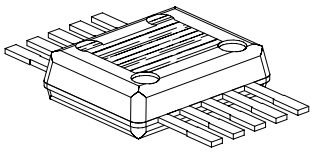
STV5805

PHOTO DETECTOR FOR DIGITAL VIDEO DISK

PRELIMINARY DATA

- LARGE BANDWIDTH (30MHz) AND LOW NOISE I/U AMPLIFIER
- SENSITIVITY SWITCHING FOR OPTICAL PICKUPS
- DETECTOR PATTERN ADAPTED FOR EFM SIGNAL DETECTION, FOCUS AND TRACKING CONTROLS



OPTOSO10L
(Plastic Transparent Package)

ORDER CODE : STV5805D

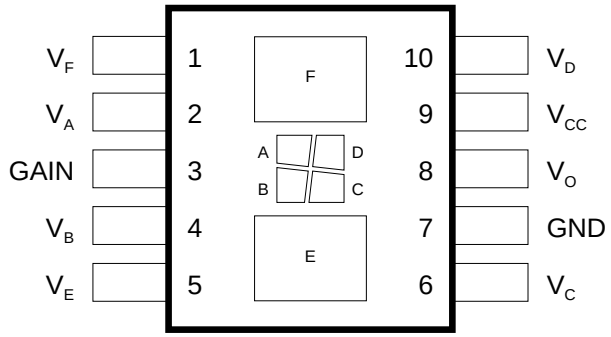
DESCRIPTION

This six diodes photodetector includes six low noise I/V amplifiers with a sensitivity switching for adaptation to different optical pickups and disks.

The detector pattern is adaptable for astigmatism focus method, 3 beams tracking and differential phase detection methods.

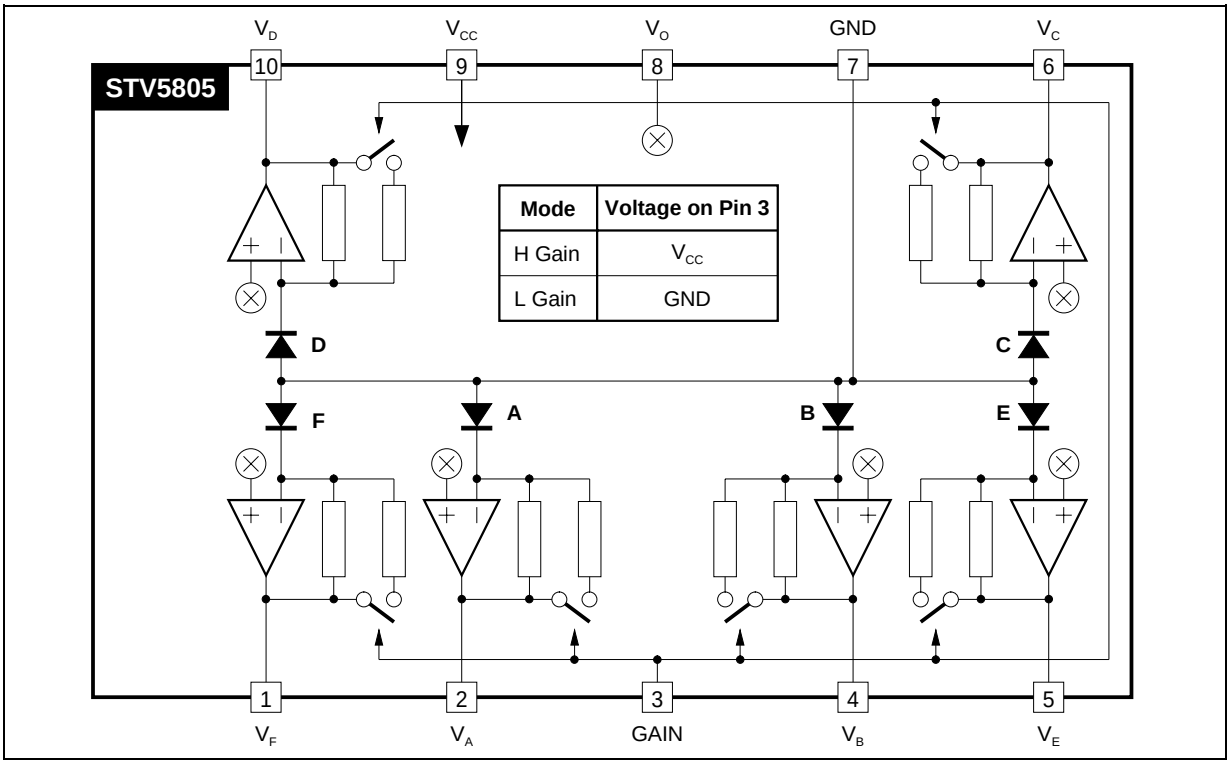
The STV5805 is adapted for pick-up of DVD-ROM and DVD players up to 3 x speed for both 1 layer and 2 layer discs.

