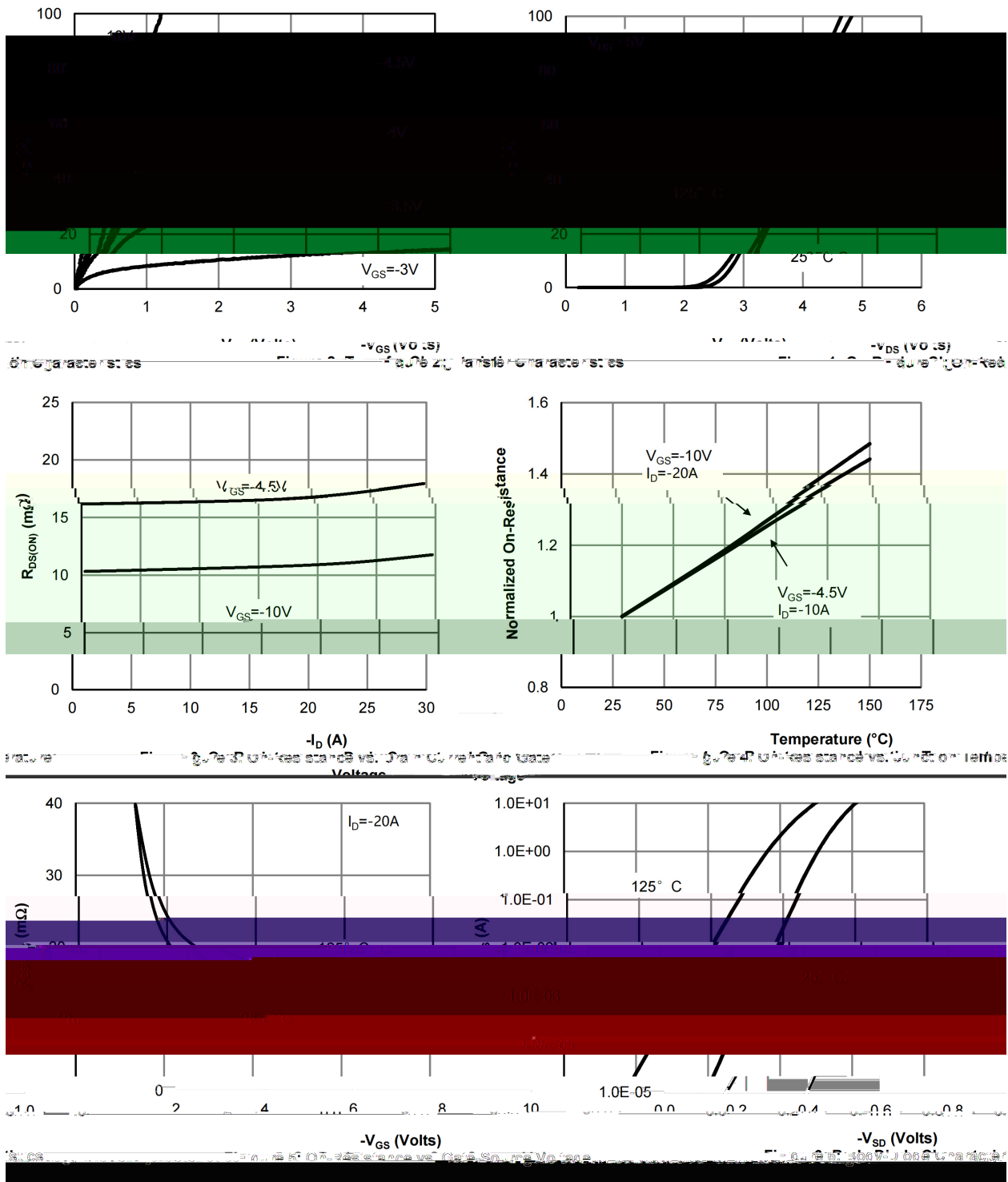


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PDFN3×3A-8L      P      MOS

| Parameter                               |              | Symbol                      | Rating     | Unit |
|-----------------------------------------|--------------|-----------------------------|------------|------|
| Drain-Source Voltage                    |              | $V_{DS}$                    | -30        | V    |
| Drain Current                           |              | $I_D(T_C=25^\circ\text{C})$ | -35        | A    |
| Drain Current - Pulsed                  |              | $I_{DM}$                    | -80        | A    |
| Gate-Source Voltage                     |              | $V_{GS}$                    | $\pm 20$   | V    |
| Avalanche Current                       |              | $I_{AS}$                    | 17         | A    |
| Single Pulsed Avalanche Energy          |              | $E_{AS}$                    | 151        | mJ   |
| Power Dissipation                       |              | $P_D(T_C=25^\circ\text{C})$ | 28         | W    |
| Operating and Storage Temperature Range |              | $T_J, T_{stg}$              | -55 to 150 |      |
| Junction-to-Ambient                     | $t \leq 10$  | $R_{\theta JA}$             | 25         | /W   |
| Junction-to-Ambient                     | Steady-State |                             | 55         |      |
| Junction-to-Case                        | Steady-State | $R_{\theta JC}$             | 4.5        |      |

| Parameter                         | Symbol       | Test Conditions                                                          | Min  | Typ  | Max       | Unit    |
|-----------------------------------|--------------|--------------------------------------------------------------------------|------|------|-----------|---------|
| Drain-Source Breakdown Voltage    | $BV_{DSS}$   | $I_D = -250\mu A$ $V_{GS} = 0V$                                          | -30  | -36  |           | V       |
| Zero Gate Voltage Drain Current   | $I_{DSS}$    | $V_{DS} = -30V$ $V_{GS} = 0V$                                            |      |      | -1        | $\mu A$ |
| Gate-Body leakage current         | $I_{GSS}$    | $V_{DS} = 0V$<br>$V_{GS} = \pm 20V$                                      |      |      | $\pm 100$ | nA      |
