

**/ Descriptions**

DFN2×2B-6L P MOS

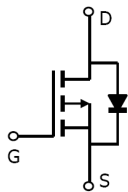
P-Channel Enhancement Mode Field Effect Transistor in a DFN2×2B-6L Plastic Package.

**/ Features** $V_{DS} (V) = -16V$   $I_D = -12A$  $R_{DS(ON)}@-4.5V \leq 14m\Omega$ (Type.12.6m $\Omega$ ) $R_{DS(ON)}@-2.5V \leq 25m\Omega$ (Type.17.0m $\Omega$ ) $R_{DS(ON)}@-1.8V \leq 100m\Omega$ (Type.23.5m $\Omega$ )

HF Product.

**/ Applications**

Power Management in Notebook computer, Portable Equipment and Battery powered systems.

**/ Equivalent Circuit****/ Pinning****/ Marking**

See Marking Instructions.

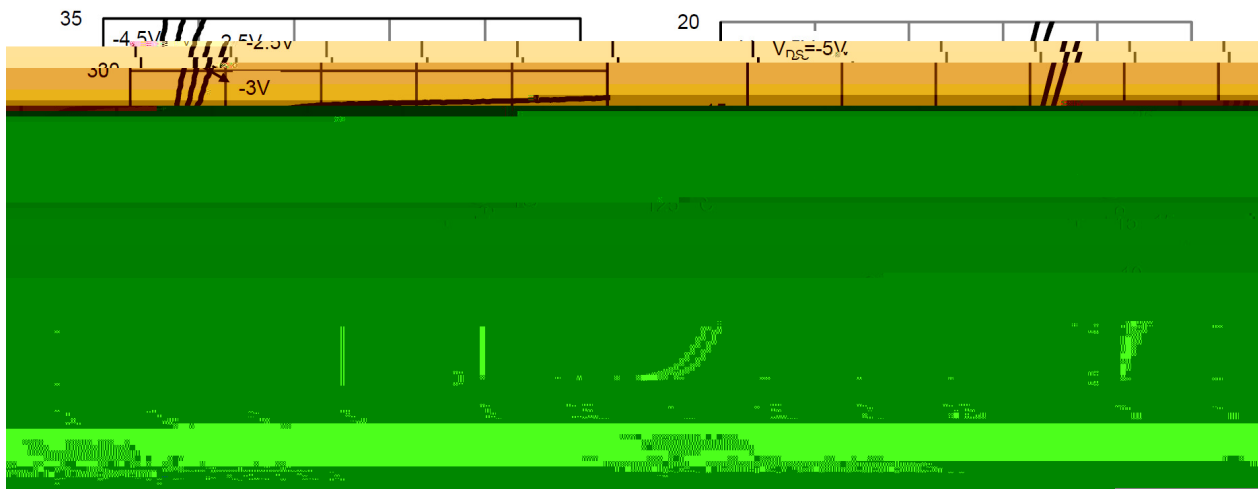
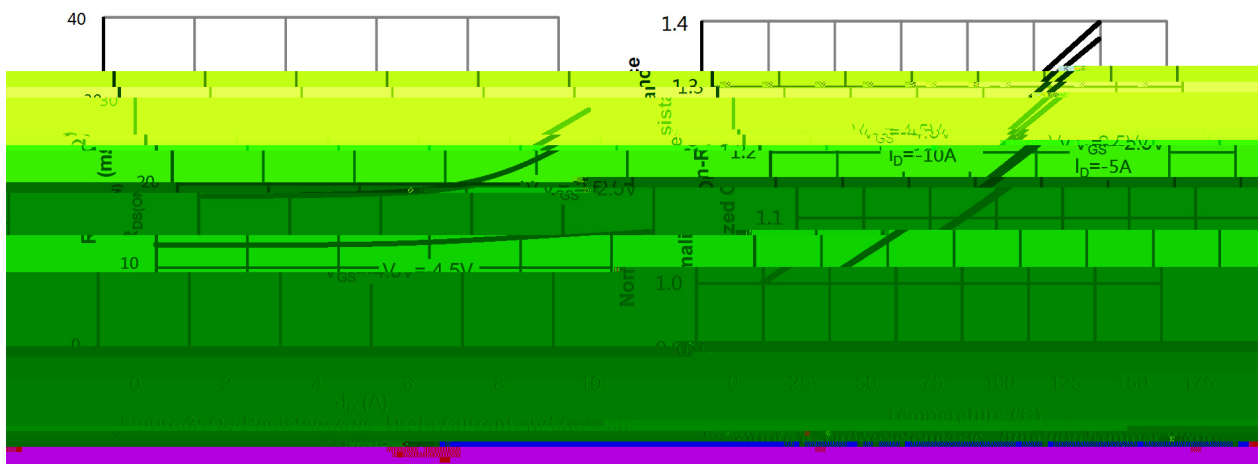
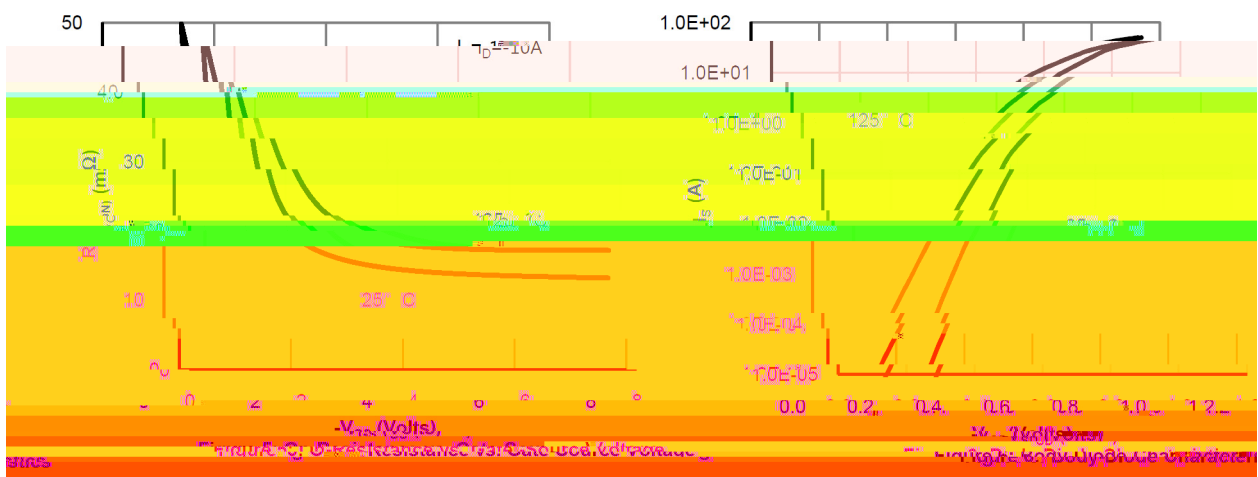
## / Absolute Maximum Ratings(Ta=25 )

