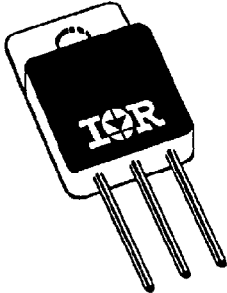


| <b>BRITISH STANDARDS INSTITUTION</b><br>2 Park Street, London W1A 2BS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>BS CECC 50012-063</b><br>Issue 1<br>October 1990<br>Page 1 of 19<br>Reprinted January, 1991                                               |                                                                                                                                                                                                                         |                                                                                                       |       |             |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------|-------------|-------|-----|-----|------|-----|-----------------------------|------------|-----|------|-------------|-----|---------------------------|-----------|-----|------|-------------|-----|-------------------------------------------------------------------------------------------|------------|---|-----|---|-----|---------------------------------------------|-----------|---|----|---|-----|---------------------------------------------|------------|---|----|---|-----|--------------------------------------------------------------------|--------|---|-----|---|------|----------------------------------------------------------------|-----------|---|------|---|-----|--------------------------------------------------------------------------------|-----------|---|----|---|--|--|--|
| Electronic Components as Assessed Quality<br>in accordance with CECC 50000, Issue 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                              |                                                                                                                                                                                                                                                                                                            |                                                                                                       |       |             |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| Specification available from:-<br>As shown in PD 9002, CECC 00200 and<br>INTERNATIONAL RECTIFIER CO (GB) LTD<br>Hurst Green, Oxted, Surrey RH8 9BB.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>DETAIL SPECIFICATION FOR:-</b><br>Single Gate Field Effect Transistor,<br>P Channel, enhanced gate.<br><b>Type Numbers</b><br>IRFY9120(M) | Tel: (0883) 713215. Tlx:95219. Fax: (0883) 714234.                                                                                                                                                                                                                                                         |                                                                                                       |       |             |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| <b>1: MECHANICAL DESCRIPTION</b><br><b>CAUTION:</b> Static Sensitive.<br>Devices, see Clause 9.<br><br><b>OUTLINE:</b><br><br><br>For detail dimensions and terminal<br>identification see Appendix III.<br><br><b>MARKING:</b> See Clause 6 of this document.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                              | <b>ORDERING INFORMATION:-</b><br>See Clause 7 of this document<br><br><b>2: Semiconductor</b><br>Material : Silicon.<br>Encapsulation : Isolated Hermetically Sealed Metal Can.<br>Application : a. Low frequency amplification.<br>: b. Switching.<br>Power : Case rated : 30W @ $T_{case} = 25^{\circ}C$ | <b>3: LEVELS OF QUALITY ASSESSMENT:</b><br>E, plus additional tests.<br>Screening level A, B, C or D. |       |             |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| <b>4: LIMITING VALUES (Absolute maximum rating system).</b><br>These apply over the operating temperature range unless otherwise stated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                              |                                                                                                                                                                                                                                                                                                            |                                                                                                       |       |             |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| <table border="1"> <thead> <tr> <th rowspan="2">CECC 50012<br/>REFERENCE</th> <th rowspan="2"></th> <th rowspan="2">SYMBOL</th> <th colspan="3">VALUE</th> </tr> <tr> <th>MIN</th> <th>MAX</th> <th>UNIT</th> </tr> </thead> <tbody> <tr> <td>4.1</td> <td>Operating temperature range</td> <td><math>T_{case}</math></td> <td>-55</td> <td>+150</td> <td><math>^{\circ}C</math></td> </tr> <tr> <td>4.2</td> <td>Storage temperature range</td> <td><math>T_{stg}</math></td> <td>-55</td> <td>+150</td> <td><math>^{\circ}C</math></td> </tr> <tr> <td>4.3</td> <td>Drain-source voltage at <math>V_{GS} = 0</math><br/><math>T_J = 25^{\circ}C</math> to <math>150^{\circ}C</math>      IRFY9120(M)</td> <td><math>-V_{DSS}</math></td> <td>-</td> <td>100</td> <td>V</td> </tr> <tr> <td>4.4</td> <td>Reverse gate-source voltage at <math>V_{DS} = 0</math></td> <td><math>V_{GSR}</math></td> <td>-</td> <td>20</td> <td>V</td> </tr> <tr> <td>4.5</td> <td>Gate-drain voltage with source open circuit</td> <td><math>-V_{GDO}</math></td> <td>-</td> <td>20</td> <td>V</td> </tr> <tr> <td>4.7</td> <td>Continuous drain current<br/>@ <math>T_{case} = 25^{\circ}C</math>      IRFY9120(M)</td> <td><math>-I_D</math></td> <td>-</td> <td>5.3</td> <td>A</td> </tr> <tr> <td>4.71</td> <td>Pulsed drain current<br/>@ <math>T_{case} = 25^{\circ}C</math>      IRFY9120(M)</td> <td><math>-I_{DM}</math></td> <td>-</td> <td>21.2</td> <td>A</td> </tr> <tr> <td>4.8</td> <td>Power dissipation (see derating<br/>curve page 15) <math>T_{case} = 25^{\circ}C</math>      All</td> <td><math>P_{tot}</math></td> <td>-</td> <td>30</td> <td>W</td> </tr> </tbody> </table> | CECC 50012<br>REFERENCE                                                                                                                      |                                                                                                                                                                                                                                                                                                            | SYMBOL                                                                                                | VALUE |             |       | MIN | MAX | UNIT | 4.1 | Operating temperature range | $T_{case}$ | -55 | +150 | $^{\circ}C$ | 4.2 | Storage temperature range | $T_{stg}$ | -55 | +150 | $^{\circ}C$ | 4.3 | Drain-source voltage at $V_{GS} = 0$<br>$T_J = 25^{\circ}C$ to $150^{\circ}C$ IRFY9120(M) | $-V_{DSS}$ | - | 100 | V | 4.4 | Reverse gate-source voltage at $V_{DS} = 0$ | $V_{GSR}$ | - | 20 | V | 4.5 | Gate-drain voltage with source open circuit | $-V_{GDO}$ | - | 20 | V | 4.7 | Continuous drain current<br>@ $T_{case} = 25^{\circ}C$ IRFY9120(M) | $-I_D$ | - | 5.3 | A | 4.71 | Pulsed drain current<br>@ $T_{case} = 25^{\circ}C$ IRFY9120(M) | $-I_{DM}$ | - | 21.2 | A | 4.8 | Power dissipation (see derating<br>curve page 15) $T_{case} = 25^{\circ}C$ All | $P_{tot}$ | - | 30 | W |  |  |  |