| Gate Threshold Voltage            | $V_{GS(th)}$ | $V_{DS} = V_{GS}$<br>$I_D = -250\mu A$                                   | -1.0 | -1.7 | -2.5      | V       |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS} = -10V$ $I_D = -20A$                                             |      | 10.5 | 12        | m       |
|                                   |              | $V_{GS} = -4.5V$ $I_D = -10A$                                            |      | 16.5 | 18        |         |
| 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>$f = 1MHz$                                |      | 7.5  | 10        |         |
| Input Capacitance                 | $C_{iss}$    | $V_{GS} = 0V$<br>$V_{DS} = -25V$ $f = 1MHz$                              |      | 2100 |           | pF      |
| Output Capacitance                | $C_{oss}$    |                                                                          |      | 340  |           |         |
| Reverse Transfer Capacitance      | $C_{rss}$    |                                                                          |      | 210  |           |         |
| Total Gate Charge                 | $Q_g(10V)$   | $V_{GS} = -10V$ $V_{DS} = -15V$<br>$I_D = -17A$                          |      | 35   |           | nC      |
| Total Gate Charge                 | $Q_g(4.5V)$  |                                                                          |      | 17   |           |         |
| Gate-Source Charge                | $Q_{gs}$     |                                                                          |      | 5.7  |           |         |
| Gate-Drain Charge                 | $Q_{gd}$     |                                                                          |      | 8.8  |           |         |
| Turn-on Delay Time                | $t_{d(on)}$  | $V_{GS} = -10V$ $V_{DS} = -15V$<br>$R_L = 0.9\Omega$ $R_{GEN} = 3\Omega$ |      | 11   |           | ns      |
| Turn-on Rise Time                 | $t_r$        |                                                                          |      | 7.5  |           |         |
| Turn-off Delay Time               | $t_{d(off)}$ |                                                                          |      | 43.5 |           |         |
| Turn-off Fall Time                | $t_f$        |                                                                          |      | 17.5 |           |         |