| Parameter                              | Symbol          | Rating   | Unit |
|----------------------------------------|-----------------|----------|------|
| Drain-Source Voltage                   | $V_{DSS}$       | -16      | V    |
| Gate-Source Voltage                    | $V_{GSS}$       | $\pm 10$ | V    |
| Continuous Drain Current               | $I_D$           | -12      | A    |
| Pulsed Drain Current                   | $I_{DM}$        | -42      | A    |
| Power Dissipation for Single Operation | $P_D$           | 3.0      | W    |
| Maximum Junction Temperature           | $T_j$           | 150      |      |
| Storage Temperature Range              | $T_{stg}$       | -55 150  |      |
| Thermal Resistance-Junction to Ambient | $R_{\theta JA}$ | 41.7     | /W   |

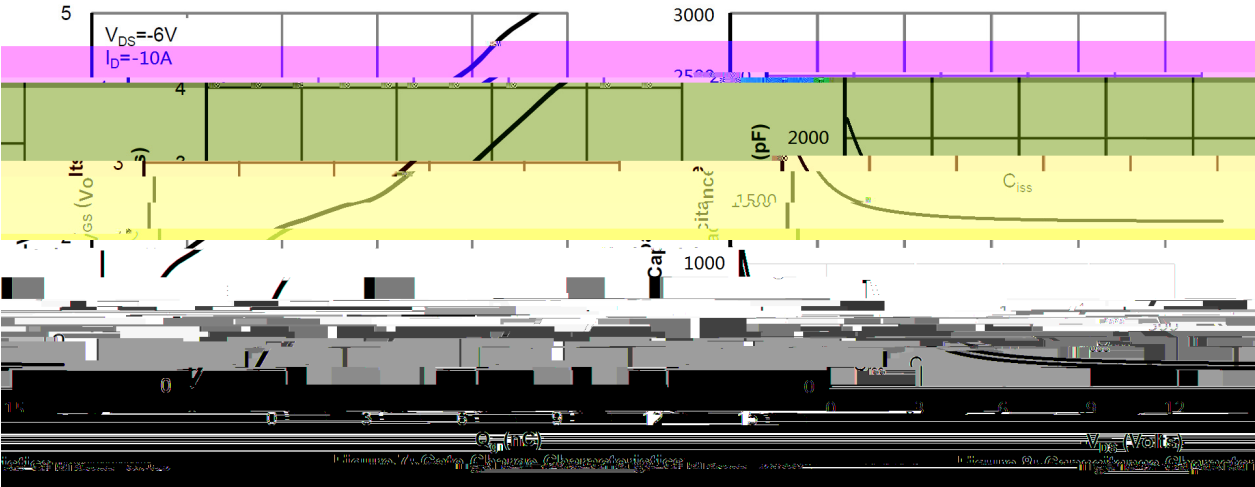
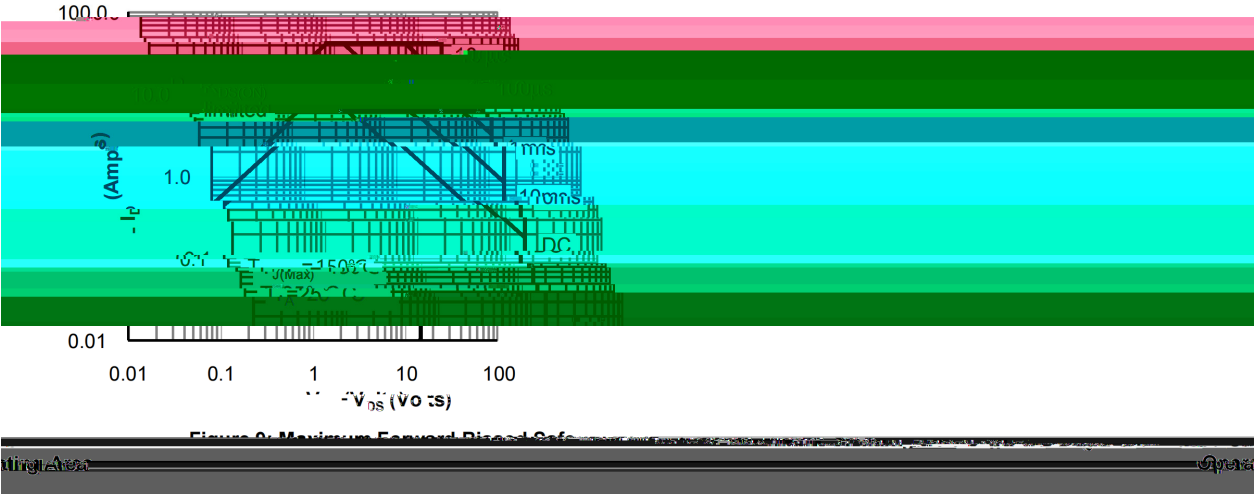
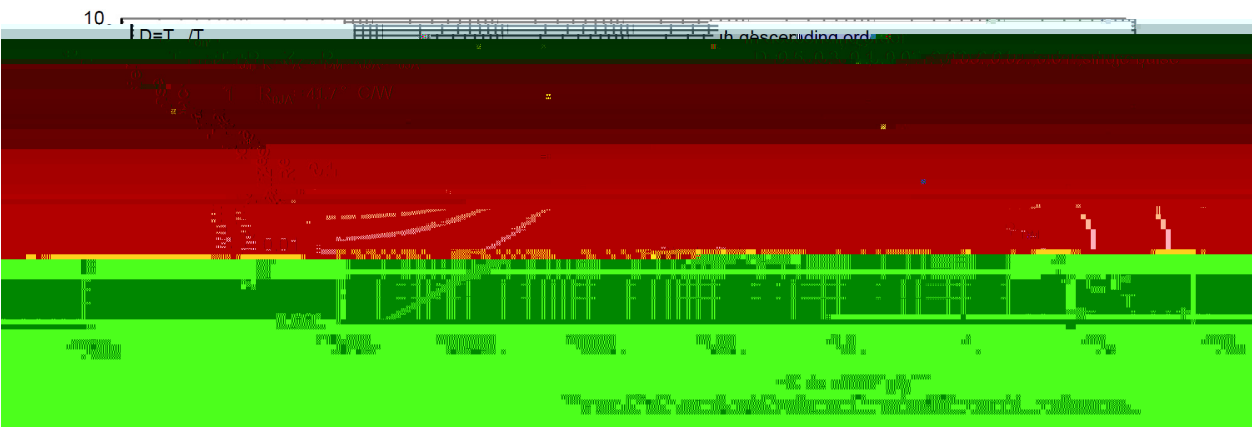
## / Electrical Characteristics(Ta=25 )

