

## Type-1/4 410K/480K-Pixel Hyper-D CCD

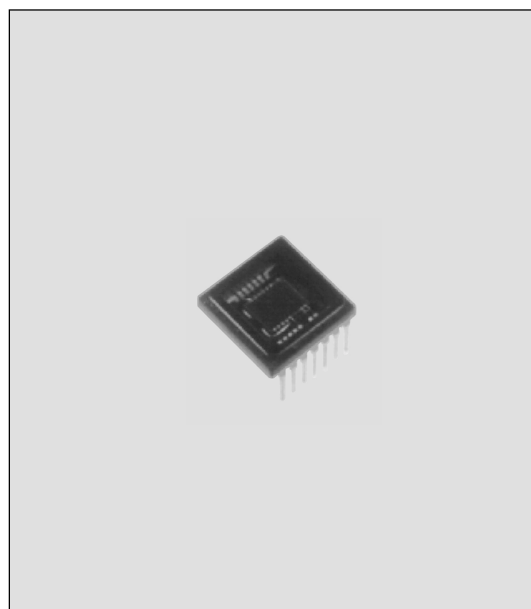
### ■ Overview

The Hyper-D CCD is a CCD area image sensor featuring an ultra-wide dynamic range that far surpasses anything achieved by competition. It has 1/4-type 410k pixels (for NTSC) /480k pixels (for PAL).

The CCD can read the following two types of signals at the same time and advance them to the signal output stage: normal image signals shot at normal shutter speed and high-brightness image signals shot at high shutter speed. By synthesizing the two signals in an external circuit, an ultra-wide dynamic range of twenty times wider than that of the conventional CCD can be obtained.

With this ultra-wide dynamic range, the CCD can provide sharp image signals for both bright and dark areas.

Accordingly, this CCD is suitable for such applications as security cameras and cameras for vehicles, which typically involve high contrast between the scene's bright and dark regions



### ■ Feature

- Industry -Leading ultra-wide dynamic range  
A clear image can be obtained even when there is a high contrast between bright and dark regions.
- This high-speed horizontal CCD can operate at the same voltage (5V) but at twice the speed of conventional models.

### ■ Applications

Security camera  
Camcorder  
FA•OA camera

### ■ Specifications and Characteristics

Product name	MN39341FT (NTSC)	MN39441FT (PAL)
Optical format	Type-1/4	
Total pixel number	816(H) × 495(V) = 403,920	798(H) × 585(V) = 466,830
Effective pixel number	771(H) × 492(V) = 379,332	753(H) × 582(V) = 438,246
Pixel size	4.75 $\mu$ m(H) × 5.55 $\mu$ m(V)	4.85 $\mu$ m(H) × 4.65 $\mu$ m(V)
Sensitivity	200 mV (typ)	180 mV (typ)
Saturation output voltage	500 mV (typ)	430 mV (typ)
Dynamic range	20 times the conventional CCD (64 times wider than at standard light exposure)	

The products and specification are subject to change without any notice. Please ask for the latest Product Standards to guarantee the satisfaction of your product requirements.

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