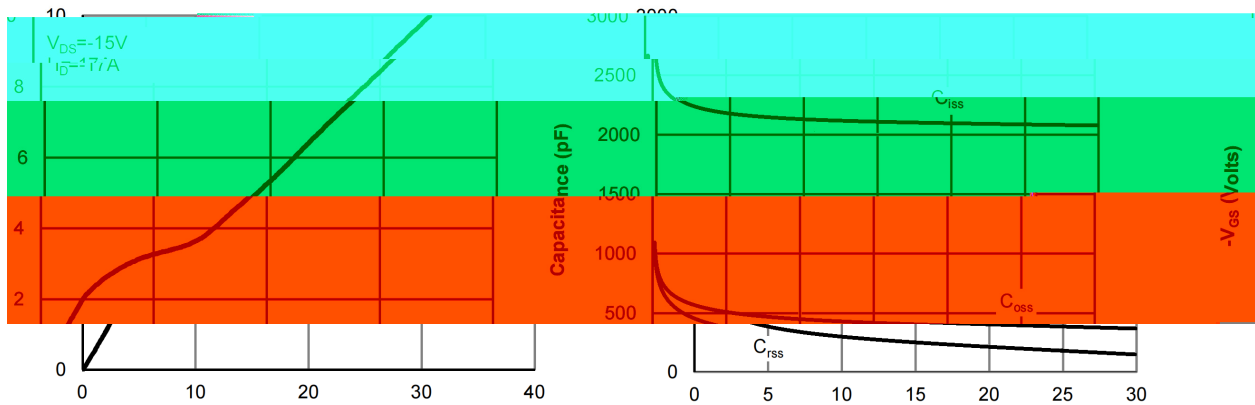


Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

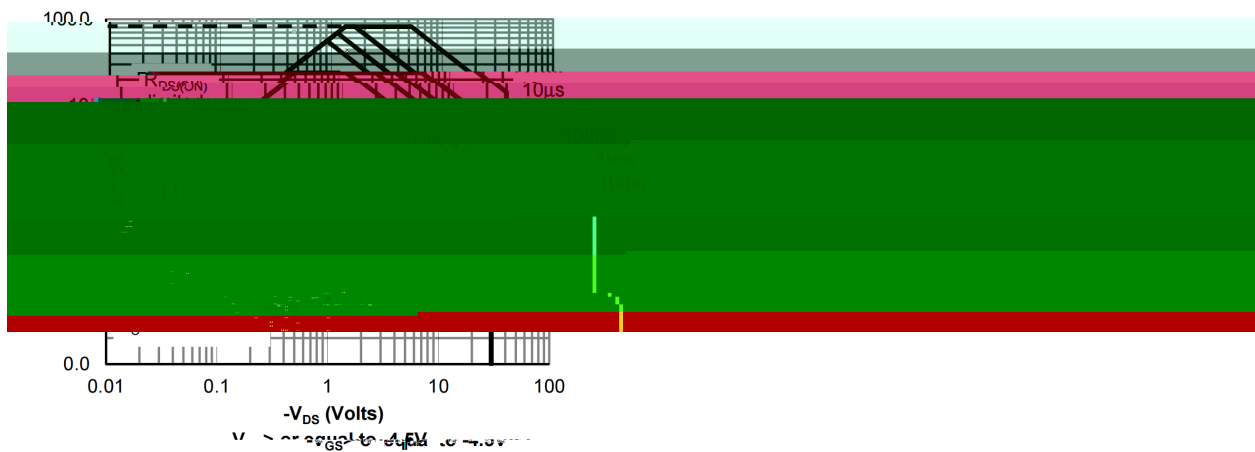


