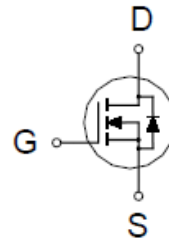
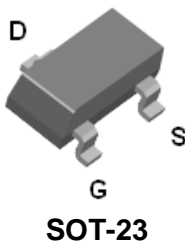


PB210BM

N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

| $V_{(BR)DSS}$ | $R_{DS(ON)}$ | I_D |
|---------------|--------------------------------|-------|
| 100V | 230m Ω @ $V_{GS} = 10V$ | 1.3A |



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

| PARAMETERS/TEST CONDITIONS | | SYMBOL | LIMITS | UNITS |
|--|-----------------------------------|----------------|------------|------------------|
| Gate-Source Voltage | | V_{GS} | ± 20 | V |
| Continuous Drain Current | $T_A = 25\text{ }^\circ\text{C}$ | I_D | 1.3 | A |
| | $T_A = 100\text{ }^\circ\text{C}$ | | 0.8 | |
| Pulsed Drain Current ¹ | | I_{DM} | 18 | |
| Avalanche Current | | I_{AS} | 18 | |
| Avalanche Energy | $L = 0.1\text{mH}$ | E_{AS} | 16.5 | mJ |
| Power Dissipation | $T_A = 25\text{ }^\circ\text{C}$ | P_D | 0.75 | W |
| | $T_A = 70\text{ }^\circ\text{C}$ | | 0.3 | |
| 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 | $R_{\theta JA}$ | | 166 | $^\circ\text{C} / \text{W}$ |
| Junction-to-Case | $R_{\theta JC}$ | | 60 | |

¹Pulse width limited by maximum junction temperature.

