



# STV5805

## PHOTO DETECTOR FOR DIGITAL VIDEO DISK

PRELIMINARY DATA

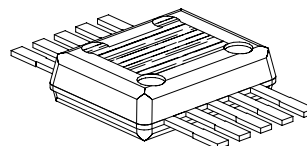
- LARGE BANDWIDTH (30MHz) AND LOW NOISE I/U AMPLIFIER
- SENSITIVITY SWITCHING FOR OPTICAL PICKUPS
- DETECTOR PATTERN ADAPTED FOR EFM SIGNAL DETECTION, FOCUS AND TRACKING CONTROLS

### 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.

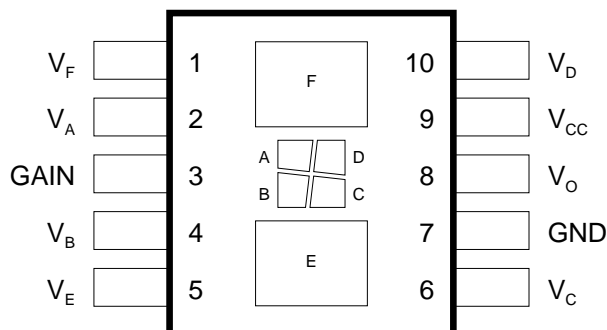
The STV5805 is adapted for pick-up of DVD-ROM and DVD players up to 3 x speed for both 1 layer and 2 layer discs.



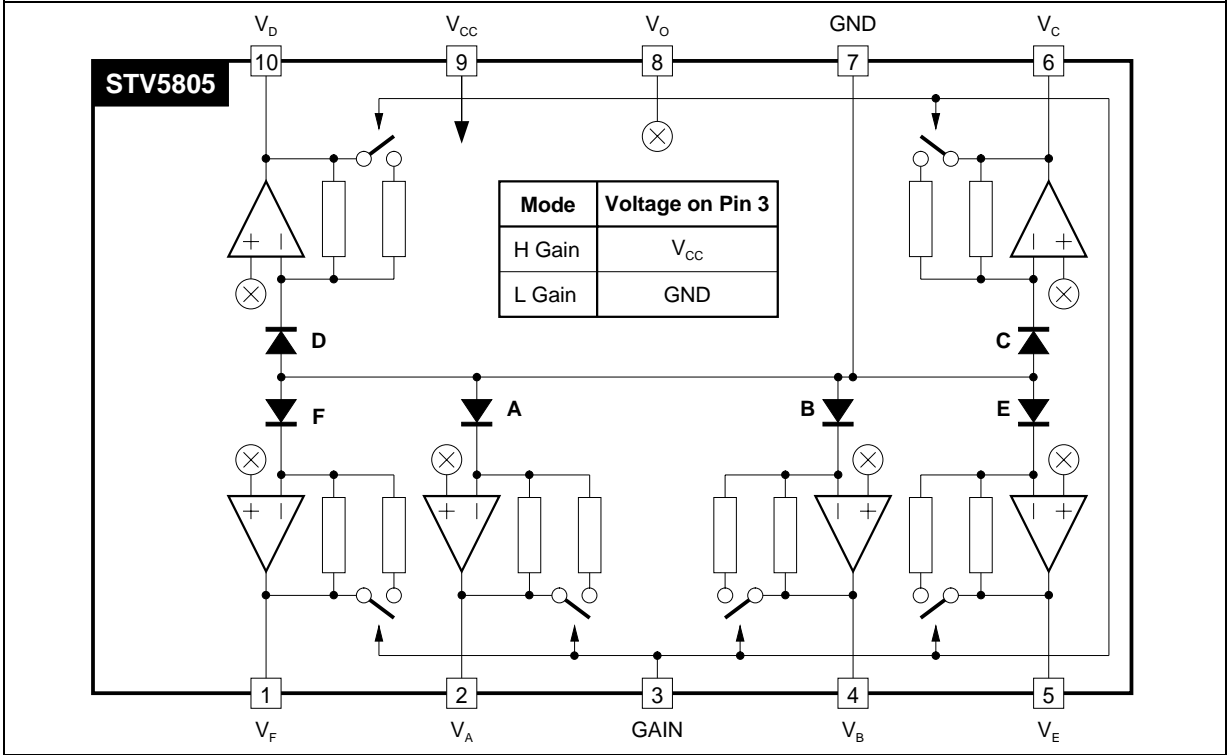
**OPTOSO10L**  
(Plastic Transparent Package)