Figure 9: Maximum Forward Biased Safe Operating Area

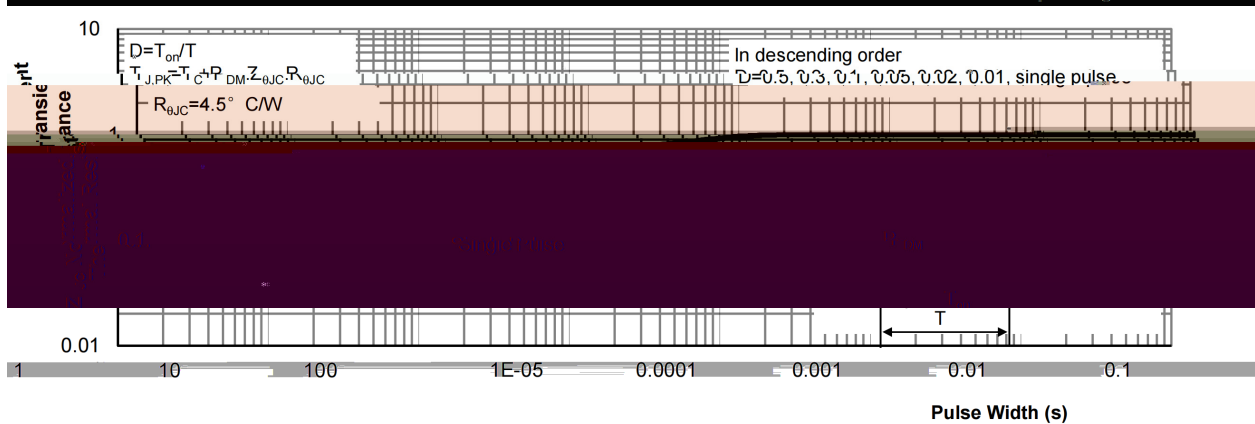
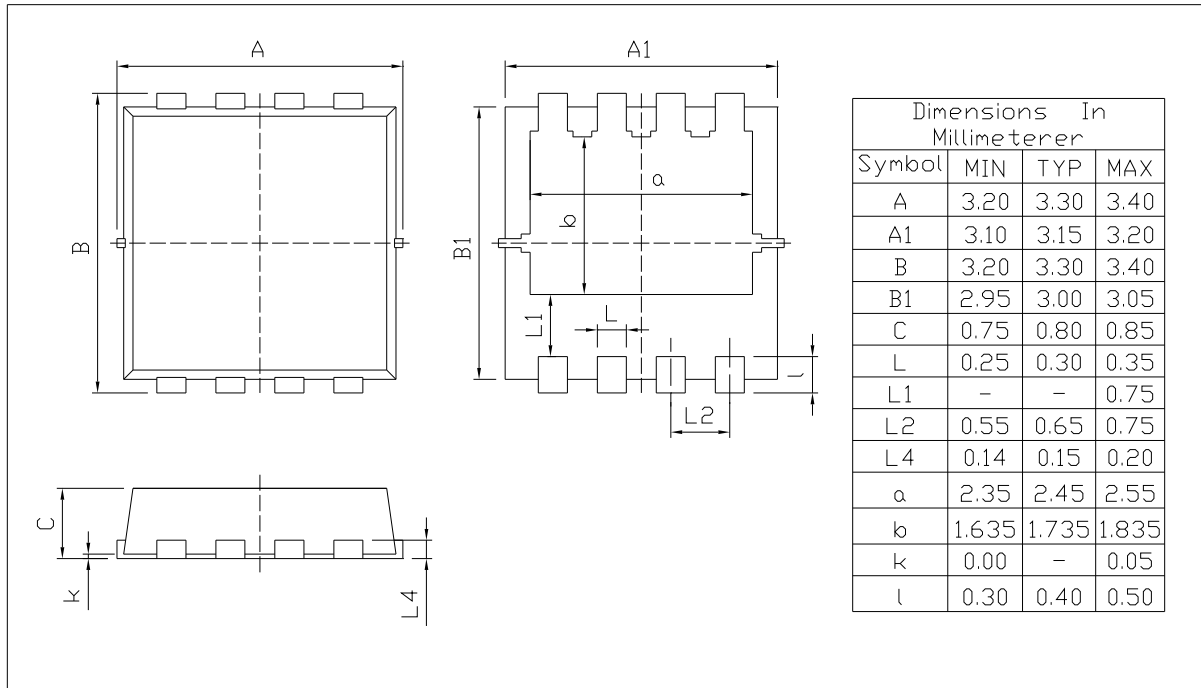