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

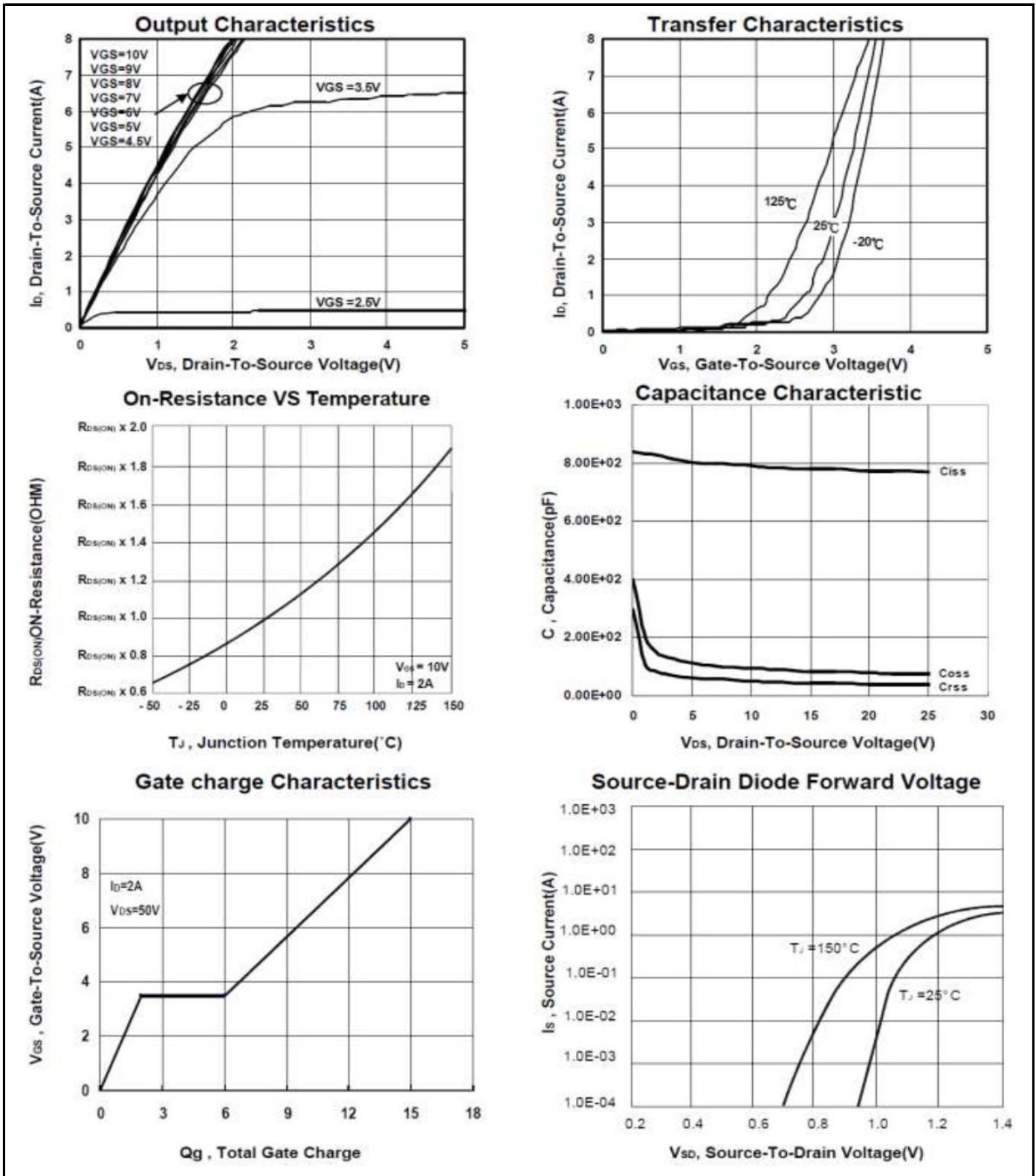
| PARAMETER | SYMBOL | TEST CONDITIONS | LIMITS | | | UNITS |
|--|----------------------|---|--------|-----|------|-------|
| | | | MIN | TYP | MAX | |
| STATIC | | | | | | |
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} = 0V, I _D = 250μA | 100 | | | V |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = 250μA | 1 | 1.5 | 2 | V |
| Gate-Body Leakage | I _{GSS} | V _{DS} = 0V, V _{GS} = ±20V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = 80V, V _{GS} = 0V | | | 1 | μA |
| | | V _{DS} = 80V, V _{GS} = 0V, T _J = 125 °C | | | 10 | |
| On-State Drain Current ¹ | I _{D(ON)} | V _{DS} = 10V, V _{GS} = 10V | 18 | | | A |
| Drain-Source On-State Resistance ¹ | R _{DS(ON)} | V _{GS} = 10V, I _D = 2A | | 220 | 230 | mΩ |
| | | V _{GS} = 5V, I _D = 1A | | 230 | 240 | |
| Forward Transconductance ¹ | g _{fs} | V _{DS} = 10V, I _D = 2A | | 10 | | S |
| DYNAMIC | | | | | | |
| Input Capacitance | C _{iss} | V _{GS} = 0V, V _{DS} = 25V, f = 1MHz | | 802 | | pF |
| Output Capacitance | C _{oss} | | | 80 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 41 | | |
| Gate Resistance | R _g | V _{GS} = 0V, V _{DS} = 0V, f = 1MHz | | 2.5 | | Ω |
| Total Gate Charge ² | Q _g | V _{DS} = 50V, V _{GS} = 10V, I _D = 2A | | 15 | | nC |
| Gate-Source Charge ² | Q _{gs} | | | 2 | | |
| Gate-Drain Charge ² | Q _{gd} | | | 4 | | |
| Turn-On Delay Time ² | t _{d(on)} | V _{DD} = 50V, I _D ≅ 2A, V _{GEN} = 10V, R _{GS} = 6Ω | | 16 | | nS |
| Rise Time ² | t _r | | | 330 | | |
| Turn-Off Delay Time ² | t _{d(off)} | | | 39 | | |
| Fall Time ² | t _f | | | 111 | | |
| SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTIC (T_J = 25 °C) | | | | | | |
| Continuous Current | I _S | | | | 10 | A |
| Forward Voltage ¹ | V _{SD} | I _F = 2A, V _{GS} = 0V | | | 1.4 | V |
| Reverse Recovery Time | t _{rr} | I _F = 2A, dI/dt = 500A/μS | | | 75 | nS |
| Reverse Recovery Charge | Q _{rr} | | | | 0.17 | nC |

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

²Independent of operating temperature.