| CECC 50012<br>REFERENCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                              |                                                                                                                                                                                                                                                                                                            |                                                                                                       |       | SYMBOL      | VALUE |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | MIN                                                                                                                                          | MAX                                                                                                                                                                                                                                                                                                        | UNIT                                                                                                  |       |             |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| 4.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Operating temperature range                                                                                                                  | $T_{case}$                                                                                                                                                                                                                                                                                                 | -55                                                                                                   | +150  | $^{\circ}C$ |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| 4.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Storage temperature range                                                                                                                    | $T_{stg}$                                                                                                                                                                                                                                                                                                  | -55                                                                                                   | +150  | $^{\circ}C$ |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| 4.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Drain-source voltage at $V_{GS} = 0$<br>$T_J = 25^{\circ}C$ to $150^{\circ}C$ IRFY9120(M)                                                    | $-V_{DSS}$                                                                                                                                                                                                                                                                                                 | -                                                                                                     | 100   | V           |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| 4.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Reverse gate-source voltage at $V_{DS} = 0$                                                                                                  | $V_{GSR}$                                                                                                                                                                                                                                                                                                  | -                                                                                                     | 20    | V           |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| 4.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Gate-drain voltage with source open circuit                                                                                                  | $-V_{GDO}$                                                                                                                                                                                                                                                                                                 | -                                                                                                     | 20    | V           |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| 4.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Continuous drain current<br>@ $T_{case} = 25^{\circ}C$ IRFY9120(M)                                                                           | $-I_D$                                                                                                                                                                                                                                                                                                     | -                                                                                                     | 5.3   | A           |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| 4.71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Pulsed drain current<br>@ $T_{case} = 25^{\circ}C$ IRFY9120(M)                                                                               | $-I_{DM}$                                                                                                                                                                                                                                                                                                  | -                                                                                                     | 21.2  | A           |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| 4.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Power dissipation (see derating<br>curve page 15) $T_{case} = 25^{\circ}C$ All                                                               | $P_{tot}$                                                                                                                                                                                                                                                                                                  | -                                                                                                     | 30    | W           |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |
| See the relevant Qualified Products List for the availability of Components qualified under this detail specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                              |                                                                                                                                                                                                                                                                                                            |                                                                                                       |       |             |       |     |     |      |     |                             |            |     |      |             |     |                           |           |     |      |             |     |                                                                                           |            |   |     |   |     |                                             |           |   |    |   |     |                                             |            |   |    |   |     |                                                                    |        |   |     |   |      |                                                                |           |   |      |   |     |                                                                                |           |   |    |   |  |  |  |

