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|  | MOSFET  parameters and symbols | Units | Explanation |
| 1 | Output Characteristics  Ids  Vds  Vgs | A  V  V  resp. | Drain current, drain-source voltage and gate-source voltage respectively, these parameters defined the MOSFET’s working region and performance. |
| 2 | On Resistance  RDS | Ohm | It is the summation of many resistances in the MOSFET when it is on, which is useful since its secure thermal stability when devices are paralleled, In addition, it is proportional to temperature increase |
| 3 | Intrinsic  Capacitances  Ciss  Crss  Coss | pf | Capacitances are affecting the switching times.  First one is input capacitance, the second one is reverse transfer capacitance and the third one is the output capacitance. |
| 4 | Switching time  ton  tr  toff  tf | ns | Respectively turn- on time, rise time, turn off time and fall time |
| 5 | Body Diode’s  Reverse Recovery  Characteristic  trr= tr + tf | ns | It is also called as storage time. Required time for sweeping the excessive charge. |
| 6 | Transconductance gfs | A/V | It is the change proportion between drain current and gate voltage. A large transconductance is wanted in order to obtain high frequency response. |
| 7 | Gate Charge  QG | nC | It is required amount of charge for turn on and turn off transitions of MOSFET. |
| 8 | Forward Bias Safe Operating Area (FBSOA) Capability: |  | This term is a datasheet figure which shows maximum allowed operating regions and point. |
| 9 | Intrinsic Resistance  Rg | Ohm | The internal gate resistance |
| 10 | dv/dt capability  characteristic | V/ns | It is a maximum rising rate of voltage between source and drain. If this rate is exceeded gate-source voltage may go beyond threshold voltage and it may have disastrous results. |

Switching times, intrinsic capacitances, Safe Operating Area, dv/dt capability characteristics, gate charges are the 5 most important parameters for power MOSFETs.