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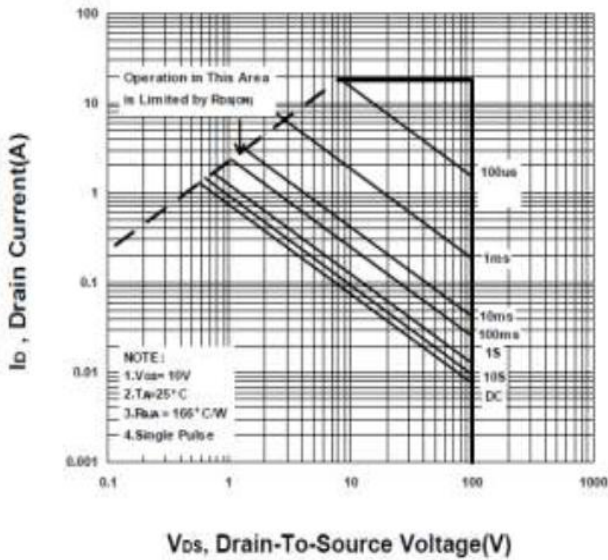
N-Channel Enhancement Mode MOSFET



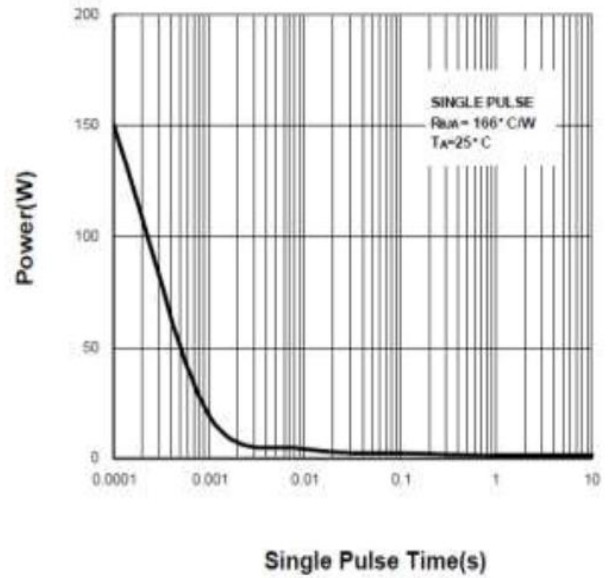
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N-Channel Enhancement Mode MOSFET