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**5: CHARACTERISTICS**

$T_{case} = 25^{\circ}\text{C}$  unless otherwise stated.

+ - Indicates verified in inspection testing Clause 10.

| CECC 50012<br>REFERENCE | PARAMETER AND TEST CONDITIONS                                                                                                                                                                                         | SYMBOL           | MIN | MAX | UNITS         |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----|-----|---------------|
| <b>SECTION 1</b>        |                                                                                                                                                                                                                       |                  |     |     |               |
| + 5.1                   | Leakage current with drain short circuit to source @ $V_{GSR} = 20\text{V}$                                                                                                                                           | $-I_{GSS(1)}$    | -   | 100 | nA            |
| + 5.2                   | Leakage current with drain short circuit to source @ $V_{GSR} = 15\text{V}$ , $T_{case} = 125^{\circ}\text{C}$                                                                                                        | $-I_{GSS(2)}$    | -   | 1.0 | $\mu\text{A}$ |
| + 5.5                   | Gate-source threshold voltage @ $-V_{DS} = 20\text{V}$ , $-I_D = 250\mu\text{A}$                                                                                                                                      | $-V_{GS(TO)(1)}$ | 2.0 | 4.0 | V             |
| + 5.5.1                 | Gate-source threshold voltage @ $T_{case} = 125^{\circ}\text{C}$ , $-V_{DS} = 20\text{V}$ , $-I_D = 250\mu\text{A}$                                                                                                   | $-V_{GS(TO)(2)}$ | 1.0 | -   | V             |
| + 5.5.2                 | Gate-source threshold voltage @ $T_{case} = -55^{\circ}\text{C}$ , $-V_{DS} = 20\text{V}$ , $-I_D = 250\mu\text{A}$                                                                                                   | $-V_{GS(TO)(3)}$ | -   | 5.0 | V             |
| + 5.6                   | On-state drain current @ $-V_{GS} = 10\text{V}$ ,<br>$-V_{DS} = 10\text{V}$ IRFY9120(M)                                                                                                                               | $-I_D$           | 5.3 | -   | A             |
| + 5.7                   | Input capacitance, $f = 1\text{ MHz}$ , $-V_{DS} = 25\text{V}$ ,<br>$-V_{GS} = 0\text{V}$ IRFY9120(M)                                                                                                                 | $C_{11ss}$       | -   | 650 | pF            |
| + 5.9                   | Short circuit forward transconductance @<br>$V_{DS} = -25\text{V}$<br>$-I_D = 3.5\text{A}$ IRFY9120(M)<br><br>Pulse conditions $t_p < 300\mu\text{s}$ , duty cycle $< 2\%$ .<br><br>See Appendix II for test circuit. | $g_{21s}$        | 0.9 | -   | S             |

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**5: CHARACTERISTICS**

$T_{case} = 25^{\circ}\text{C}$  unless otherwise stated.