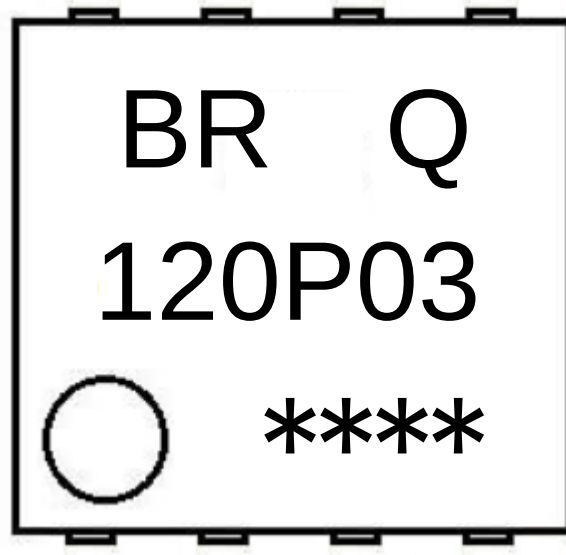
Figure 10: Normalized Maximum Transient Thermal Impedance

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Unit:mm



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BR

120P03

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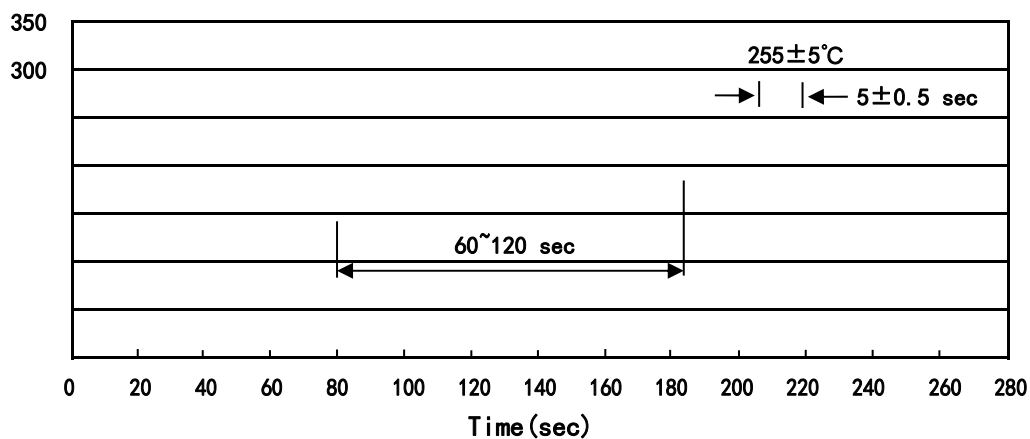
Note:

BR: Company Code

120P03: Product Type Code

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

### Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- |   |       |     |           |                                         |                                        |
|---|-------|-----|-----------|-----------------------------------------|----------------------------------------|
| 1 | 150   | 200 | 60        | 120sec;                                 | 1.Preheating:150~200 , Time:60~120sec. |
| 2 | 255±5 |     | 5±0.5sec; | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |                                        |
| 3 |       | 2   | 10 /sec.  | 3. Cooling Speed: 2~10 /sec.            |                                        |

260±5

10±1 sec.

Temp.:260±5

Time:10±1 sec

/ REEL

| Package Type | Units |  |  |  |  | Dimension |  | (unit mm <sup>3</sup> ) |
|--------------|-------|--|--|--|--|-----------|--|-------------------------|
|              |       |  |  |  |  |           |  |                         |
| x            |       |  |  |  |  |           |  |                         |