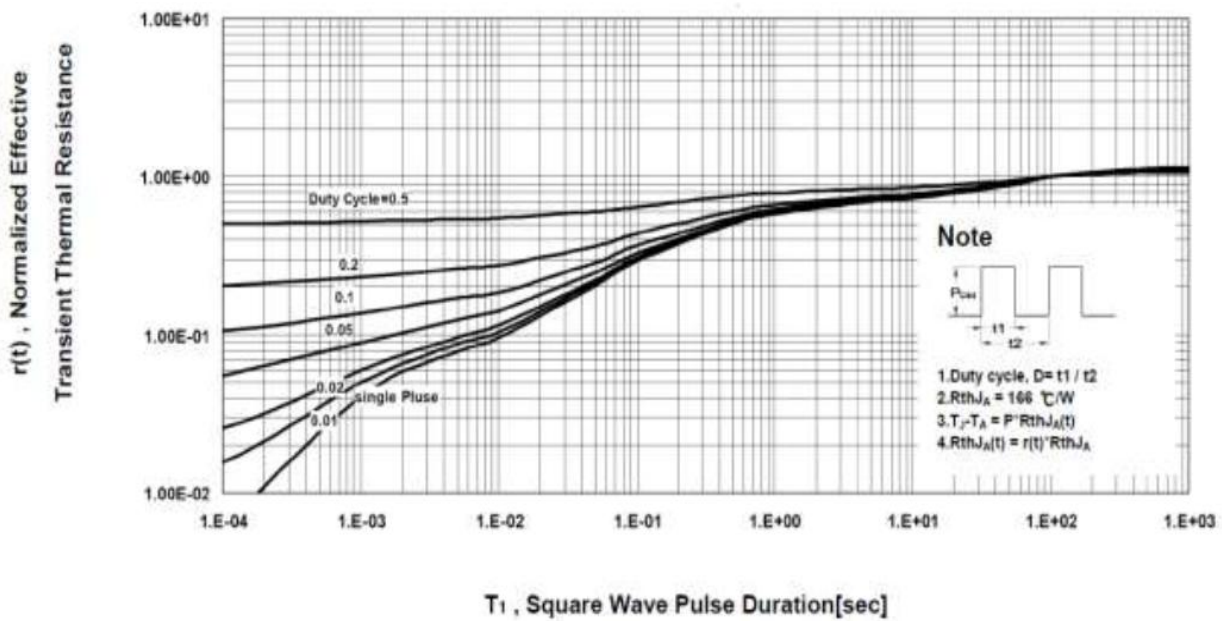
Safe Operating Area



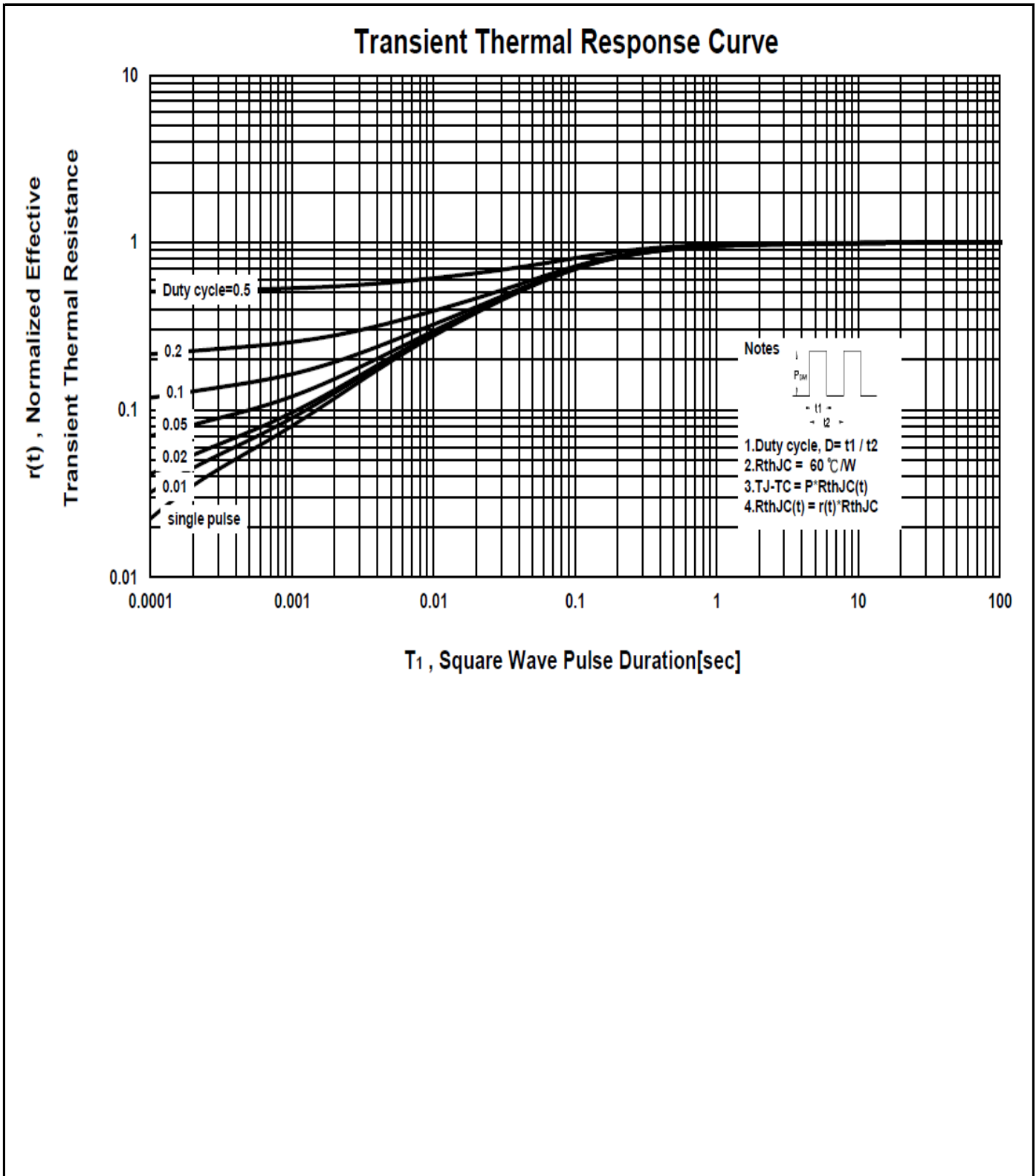
Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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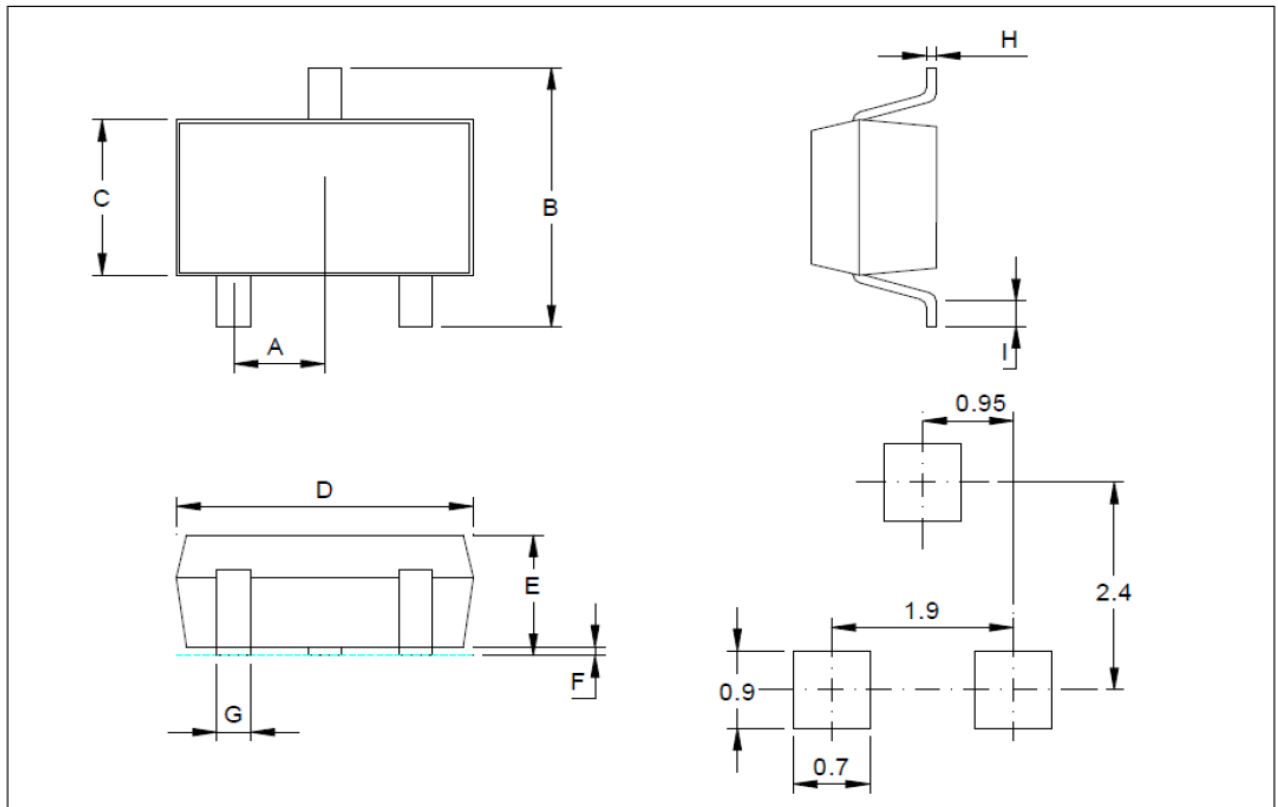