+ - Indicates verified in inspection testing Clause 10.

| CECC 50012<br>REFERENCE | PARAMETER AND TEST CONDITIONS                                                                                                   | SYMBOL        | MIN | MAX  | UNITS         |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------|-----|------|---------------|
| <b>SECTION 3</b>        |                                                                                                                                 |               |     |      |               |
| + 5.7                   | Drain cut-off current @ $V_{GS} = 0\text{V}$<br>$-V_{DS} = 100\text{V}$ IRFY9120(M)                                             | $-I_{DSX(1)}$ | -   | 250  | $\mu\text{A}$ |
| + 5.7.1                 | Drain cut-off current @ $V_{GS} = 0\text{V}$ , $T_C = 125^{\circ}\text{C}$<br>$-V_{DS} = 80\text{V}$ IRFY9120(M)                | $-I_{DSX(2)}$ | -   | 1.0  | mA            |
| + 5.8                   | Drain-source on-state voltage @ $V_{GS} = -10\text{V}$<br>$-I_D = 3.5\text{A}$ IRFY9120(M)                                      | $-V_{DS(on)}$ | -   | 2.10 | V             |
| + 5.9                   | Small signal common source, capacitance @<br>$f = 1\text{MHz}$ , $-V_{DS} = 25\text{V}$ , $-V_{GS} = 0\text{V}$                 |               |     |      |               |
| + 5.9.2                 | Output capacitance<br>IRFY9120(M)                                                                                               | $C_{22ss}$    | -   | 350  | pF            |
| + 5.9.3                 | Reverse transfer capacitance<br>IRFY9120(M)                                                                                     | $C_{12ss}$    | -   | 100  | pF            |
| + 5.10                  | Switching times @ $-V_{GS(on)} = 10\text{V}$<br>Turn-on delay time<br>$-I_D = 3.5\text{A}$ , $-V_{DD} = 50\text{V}$ IRFY9120(M) | $t_{d(on)}$   | -   | 50   | ns            |
|                         | Rise time<br>$-I_D = 3.5\text{A}$ , $-V_{DD} = 50\text{V}$ IRFY9120(M)                                                          | $t_r$         | -   | 100  | ns            |

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**5: CHARACTERISTICS**

$T_{case} = 25^{\circ}\text{C}$  unless otherwise stated.

+ - Indicates verified in inspection testing Clause 10.

| CECC 50012<br>REFERENCE      | PARAMETER AND TEST CONDITIONS                                                   | SYMBOL                              | MIN    | MAX       | UNITS      |
|------------------------------|---------------------------------------------------------------------------------|-------------------------------------|--------|-----------|------------|
| SECTION 3<br>+ 5.10(cont)    | Fall time<br>$-I_D = 3.5\text{A}, -V_{DD} = 50\text{V}$ IRFY9120(M)             | $t_f$                               | -      | 100       | ns         |
|                              | Turn-off delay time<br>$-I_D = 3.5\text{A}, -V_{DD} = 50\text{V}$ IRFY9120(M)   | $t_{d(off)}$                        | -      | 100       | ns         |
|                              | See Appendix II for test circuit                                                |                                     |        |           |            |
| SECTION 1<br>AND 3<br>+ 5.11 | Thermal resistance, junction to ambient<br>Thermal resistance, junction to case | $R_{th(j-amb)}$<br>$R_{th(j-case)}$ | -<br>- | 80<br>4.1 | K/W<br>K/W |
|                              | D.C. Isolation voltage, terminals to case<br>(All terminals shorted)            | $V_{INS}$                           | 1000   | -         | V          |

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**6: MARKING**

The following shall be marked on the device, in the following order of precedence, as space permits.  
All the information shall appear on the primary pack used as initial protection or wrapping for delivery:-

1. The manufacturer's type number.
2. Date Code.
3. Factory identification code.
4. Level of quality assessment and screening level (if required).  
Mark of conformity unless a certificate of conformity is used.

Each package containing one or more of these transistors shall contain all the above markings and in addition:-

5. This detail specification number (CECC 50012-063) followed by the letter defining the level of assessment and, if applicable the letter identifying the screening sequence.
6. A 'STATIC SENSITIVE' warning label.

**7: ORDERING INFORMATION**

The following minimum information is necessary to order a specific device.

1. Precise type number.
2. This detail specification number, issue number and date.
3. Level of quality assessment and screening level (if required).

