

# 30 - 50 Volt MOSFETs

A series of low voltage MOSFETs containing high density planar devices optimized to provide low on-resistance with a low gate charge and trench MOSFETs. The trench MOSFETs enable much higher current handling capability in the packages on offer.

Typical applications include:-

- Non isolated DC-DC converter circuits
- Motor control
- Battery chargers
- Class D audio stages
- Battery pack switches
- Disconnect switches
- Hot-swap circuits
- CCFL backlight inverters

## N-Channel

| Part Number     | Package | Polarity | BV <sub>DSS</sub> | I <sub>D</sub> | P <sub>D</sub> | R <sub>DS(on)</sub> Max @   |                            | C <sub>iss</sub> (typ) @<br>V <sub>DS</sub> = 15V<br>pF | Q <sub>g</sub> (typ) @<br>V <sub>GS</sub> = 10V<br>nC |
|-----------------|---------|----------|-------------------|----------------|----------------|-----------------------------|----------------------------|---------------------------------------------------------|-------------------------------------------------------|
|                 |         |          |                   |                |                | V <sub>GS</sub> = 4.5V<br>Ω | V <sub>GS</sub> = 10V<br>Ω |                                                         |                                                       |
| ZXMN3B04N8 (2)  | SO8     | N        | 30                | 7.6            | 2.5            | 0.025                       | -                          | -                                                       | -                                                     |
| ZXMN3A04DN8 (2) | SO8     | 2 x N    | 30                | 7.6            | 2.1            | 0.030                       | 0.020                      | 1800                                                    | 35.7                                                  |
| ZXMN3A06DN8 (1) | SO8     | 2 x N    | 30                | 6.9            | 2.1            | 0.050                       | 0.035                      | 750                                                     | 17.5                                                  |
| ZXMN3A02X8 (1)  | MSOP8   | N        | 30                | 6.7            | 1.8            | 0.035                       | 0.025                      | 1400                                                    | 26.8                                                  |
| ZXM64N03X       | MSOP8   | N        | 30                | 5.0            | 1.8            | 0.060                       | 0.045                      | 970                                                     | 22.0                                                  |
| ZXMN3A03E6 (1)  | SOT23-6 | N        | 30                | 4.6            | 1.7            | 0.065                       | 0.050                      | 600                                                     | 12.6                                                  |
| ZXMN3A01E6 (1)  | SOT23-6 | N        | 30                | 3.0            | 1.7            | 0.180                       | 0.120                      | 190                                                     | 3.9                                                   |
| ZXM62N03E6      | SOT23-6 | N        | 30                | 3.2            | 1.7            | 0.150                       | 0.110                      | 390                                                     | 7.0                                                   |
| ZXMD63N03X      | MSOP8   | 2 x N    | 30                | 2.3            | 1.25           | 0.200                       | 0.135                      | 300                                                     | 6.1                                                   |
| ZXMN3A01F (1)   | SOT23   | N        | 30                | 2.0            | 0.8            | 0.180                       | 0.120                      | 190                                                     | 3.9                                                   |
| ZXM61N03F       | SOT23   | N        | 30                | 1.4            | 0.8            | 0.300                       | 0.220                      | 160                                                     | 3.2                                                   |
| ZXM64N035L3 (1) | TO220   | N        | 35                | 13.0           | 20             | 0.070                       | 0.060                      | 970                                                     | 22.0                                                  |
| ZXM64N035G (1)  | SOT223  | N        | 35                | 6.7            | 3.9            | 0.062                       | 0.060                      | 970                                                     | 22.0                                                  |
| ZXMN4A06G       | SOT223  | N        | 40                | 6.7            | 3.9            | 0.075                       | 0.050                      | -                                                       | -                                                     |
| BSS138          | SOT23   | N        | 50                | 0.2            | 0.36           | 3.5 @ 5V                    | -                          | 35                                                      | -                                                     |

