# Xiaomi M365 Mi Scooter 2 Classic/Pro – Research of spare MOSFETs

| Parameters / Characteristics | Drain-to-Source Breakdown Voltage | Continuous Drain Curret | Pulsed Drain Current | Maximum Power Dissipation | Static Drain-to-Source On-Resistance | Gate Charge Total | Turn On Delay Time | Rise Time | Turn Off Delay Time | Fall Time | Diode Continous Forward Current | Diode Pulse Current | Diode Forward Voltage | Diode Reverse Recovery Time | Diode Reverse Recovery Charge | Pricing @ mouser.com 1pcs, 2019-09-30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Symbol** | $V_{DS}$ | $I_D$ | $I_{DM}$ | $P_D$ | $R_{DS(on)}$ | $Q_g$ | $t_{d(on)}$ | $t_r$ | $t_{d(off)}$ | $t_f$ | $I_{SD}$ | $I_{SDM}$ | $V_{SD}$ | $t_{rr}$ | $Q_{rr}$ | |
| **Part Number – Manufacturer – Note / Unit** | **V** | **A** | **A** | **W** | **mΩ** | **nC** | **ns** | **ns** | **ns** | **ns** | **A** | **A** | **V** | **ns** | **nC** | **$** |
| CSD18536KCS – Texas Instruments – Too low Voltage | 60 | 349 | 400 | 375 | 1,3 | 108 | 11 | 5 | 24 | 4 | n/a | n/a | 0,9 | 86 | 323 | 4,17 |
| *NCEP85T14 – NCE Power – It spoils…* | *85* | *140* | *420* | *200* | *3,6* | *84* | *20* | *10* | *30* | *35* | *140* | *n/a* | *max. 1,2* | *83* | *194* | *n/a* |
| *STP15810 – STMicroelectronics – It spoils…* | *100* | *110* | *440* | *250* | *3,6* | *117* | *33* | *57* | *72* | *33* | *110* | *440* | *max. 1,2* | *70* | *165* | *n/a* |
| IPP120N10S4-03 – Infineon | 100 | 120 | 480 | 250 | 3,4 | 108 | 20 | 10 | 45 | 40 | 120 | 480 | 1 | 80 | 170 | 4,5 |
| SQP120N10-3m8 – Vishay / Siliconix | 100 | 120 | 480 | 250 | 3 | 125 | 16 | 110 | 40 | 12 | 120 | 480 | 0,9 | n/a | n/a | 3,02 |
| SQP120N10-09 – Vishay / Siliconix | 100 | 120 | 480 | 375 | 7,9 | 120 | 21 | 24 | 52 | 16 | 120 | 480 | 0,9 | n/a | n/a | 2,83 |
| SUP70040E – Vishay / Siliconix | 100 | 120 | 480 | 375 | 3,2 | 76 | 15 | 22 | 55 | 15 | n/a | 480 | 0,8 | n/a | n/a | 2,92 |
| IPP023N10N5 – Infineon Technologies | 100 | 120 | 480 | 375 | 2 | 168 | 33 | 26 | 77 | 29 | 120 | 480 | 0,9 | 99 | 287 | 5,95 |
| IRFB4310ZPbF – International Rectifier | 100 | 127 | 560 | 250 | 4,8 | 120 | 20 | 60 | 55 | 57 | 127 | 560 | max. 1,3 | 40 | 58 | 2,63 |
| DMTH10H005SCT – Diodes Incorporated | 100 | 140 | 400 | 187 | 5 | 111,7 | 29,9 | 30,3 | 79,7 | 41,6 | 100 | 400 | max. 1,3 | 70 | 181 | 1,69 |
| *NCEP01T13 – NCE Power – Does it spoil?* | *100* | *150* | *500* | *220* | *3,7* | *100* | *20* | *78* | *50* | *16* | *135* | *n/a* | *max. 1,2* | *65* | *144* | *n/a* |
| SUP70030E – Vishay / Siliconix | 100 | 150 | 500 | 375 | 2,65 | 142,4 | 30 | 13 | 50 | 15 | n/a | 250 | 0,8 | 76 | 205 | 3,2 |
