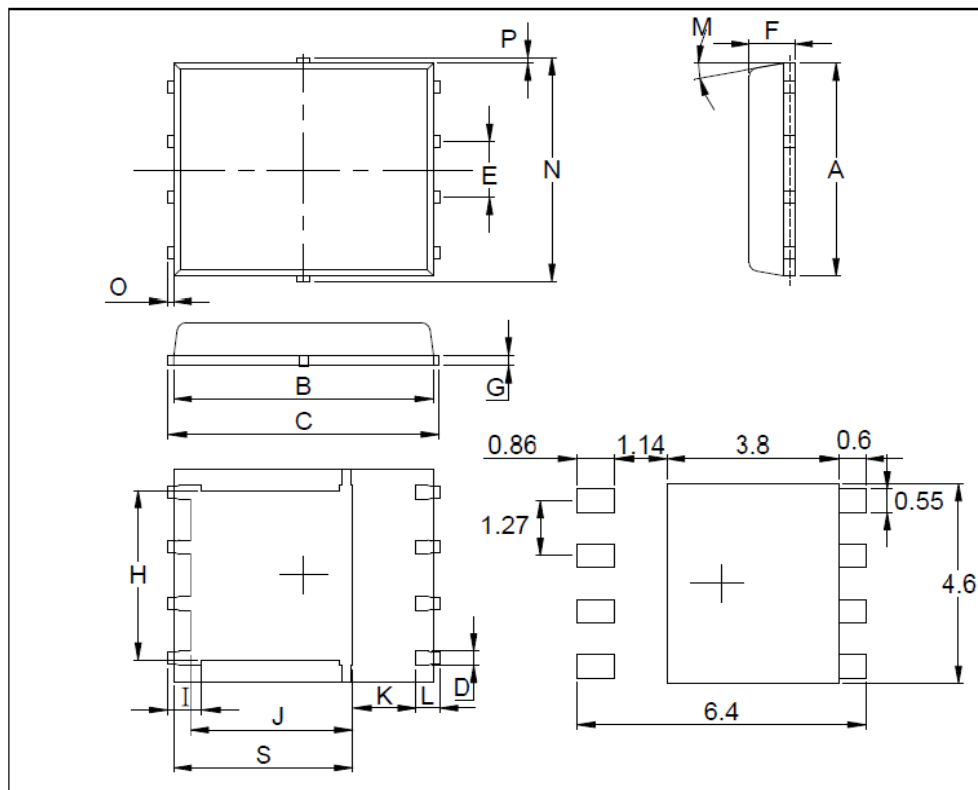
N-Channel Enhancement Mode MOSFET



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N-Channel Enhancement Mode MOSFET