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Package Dimension

SOT-23 MECHANICAL DATA

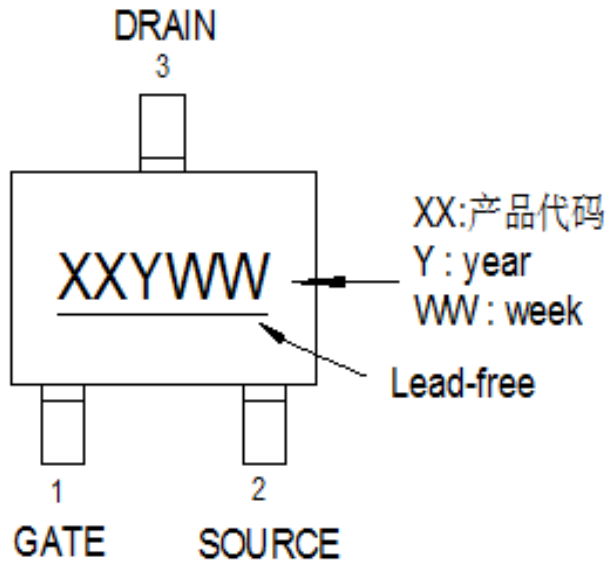
| Dimension | mm | | | Dimension | mm | | |
|-----------|------|------|------|-----------|------|------|------|
| | Min. | Typ. | Max. | | Min. | Typ. | Max. |
| A | | 1.05 | | H | 0.1 | | 0.2 |
| B | 2.4 | | 3 | I | 0.3 | | 0.6 |
| C | 1.4 | | 1.73 | | | | |
| D | 2.7 | | 3.1 | | | | |
| E | 1 | | 1.31 | | | | |
| F | 0 | | 0.15 | | | | |
| G | 0.3 | | 0.5 | | | | |



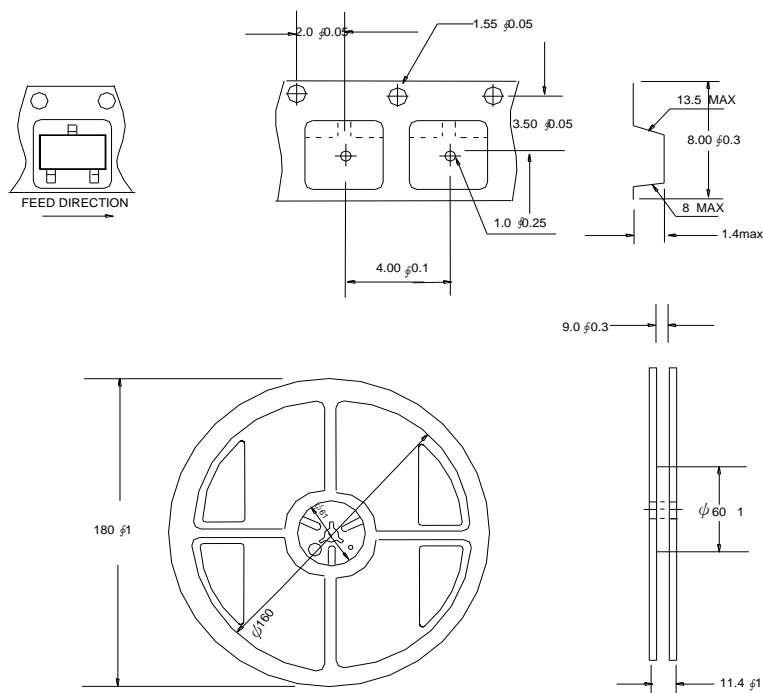
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N-Channel Enhancement Mode MOSFET