| Parameter                         | Symbol       | Test Conditions                                                 | Min  | Typ  | Max       | Unit    |
|-----------------------------------|--------------|-----------------------------------------------------------------|------|------|-----------|---------|
| Drain-Source Breakdown Voltage    | $BV_{DSS}$   | $I_D = -250\mu A$ $V_{GS} = 0V$                                 | -16  | -19  |           | V       |
| Zero Gate Voltage Drain Current   | $I_{DSS}$    | $V_{DS} = -16V$ $V_{GS} = 0V$                                   |      |      | -1.0      | $\mu A$ |
| Gate-Body leakage current         | $I_{GSS}$    | $V_{DS} = 0V$ $V_{GS} = \pm 10V$                                |      |      | $\pm 100$ | nA      |
| Gate Threshold Voltage            | $V_{GS(th)}$ | $V_{DS} = V_{GS}$ $I_D = -250\mu A$                             | -0.3 | -0.7 | -1.5      | V       |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_{GS} = -4.5V$ $I_D = -10A$                                   |      | 12.6 | 14        | m       |
|                                   |              | $V_{GS} = -2.5V$ $I_D = -5A$                                    |      | 17.0 | 25        |         |
|                                   |              | $V_{GS} = -1.8V$ $I_D = -5A$                                    |      | 23.5 | 100       |         |
| Diode Forward Voltage             | $V_{SD}$     | $I_S = -1A$ $V_{GS} = 0V$                                       |      |      | -1.2      | V       |
| Gate resistance                   | $R_g$        | $V_{GS} = 0V$ , $V_{DS} = 0V$ ,<br>$f = 1MHz$                   |      | 10.3 |           |         |
| Input Capacitance                 | $C_{iss}$    | $V_{GS} = 0V$ $V_{DS} = -8V$<br>$f = 1MHz$                      |      | 1365 |           | pF      |
| Output Capacitance                | $C_{oss}$    |                                                                 |      | 220  |           |         |
| Reverse Transfer Capacitance      | $C_{rss}$    |                                                                 |      | 180  |           |         |
| Total Gate Charge                 | $Q_g$        | $V_{GS} = -4.5V$ $V_{DS} = -10V$<br>$I_D = -8A$                 |      | 14.1 |           | nC      |
| Gate-Source Charge                | $Q_{gs}$     |                                                                 |      | 1.3  |           |         |
| Gate-Drain Charge                 | $Q_{gd}$     |                                                                 |      | 3.1  |           |         |
| Turn-on Delay Time                | $t_{d(ON)}$  | $V_{GS} = -4.5V$ $V_{DS} = -10V$<br>$I_D = -8A$ $R_g = 3\Omega$ |      | 12.2 |           | ns      |
| Turn-on Rise Time                 | $t_r$        |                                                                 |      | 60.6 |           |         |
| Turn-off Delay Time               | $t_{d(OFF)}$ |                                                                 |      | 68.6 |           |         |
| Turn-off Fall Time                | $t_f$        |                                                                 |      | 41.7 |           |         |

