**Layer	Input Shape	Output Shape	Explanation**
Input	32x32x1	32x32x32	- First Conv2D layer applies 32 filters with 3x3 kernels, generating 32 output channels.
Conv2D(32)	32x32x32	30x30x32	- Second Conv2D layer (32 filters) slightly reduces spatial dimensions due to zero-padding.
MaxPooling2D	30x30x32	15x15x32	- Pooling with 2x2 pool size halves spatial dimensions.
Dropout(0.3)	15x15x32	15x15x32	- Dropout randomly eliminates 30% of connections for regularization.
Conv2D(64)	15x15x32	13x13x64	- Third Conv2D layer (64 filters) increases channels, reduces spatial dimensions.
Conv2D(64)	13x13x64	11x11x64	- Fourth Conv2D layer (64 filters) further reduces spatial dimensions.
MaxPooling2D	11x11x64	5x5x64	- Pooling halves spatial dimensions again.
Dropout(0.2)	5x5x64	5x5x64	- Dropout eliminates 20% of connections.
Flatten	5x5x64	1600	- Flattens 3D output to a 1D vector for dense layers.
Dense(512)	1600	512	- Fully connected layer with 512 units.
Dense(512)	512	512	- Another fully connected layer with 512 units.
Dense(10)	512	10	- Final output layer with 10 units for 10-class classification (softmax activation).