

## MAXIMUM CABLE PARAMETERS

| Model no.               | Number of single channels inter-connected within hazardous area | Earth <sup>1</sup> return used? | Maximum permissible cable parameters <sup>2</sup> |                 |                  |                   |                 | Matched <sup>3</sup> power (W) |
|-------------------------|---|---------------------------------|---|-----------------|------------------|-------------------|-----------------|--------------------------------|
|                         |   |                                 | BASEEFA (group IIC (hydrogen))                    |                 |                  | FM (Groups A & B) |                 |                                |
|                         |   |                                 | Capacitance (µF)                                  | Inductance (mH) | L/R ratio (µH/Ω) | Capacitance (µF)  | Inductance (mH) |                                |
| <b>MTL7106/7206</b>     | <b>1</b>  | <b>Yes</b>                      | <b>0.083</b>                                      | <b>4.1</b>      | <b>54</b>        | <b>0.14</b>       | <b>4.27</b>     | <b>0.65</b>                    |
| <b>MTL7207+</b>         | <b>2</b>  | <b>Yes</b>                      | <b>0.083</b>                                      | <b>4.1</b>      | <b>54</b>        | <b>0.12</b>       | <b>4.0</b>      | <b>0.65</b>                    |
| <b>MTL7208+</b>         | <b>1</b>  | <b>Yes</b>                      | <b>0.083</b>                                      | <b>4.1</b>      | <b>54</b>        | <b>0.12</b>       | <b>4.0</b>      | <b>0.65</b>                    |
| MTL7122+                | 1   | Yes                             | 0.165   | 1.66            | 44               | 0.2               | 1.4             | 0.81                           |
| <b>MTL7028+/7128+</b>   | <b>1</b>  | <b>Yes</b>                      | <b>0.083</b>                                      | <b>4.1</b>      | <b>54</b>        | <b>0.12</b>       | <b>4.0</b>      | <b>0.65</b>                    |
| MTL7128P+               | 1   | Yes                             | 0.042   | 1.26            | 42               | 0.16              | 2.86            | 0.83                           |
| MTL7028-/7128-          | 1   | Yes                             | 0.083   | 4.1             | 54               | 0.13              | 4.0             | 0.65                           |
| MTL7129P+               | 1   | Yes                             | -   | -               | -                | 0.49              | 6.25            | 1.19                           |
| <b>MTL7055ac</b>        | <b>1</b>  | <b>Yes</b>                      | <b>1000</b>                                       | <b>0.4</b>      | <b>158</b>       | <b>1000</b>       | <b>0.4</b>      | <b>0.23</b>                    |
|                         | <b>2</b>  | <b>Yes</b>                      | <b>1000</b>                                       | <b>0.1</b>      | <b>79</b>        | <b>150</b>        | <b>0.1</b>      | <b>0.45</b>                    |
|                         | <b>2</b>  | <b>No</b>                       | <b>40</b>   | <b>0.4</b>      | <b>79</b>        | <b>150</b>        | <b>0.1</b>      | <b>0.45</b>                    |
|                         | <b>3</b>  | <b>No</b>                       | <b>40</b>   | <b>0.22</b>     | <b>59</b>        | -                 | -               | <b>0.68</b>                    |
|                         | <b>4</b>  | <b>Yes</b>                      | <b>40</b>   | <b>0.035</b>    | <b>31.25</b>     | -                 | -               | <b>0.92</b>                    |
| MTL7056ac               | 1   | Yes                             | 1000  | 0.4             | 158              | -                 | -               | 0.23                           |
|                         | 3   | No                              | 40  | 0.22            | 59               | -                 | -               | 0.68                           |
| <b>MTL7060ac/7160ac</b> | <b>1</b>  | <b>Yes</b>                      | <b>4.9</b>  | <b>2.47</b>     | <b>131</b>       | <b>4.50</b>       | <b>2.50</b>     | <b>0.27</b>                    |
|                         | <b>2</b>  | <b>Yes</b>                      | <b>4.9</b>  | <b>0.61</b>     | <b>65</b>        | -                 | -               | <b>0.54</b>                    |
| MTL7061Pac/7161Pac      | 2   | No                              | 0.309   | 54.2            | 307              | 0.42              | 13.0            | 0.12                           |
| MTL7261ac               | 1   | Yes                             | 4.9   | 3.55            | 158              | 3.1               | 3.5             | 0.23                           |
|                         | 2   | Yes                             | 4.9   | 0.88            | 79               | 0.4               | 1.0             | 0.45                           |
| MTL7162+                | 1   | Yes                             | 3.0   | 0.89            | 71               | 3.0               | 1.0             | 0.50                           |
|                         | 2   | Yes                             | 3.0   | 0.22            | 35               | -                 | -               | 1.0                            |
|                         | 2   | No                              | 1.97  | 2.93            | 117              | -                 | -               | -                              |
| MTL7164+                | 1   | Yes                             | 1.41  | 246             | 987              | 1.5               | 200             | 0.04                           |
|                         | 2   | Yes                             | 1.41  | 61.7            | 493              | 1.0               | 60              | 0.08                           |
| MTL7264ac               | 1   | Yes                             | 1.41  | 246             | 987              | 1.5               | 200             | 0.04                           |
|                         | 2   | Yes                             | 1.41  | 61.7            | 493              | 0.18              | 60              | 0.08                           |
|                         |   | No                              | 0.125   | 246             | 493              | 0.18              | 60              | 0.08                           |
| MTL7265ac               | 1   | Yes                             | 0.58  | 1.58            | 63               | 0.7               | 1.3             | 0.56                           |
|                         | 2   | Yes                             | 0.58  | 0.4             | 31               | 0.7               | 1.4             | 1.13                           |
| MTL7066Pac/7166Pac      | 2   | Yes                             | 1.41  | 0.36            | 37               | 1.80              | 1.27            | 0.96                           |
| MTL7167+                | 1   | Yes                             | 0.58  | 1.58            | 63               | 0.7               | 1.7             | 0.56                           |
|                         | 2   | Yes                             | 0.58  | 0.4             | 31               | 0.5               | 0.4             | 1.13                           |
| MTL7278ac               | 1   | Yes                             | 0.083   | 16.1            | 108              | 0.12              | 14              | 0.33                           |
|                         | 2   | Yes                             | 0.083   | 4.02            | 54               | 0.12              | 4.2             | 0.66                           |
| <b>MTL7087+/7187+</b>   | <b>2</b>  | <b>Yes</b>                      | <b>0.083</b>                                      | <b>4.1</b>      | <b>54</b>        | <b>0.13</b>       | <b>4.2</b>      | <b>0.65</b>                    |
| MTL7087P+/7187P+        | 2   | Yes                             | 0.042   | 1.26            | 42               | 0.13              | 2.47            | 0.84                           |
| MTL7096-/7196-          | 2   | Yes                             | 0.134   | 1.86            | 44               | 0.14              | 1.71            | 0.83                           |