## / Electrical Characteristic Curve



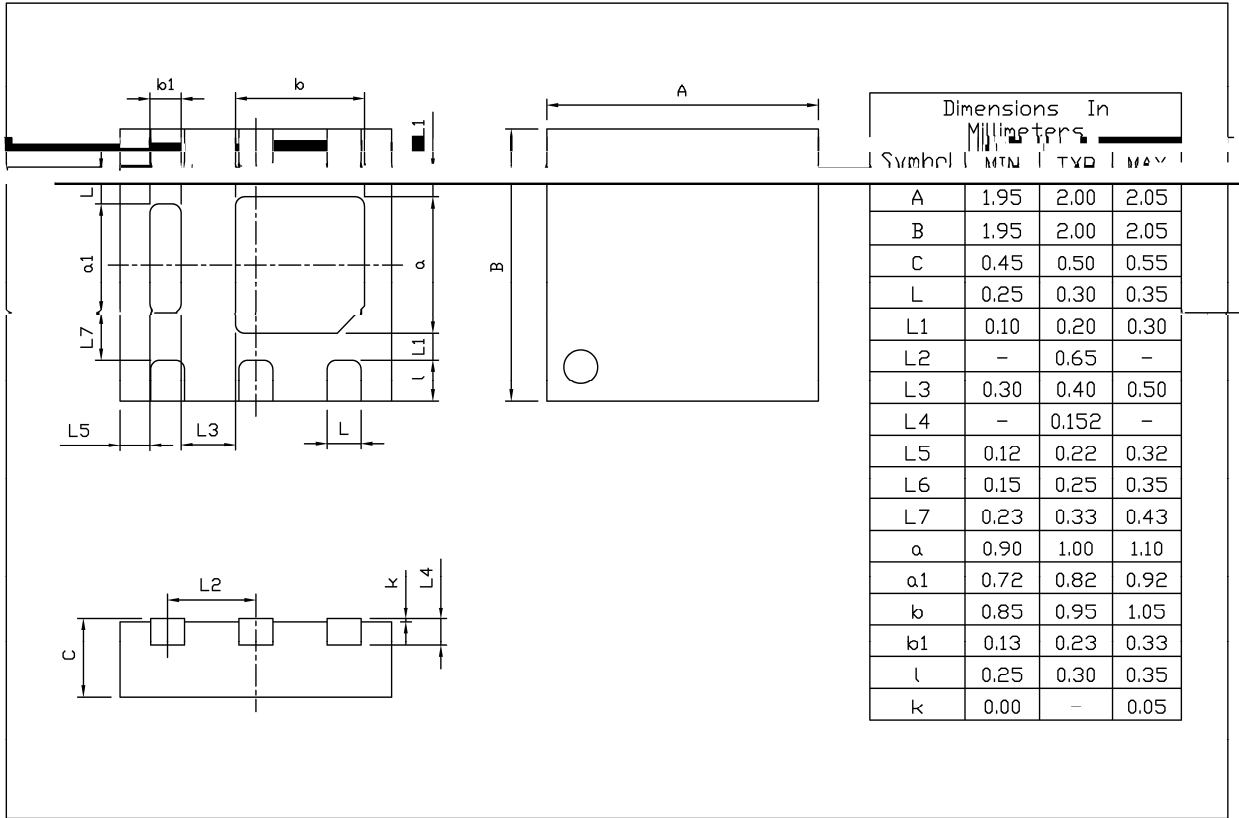
/ Electrical Characteristic Curve



/ Package Dimensions

DFN2 X2B-6L-0.5

Unit:mm



Rev.01 202006



/ Marking Instructions



BR

130P016

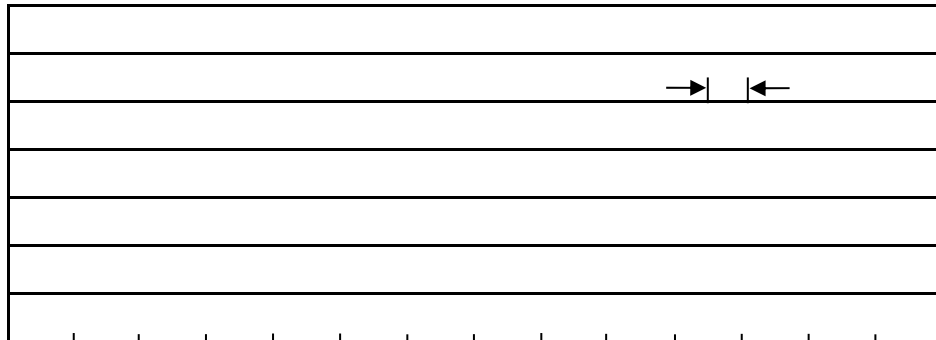
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Note:

BR: Company Code

130P016: Product Type Code

\*\*\*\*\*: Lot No. Code, code change with Lot No


**( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)**


Note:

- |   |         |           |                                         |
|---|---------|-----------|-----------------------------------------|
| 1 | 150 180 | 60 90sec; | 1.Preheating:150~180 , Time:60~90sec.   |
| 2 | 245±5   | 5±0.5sec; | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 | 2 10    | /sec.     | 3. Cooling Speed: 2~10 /sec.            |

**/ Resistance to Soldering Heat Test Conditions**

260±5                      10±1 sec.                      Temp.:260±5                      Time:10±1 sec

**/ Packaging SPEC.**
**/ REEL**

| Package Type | Units           |                      |                      |                            |                      | Dimension (unit mm <sup>3</sup> ) |             |             |
|--------------|-----------------|----------------------|----------------------|----------------------------|----------------------|-----------------------------------|-------------|-------------|
|              | Units/Reel<br>/ | Reels/Inner Box<br>/ | Units/Inner Box<br>/ | Inner Boxes/Outer Box<br>/ | Units/Outer Box<br>/ | Reel                              | Inner Box   | Outer Box   |
| DFN2×2B-6L   | 4,000           | 10                   | 40,000               | 4                          | 160,000              | 7 ×8                              | 210×205×205 | 445×435×230 |

**/ Notices**

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