## P-Channel

| Part Number     | Package | Polarity | BV <sub>DSS</sub> | I <sub>D</sub> | P <sub>D</sub> | R <sub>DS(on)</sub> Max @    |                             | C <sub>iss</sub> (typ) @<br>V <sub>DS</sub> = -15V<br>pF | Q <sub>g</sub> (typ) @<br>V <sub>GS</sub> = -10V<br>nC |
|-----------------|---------|----------|-------------------|----------------|----------------|------------------------------|-----------------------------|----------------------------------------------------------|--------------------------------------------------------|
|                 |         |          |                   |                |                | V <sub>GS</sub> = -4.5V<br>Ω | V <sub>GS</sub> = -10V<br>Ω |                                                          |                                                        |
| ZXMP4435N8 (2)  | SO8     | P        | -30               | -8.6           | 2.5            | 0.035                        | 0.02                        | 2490                                                     | 65.0                                                   |
| ZXM66P03N8 (1)  | SO8     | P        | -30               | -7.9           | 2.5            | 0.035                        | 0.025                       | 2000                                                     | 62.5                                                   |
| ZXMP3A16N8 (2)  | SO8     | P        | -30               | -5.8           | 2.5            | 0.066                        | 0.044                       | 1050                                                     | 27.0                                                   |
| ZXMP3A16DN8 (2) | SO8     | 2 x P    | -30               | -5.3           | 2.1            | 0.066                        | 0.044                       | 1050                                                     | 27.0                                                   |
| ZXMD65P03N8 (1) | SO8     | 2 x P    | -30               | -4.8           | 2.0            | 0.080                        | 0.055                       | 950                                                      | 25.7                                                   |
| ZXMP3A17DN8 (2) | SO8     | 2 x P    | -30               | -4.1           | 2.1            | 0.106                        | 0.072                       | 690                                                      | 18.0                                                   |
| ZXM64P03X       | MSOP8   | P        | -30               | -3.8           | 1.8            | 0.100                        | 0.075                       | 875                                                      | 37.0                                                   |
| ZXMP3A17E6 (2)  | SOT23-6 | P        | -30               | -3.7           | 1.7            | 0.106                        | 0.072                       | 690                                                      | 18.0                                                   |
| ZXM62P03E6      | SOT23-6 | P        | -30               | -2.6           | 1.7            | 0.230                        | 0.150                       | 350                                                      | 8.0                                                    |
| ZXMD63P03X      | MSOP8   | 2 x P    | -30               | -2.0           | 1.25           | 0.270                        | 0.185                       | 280                                                      | 5.4                                                    |
| ZXMP3A13F (2)   | SOT23   | P        | -30               | -1.5           | 0.80           | 0.322                        | 0.205                       | 200                                                      | 5.2                                                    |
| ZXM61P03F       | SOT23   | P        | -30               | -1.1           | 0.80           | 0.550                        | 0.350                       | 145                                                      | 3.7                                                    |
| ZXM64P035L3 (1) | TO220   | P        | -35               | -12.0          | 20             | 0.105                        | 0.075                       | 875                                                      | 37.0                                                   |
| ZXM64P035G (1)  | SOT223  | P        | -35               | -5.3           | 3.9            | 0.105                        | 0.075                       | 875                                                      | 37.0                                                   |
| ZXMP4A16G       | SOT223  | P        | -40               | -5.5           | 3.9            | 0.120                        | 0.70                        | -                                                        | -                                                      |
| BS250P          | E-Line  | P        | -45               | -0.23          | 0.7            | -                            | 14                          | 60                                                       | 1.6                                                    |
| BS250F          | SOT23   | P        | -45               | -0.09          | 0.33           | -                            | 14                          | 30                                                       | 0.75                                                   |
| ZVP4105A        | E-Line  | P        | -50               | -0.18          | 0.625          | 10 @ 5V                      | -                           | -                                                        | -                                                      |
| BSS84           | SOT23   | P        | -50               | -0.13          | 0.36           | 10 @ 5V                      | -                           | -                                                        | -                                                      |

## N & P-Channel Combinations

| Part Number     | Package | Polarity | BV <sub>DSS</sub> | I <sub>D</sub> | P <sub>D</sub> | R <sub>DS(on)</sub> Max @   |                            | C <sub>iss</sub> (typ) @<br>V <sub>DS</sub> = 15V<br>pF | Q <sub>g</sub> (typ) @<br>V <sub>GS</sub> = 10V<br>nC |
|-----------------|---------|----------|-------------------|----------------|----------------|-----------------------------|----------------------------|---------------------------------------------------------|-------------------------------------------------------|
|                 |         |          |                   |                |                | V <sub>GS</sub> = 4.5V<br>Ω | V <sub>GS</sub> = 10V<br>Ω |                                                         |                                                       |
| ZXMC3A16DN8 (2) | SO8     | N + P    | 30                | 5.9            | 2.1            | 0.050                       | 0.035                      | 750                                                     | 17.5                                                  |
|                 |         |          | -30               | -5.3           | 2.1            | 0.066                       | 0.044                      | 1050                                                    | 27                                                    |
| ZXMD63C03X      | MSOP8   | N + P    | 30                | 2.3            | 1.25           | 0.2                         | 0.135                      | 300                                                     | 6.1                                                   |
|                 |         |          | -30               | -2.0           | 1.25           | 0.27                        | 0.185                      | 280                                                     | 5.4                                                   |

Notes: (1) - Provisional data

(2) - Advanced information (samples Q202)