A. Marking Information (此产品代码为：1V)



B. Tape&Reel Information:3000pcs/Reel

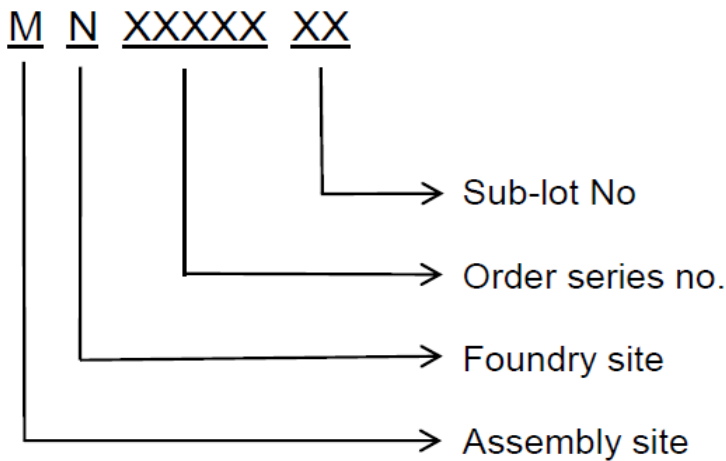


PB210BM

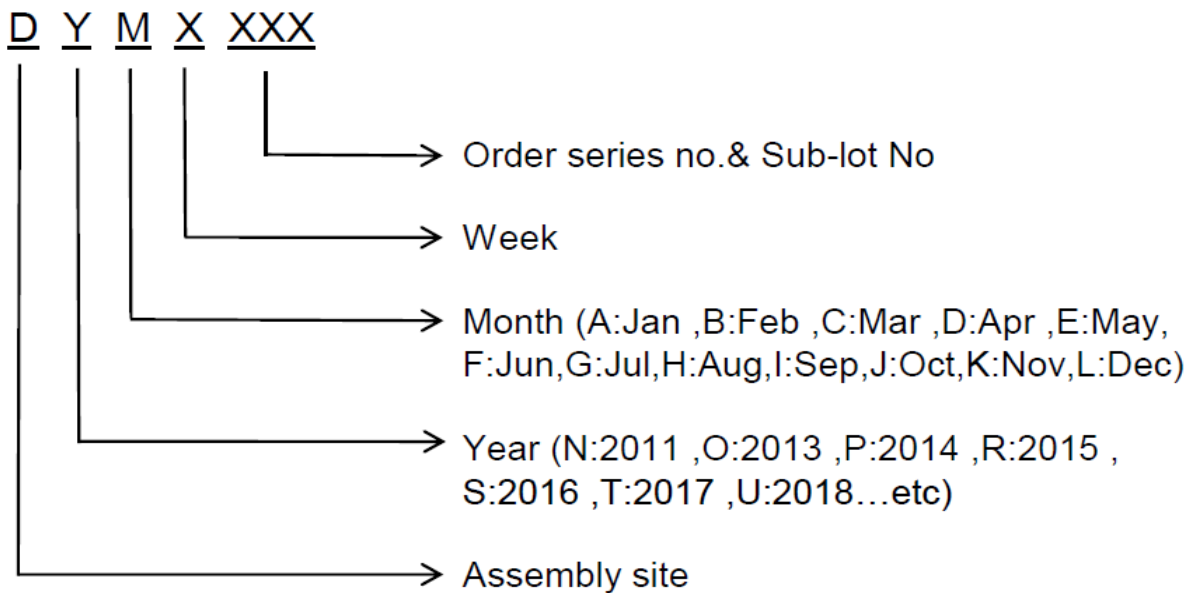
N-Channel Enhancement Mode MOSFET

C. Lot No.&Date Code rule

1.Lot No.



2.Date Code





PB210BM

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 |