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Differential modules over a commutative differential ring which are finitely generated and projective as ring modules, with differential homomorphisms, form an additive category. All such are shown to be direct summands of objects which are free as ring modules; those which are differential direct summands of differential direct sums of the ring are shown to be induced from the subring of constants. And any object has this form after a suitable extension of the base. Thus the K theory of the differential category reduces to that of ordinary K theory and kernels. Differential Azumaya algebras over the ring whose underlying modules are finitely generated and projective form a multiplicative category, and similar results to the above are obtained. The K theory of this multiplicative category can accordingly be analyzed in a similar way. (Received March 19, 2017)