| **IRFB4110PbF – International Rectifier** | **100** | **180** | **670** | **370** | **3,7** | **150** | **25** | **67** | **78** | **88** | **170** | **670** | **max. 1,3** | **50** | **94** | **3,3** |
| IRFB4110GPBF – International Rectifier – Halogen-free | 100 | 180 | 670 | 370 | 3,7 | 150 | 25 | 67 | 78 | 88 | 170 | 670 | max. 1,3 | 50 | 94 | 3,45 |
| STP310N10F7 – STMicroelectronics | 100 | 180 | 720 | 315 | 2,3 | 180 | 62 | 108 | 148 | 40 | 180 | 720 | max. 1,5 | 85 | 200 | 6,27 |
| STP315N10F7 – STMicroelectronics | 100 | 180 | 720 | 315 | 2,3 | 180 | 62 | 108 | 148 | 40 | 180 | 720 | max. 1,5 | 85 | 200 | 5,34 |
| IRLB4030PbF – International Rectifier – Logic Level Drive | 100 | 180 | 730 | 370 | 3,4 | 87 | 74 | 330 | 110 | 170 | 180 | 730 | max. 1,3 | 50 | 88 | 3,72 |
| CSD19535KCS – Texas Instruments | 100 | 187 | 400 | 300 | 3,6 | 78 | 32 | 15 | 60 | 5 | n/a | n/a | 0,9 | 89 | 421 | 2,9 |
| IRFS4010-7PPbF – International Rectifier – $D^2$Pak 7 Pin Package | 100 | 190 | 740 | 380 | 3,3 | 150 | 19 | 56 | 100 | 48 | 186 | 740 | max. 1,3 | 60 | 150 | 3,3 |
| TK100E10N1 – TOSHIBA | 100 | 207 | 434 | 255 | 2,8 | 140 | 59 | 32 | 140 | 45 | 100 | 434 | max. 1,2 | 93 | 220 | 3,64 |
| **FDP036N10A – ON Semiconductor / Fairchild** | **100** | **214** | **856** | **333** | **3,2** | **89** | **22** | **54** | **37** | **11** | **214** | **856** | **max. 1,25** | **72** | **129** | **3,83** |
| FDP2D3N10C – ON Semiconductor / Fairchild | 100 | 222 | 888 | 214 | 2,1 | 108 | 42 | 35 | 74 | 32 | 222 | 888 | 0,9 | 107 | 191 | 5,95 |
| TK2R9E10PL – TOSHIBA | 100 | 240 | 500 | 306 | 2,4 | 161 | 46 | 22 | 147 | 46 | n/a | 500 | max. 1,5 | 75 | 150 | 3,03 |
| **CSD19536KCS – Texas Instruments** | **100** | **259** | **400** | **375** | **2,3** | **118** | **14** | **8** | **38** | **5** | **n/a** | **n/a** | **0,9** | **110** | **548** | **4,85** |
| IPP041N12N3 – Infineon Technologies | 120 | 120 | 480 | 300 | 3,5 | 158 | 35 | 52 | 70 | 21 | 120 | 480 | 0,9 | 123 | 356 | 5,56 |
| TK72E12N1 – TOSHIBA | 120 | 179 | 360 | 255 | 3,6 | 130 | 64 | 33 | 120 | 37 | 72 | 360 | max. 1,2 | 110 | 290 | 2,31 |
| IRFB4115PbF – International Rectifier | 150 | 104 | 420 | 380 | 9,3 | 77 | 18 | 73 | 41 | 39 | 104 | 420 | max. 1,3 | 86 | 300 | 3,09 |

| **Legend:** |
|---|
| *Originally used in the Xiaomi M365 Mi Scooter 2 Classic/Pro* |
| Recommended in the "Manual 1.4.pdf" (72V 20S3P mod) |
| Recommended in the "Manual 1.4.pdf", but not fit well |
| Not usable |
| **BOLD – Recommended** |

– v1.0.4 final – 2019-09-30 – Proudly created by =JardaG – CC BY-NC-SA 4.0 –
https://github.com/JardaG/xiaomi-m365-research-of-spare-mosfets/