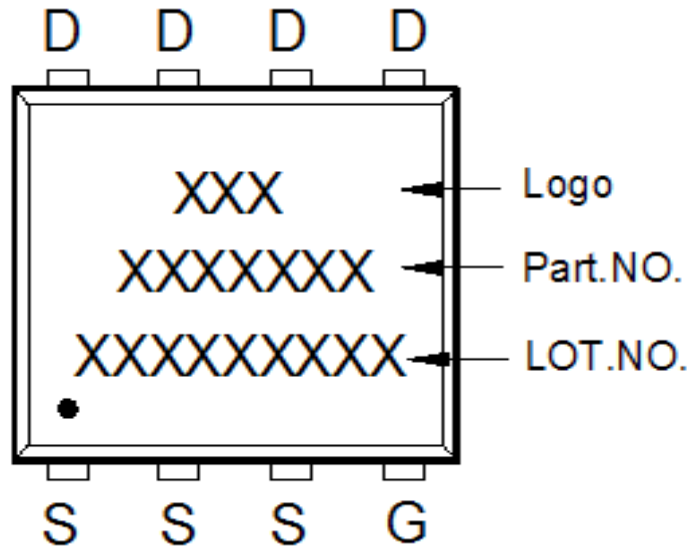
PDFN 5x6P MECHANICAL DATA

| 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 | | | | |

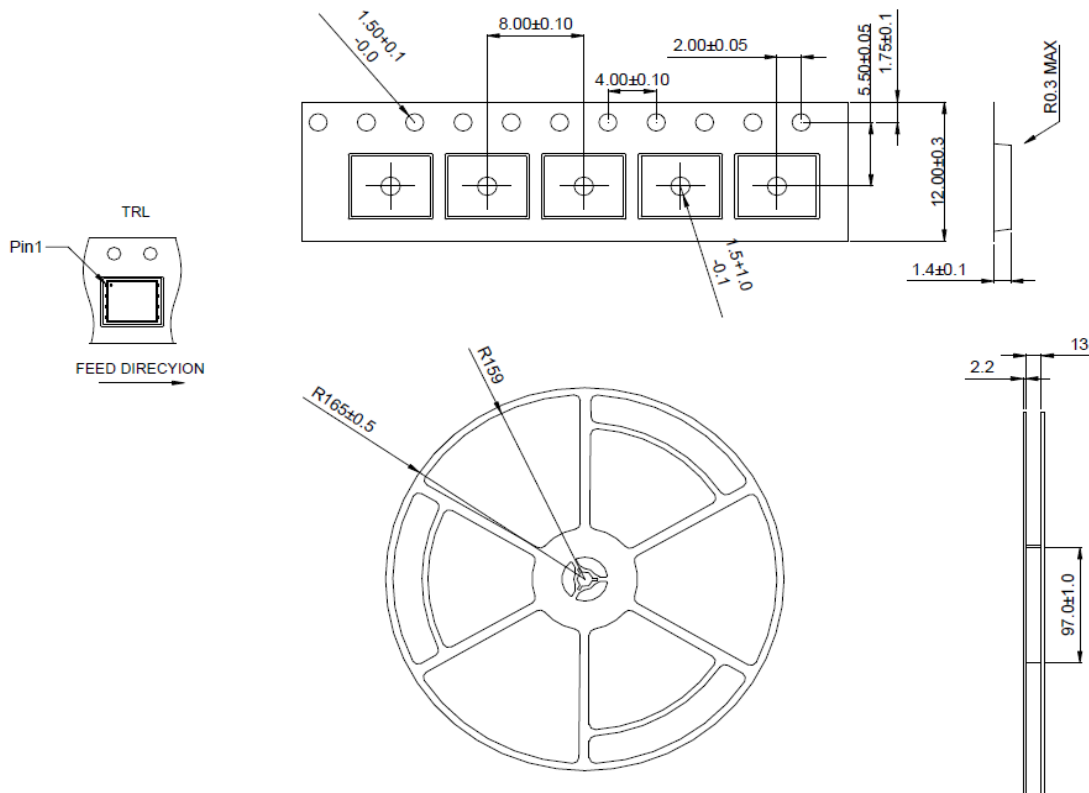


PK6B2BA
N-Channel Enhancement Mode MOSFET

A. Marking Information



B. Tape & Reel Information: 3000pcs/Reel

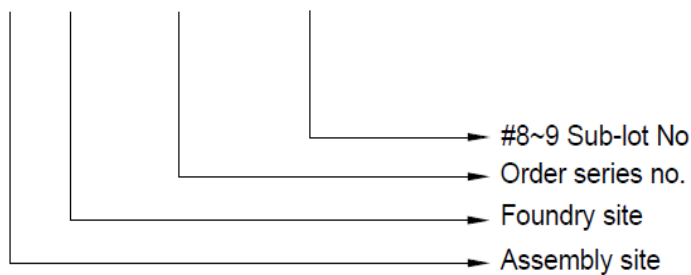


PK6B2BA
N-Channel Enhancement Mode MOSFET

C. Lot.No. & Date Code rule

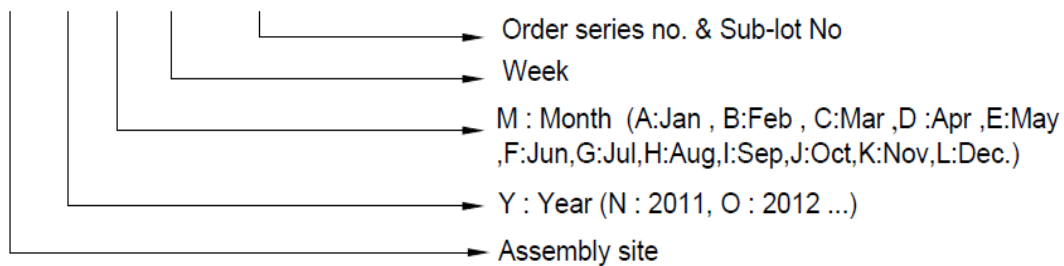
1.LOT.NO.

M N 15M21 03



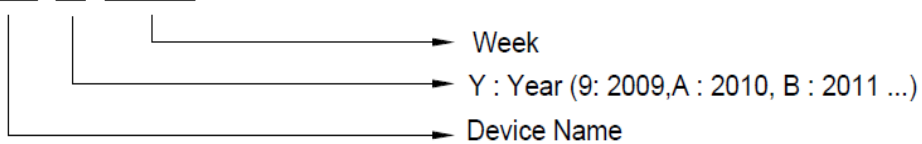
2.Date Code

D Y M X XXX



3.Date Code (for Small package)

XX Y WW





PK6B2BA

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 | Great Power | 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 | Pb Free label |  Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial |
| 11 | Halogen Free label |  Diameter: 1 cm bottom color: Green Font color: Black Font style: Arial |
| 12 | Scan info | 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 |