### Notes

Key barriers in bold

<sup>1</sup>If values are not quoted for when on earth return is not used, then those for an earth return ('Yes' in the tables) are applicable

<sup>2</sup>For most practical purposes, the values of the parameters for groups IIB and IIA are respectively 3 and 8 times the values for group IIC

<sup>3</sup>The maximum power that can be drawn from the barrier or barrier combination under fault conditions; used for assessing the temperature classification of 'simple' hazardous-area apparatus

## TERMINOLOGY

### Safety description

The description of a barrier, eg, '10V 50Ω 200mA', refers to the maximum voltage of the terminating Zener or forward diode when an internal safety fuse is blowing, the minimum value of the terminating resistor, and the corresponding maximum short-circuit current. It is an indication of the fault energy that can be developed in the hazardous area and not of the working voltage or end-to-end resistance.

### Polarity

Barriers may be polarised positive ('+') or negative ('-') or non-polarised ('ac'). Polarised barriers accept and/or deliver safe-area voltages of the specified polarity only. Non-polarised barriers support voltages of either polarity applied at either end. The exception is the MTL7206 which takes a positive supply but provides an output voltage which is negative with respect to earth.

### End-to-end resistance

The resistance between the two ends of a barrier channel at 20°C, ie, of the resistor and the fuse(s). If diodes or transistors are present, the voltage drop of these is also quoted.

### Working voltage (Vwkg)

The greatest steady voltage, of appropriate polarity, that can be applied between the safe-area terminal of a 'basic' barrier channel and earth at 20°C for the specified leakage current, with the hazardous-area terminal open circuit.

### Maximum voltage (Vmax)

The greatest steady voltage, of appropriate polarity, that can be applied continuously between the safe-area terminal of any barrier channel and earth at 20°C without blowing the internal safety fuse/external replaceable fuse (MTL7100). For 'basic' barriers it is specified with the hazardous-area terminal open circuit; if current is drawn in the hazardous area, the maximum voltage for these barriers is reduced. The 'ac' channels of 'basic' barriers withstand voltages of the opposite polarity also – see the circuit diagrams included under 'Applications'.

### Fuse ratings

The greatest current that can be passed continuously through the fuse for 1000 hours at 35°C.

### Maximum safe-area voltage (U<sub>m</sub>)

The maximum permissible safe-area voltage (U<sub>m</sub>) for MTL7000 Series barriers is 250V ac/dc