PIN CONNECTIONS



5805-01.EPS

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Power Supply Voltage	6	V
T_j	Junction Temperature	150	^oC
T_{oper}	Operating Temperature	- 20, +70	^oC

5805-01.TBL

THERMAL DATA

Symbol	Parameter		Value	Unit
$R_{th\ (j-a)}$	Junction-ambient Thermal Resistance	Max.	100	$^oC/W$

5805-02.TBL

RECOMMENDED OPERATING CHARACTERISTICS

Symbol	Parameter	Min.	Typ.	Max.	Unit
V_{CC}	Power Supply	4.75	5	5.25	V

5805-03.TBL

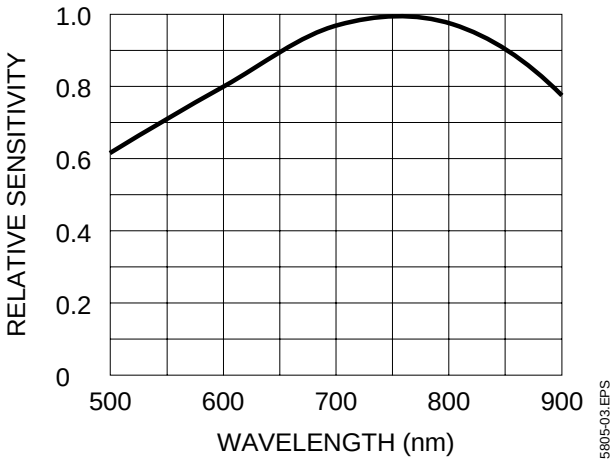
ELECTRICAL CHARACTERISTICS

(V_{CC} = 5V, V_O = 2.5V, Light wavelength = 635 to 680nm, T_{amb} = 25°C, unless otherwise specified)

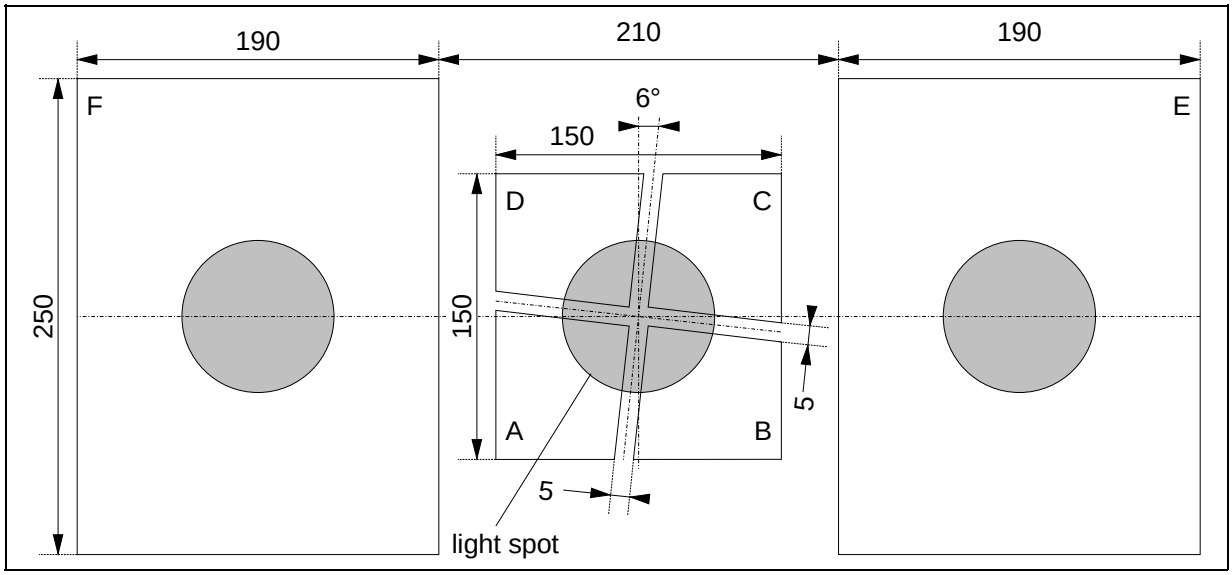
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CC}	Supply Current	Gain = H or L		25		mA
SADH SADL	Sensitivity A to D	Gain = H Gain = L	27 9	36 12	45 15	mV/µW mV/µW
SEFH SEFL	Sensitivity E, F	Gain = H Gain = L	45 15	60 20	75 35	mV/µW mV/µW
BWAD BWEF	Bandwidth at -3dB (A to D) Bandwidth at -3dB (E, F)	Gain = H or L Gain = H or L	25 2	30 5		MHz MHz
DV0	Offset Voltage versus V_0	Gain = H or L, in the dark	-15	0	15	mV
DVAB	Offset Voltage (V_A - V_B)	Gain = H or L, in the dark	-15	0	15	mV
DVCD	Offset Voltage (V_C - V_D)	Gain = H or L, in the dark	-15	0	15	mV
DVM	Offset Voltage [(V_A + V_C) - (V_B + V_D)]	Gain = H or L, in the dark	-15	0	15	mV
DVEF	Offset Voltage (V_E - V_F)	Gain = H or L, in the dark	-15	0	15	mV
ENADH ENADL	Equivalent Noise Level (A to D)	10MHz, BW = 30kHz, in the dark Gain = H Gain = L		 -74 -83	 -66 -75	 dBm dBm
ENEFH ENEFL	Equivalent Noise Level (E, F)	10MHz, BW = 30kHz, in the dark Gain = H Gain = L		 -62 -71		 dBm dBm
I_{VO}	Input Current on V_O	V_O = 2.5V		0.6		mA
I_{GAINH} I_{GAINL}	Input Current on Gain	Gain = V_{CC} Gain = GND		-1 +1		µA µA

5805-04.TBL

Figure 1 : Typical Spectral Sensitivity



DETECTOR PATTERN DIMENSIONS (Position : Center of Package) (Unit : µm)



PACKAGE MECHANICAL DATA

10 PINS - PLASTIC TRANSPARENT (OPTO)