Example:-

to CECC 50012-063 Issue 1 Level E/B

**8: RELATED DOCUMENTS**

- |            |                                                                                  |
|------------|----------------------------------------------------------------------------------|
| CECC 50000 | Generic Specification for discrete semiconductors.                               |
| CECC 00007 | Basic Specification. Sampling plans and procedures for inspection by attributes. |
| IEC 68-2   | Environmental testing of electronic components and electronic equipment.         |
| IEC 191-2  | Mechanical standardization of semiconductor devices dimensions.                  |

**9: RECOMMENDED HANDLING PRECAUTIONS: STATIC SENSITIVE DEVICES**

To prevent damage by static discharge to these devices during handling, the procedures specified in BS 5783 'Handling procedures for static sensitive devices' should be followed.

**10: TEST CONDITIONS AND INSPECTION REQUIREMENTS**

These are given in the following tables, where the values and exact test conditions to be used should be specified as required for a given type in line with the indications given in CECC 50000 for the relevant test.

**11:  $V_{INS}$  TESTING**

The testing of  $V_{INS}$  shown in section 5 is part of 100% testing carried out in production.

**CECC 50012-063**  
Issue 1

| <p><b>GROUP A</b><br/>Lot by Lot</p> <p>AQL given in %</p> <p>All tests are non-destructive (3.5.6 of CECC 50000)<br/>           Clause numbers are made with respect to CECC 50000 unless otherwise stated<br/>           Pulse tests: <math>t_p &lt; 300\mu s</math>, duty cycle <math>&lt; 2\%</math> where indicated.</p> |                |                                                                   |                         |      |         |         |      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------|-------------------------|------|---------|---------|------|
| EXAMINATION<br>OR<br>TEST                                                                                                                                                                                                                                                                                                     | REF            | CONDITIONS<br>$@T_{case} = 25^\circ C$<br>UNLESS OTHERWISE STATED | INSPECTION REQUIREMENTS |      |         |         |      |
|                                                                                                                                                                                                                                                                                                                               |                |                                                                   | LIMITS                  |      |         | LEVEL E |      |
|                                                                                                                                                                                                                                                                                                                               |                |                                                                   | MIN                     | MAX  | UNIT    | IL      | AQL  |
| <b>SUBGROUP A1</b>                                                                                                                                                                                                                                                                                                            |                |                                                                   |                         |      |         | I       | 0.65 |
| Visual inspection                                                                                                                                                                                                                                                                                                             | 4.2.1          |                                                                   |                         |      |         |         |      |
| <b>SUBGROUP A2a</b>                                                                                                                                                                                                                                                                                                           |                |                                                                   |                         |      |         | II      | 0.15 |
| Non-operative<br>$-I_{GSS(1)}$                                                                                                                                                                                                                                                                                                | 4.3.4<br>T-071 | Short or open circuit<br>$V_{GSR} = 20V$                          | -                       | 100  | nA      |         |      |
| $-V_{GS(TO)(1)}$                                                                                                                                                                                                                                                                                                              | 4.3.4<br>T-075 | $-V_{DS} = 20V$                                                   | 2.0                     | 4.0  | V       |         |      |
| <b>SUBGROUP A2b</b>                                                                                                                                                                                                                                                                                                           |                |                                                                   |                         |      |         | II      | 0.4  |
| Leakage current<br>$-I_{GSS(1)}$                                                                                                                                                                                                                                                                                              | 4.3.4<br>T-071 | $V_{GSR} = 20V$<br>$-V_{DS} = 0V$                                 | -                       | 100  | nA      |         |      |
| Drain cut off<br>current $-I_{DSX(1)}$                                                                                                                                                                                                                                                                                        | 4.3.4<br>T-073 | $-V_{GS} = 0V$<br><br>$-V_{DS} = 100V$ IRFY9120(M)                | -                       | 250  | $\mu A$ |         |      |
| Gate source<br>threshold voltage<br>$-V_{GS(TO)(1)}$                                                                                                                                                                                                                                                                          | 4.3.4<br>T-075 | $-V_{DS} = 20V$<br>$-I_D = 250\mu A$                              | 2.0                     | 4.0  | V       |         |      |
| Drain current<br>$-I_D$                                                                                                                                                                                                                                                                                                       | 4.3.4<br>T-072 | $-V_{GS} = 7V$<br><br>$-V_{DS} = 5V$ IRFY9120(M)                  | 1.2                     | 21.2 | A       |         |      |