**ORDER CODE : STV5805D**

### PIN CONNECTIONS



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

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

5805-01.TBL

THERMAL DATA

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

5805-02.TBL

RECOMMENDED OPERATING CHARACTERISTICS

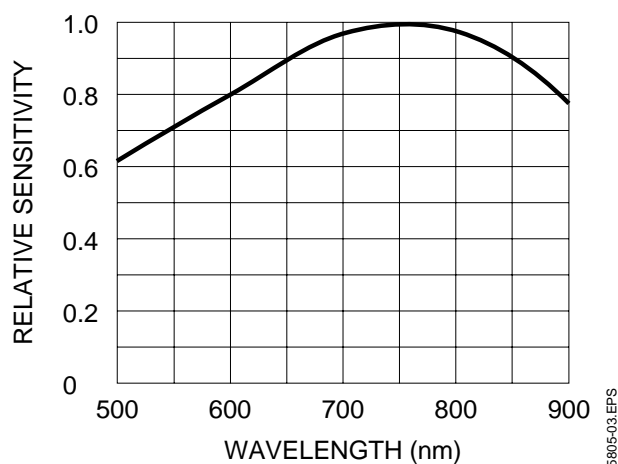
Symbol	Parameter	Min.	Typ.	Max.	Unit
$V_{CC}$	Power Supply	4.75	5	5.25	V

5805-03.TBL

**ELECTRICAL CHARACTERISTICS**(V<sub>CC</sub> = 5V, V<sub>O</sub> = 2.5V, Light wavelength = 635 to 680nm, T<sub>amb</sub> = 25°C, unless otherwise specified)

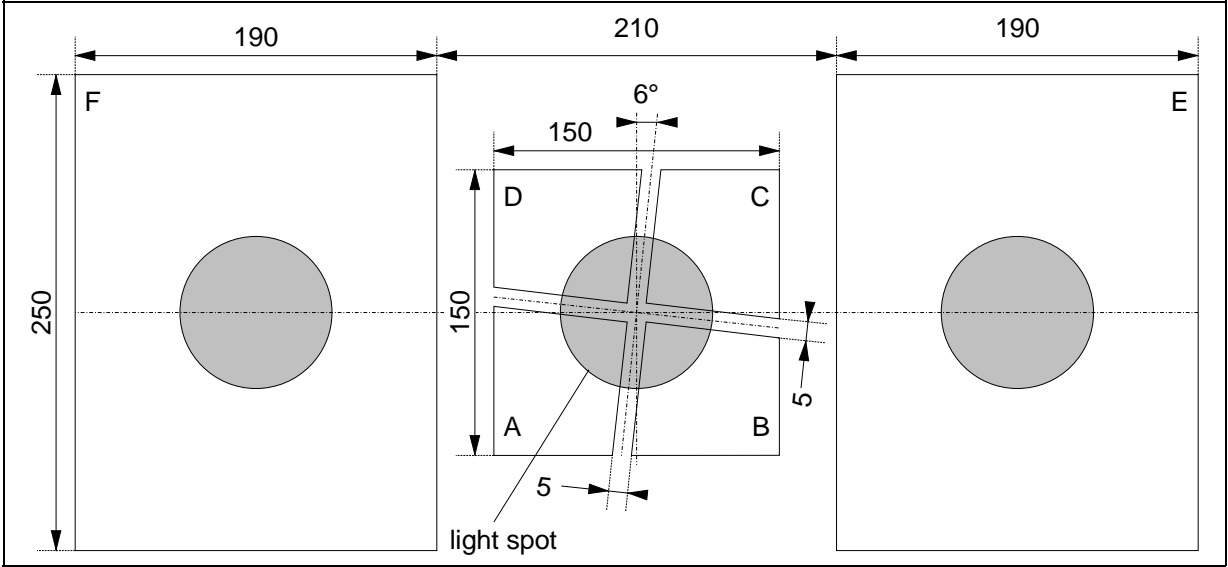
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CC</sub>	Supply Current	Gain = H or L		25		mA
SADH SADL	Sensitivity A to D	Gain = H Gain = L	27 9	36 12	45 15	mV/μW mV/μW
SEFH SEFL	Sensitivity E, F	Gain = H Gain = L	45 15	60 20	75 35	mV/μW mV/μW
BWAD BWEF	Bandwidth at -3dB (A to D) Bandwidth at -3dB (E, F)	Gain = H or L Gain = H or L	25 2	30 5		MHz MHz
DV0	Offset Voltage versus V <sub>O</sub>	Gain = H or L, in the dark	-15	0	15	mV
DVAB	Offset Voltage (V <sub>A</sub> - V <sub>B</sub> )	Gain = H or L, in the dark	-15	0	15	mV
DVCD	Offset Voltage (V <sub>C</sub> - V <sub>D</sub> )	Gain = H or L, in the dark	-15	0	15	mV
DVM	Offset Voltage [(V <sub>A</sub> + V <sub>C</sub> ) - (V <sub>B</sub> + V <sub>D</sub> )]	Gain = H or L, in the dark	-15	0	15	mV
DVEF	Offset Voltage (V <sub>E</sub> - V <sub>F</sub> )	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 <sub>VO</sub>	Input Current on V <sub>O</sub>	V <sub>O</sub> = 2.5V		0.6		mA
I <sub>GAINH</sub> I <sub>GAINL</sub>	Input Current on Gain	Gain = V <sub>CC</sub> Gain = GND		-1 +1		μA μA

5805-04.TBL

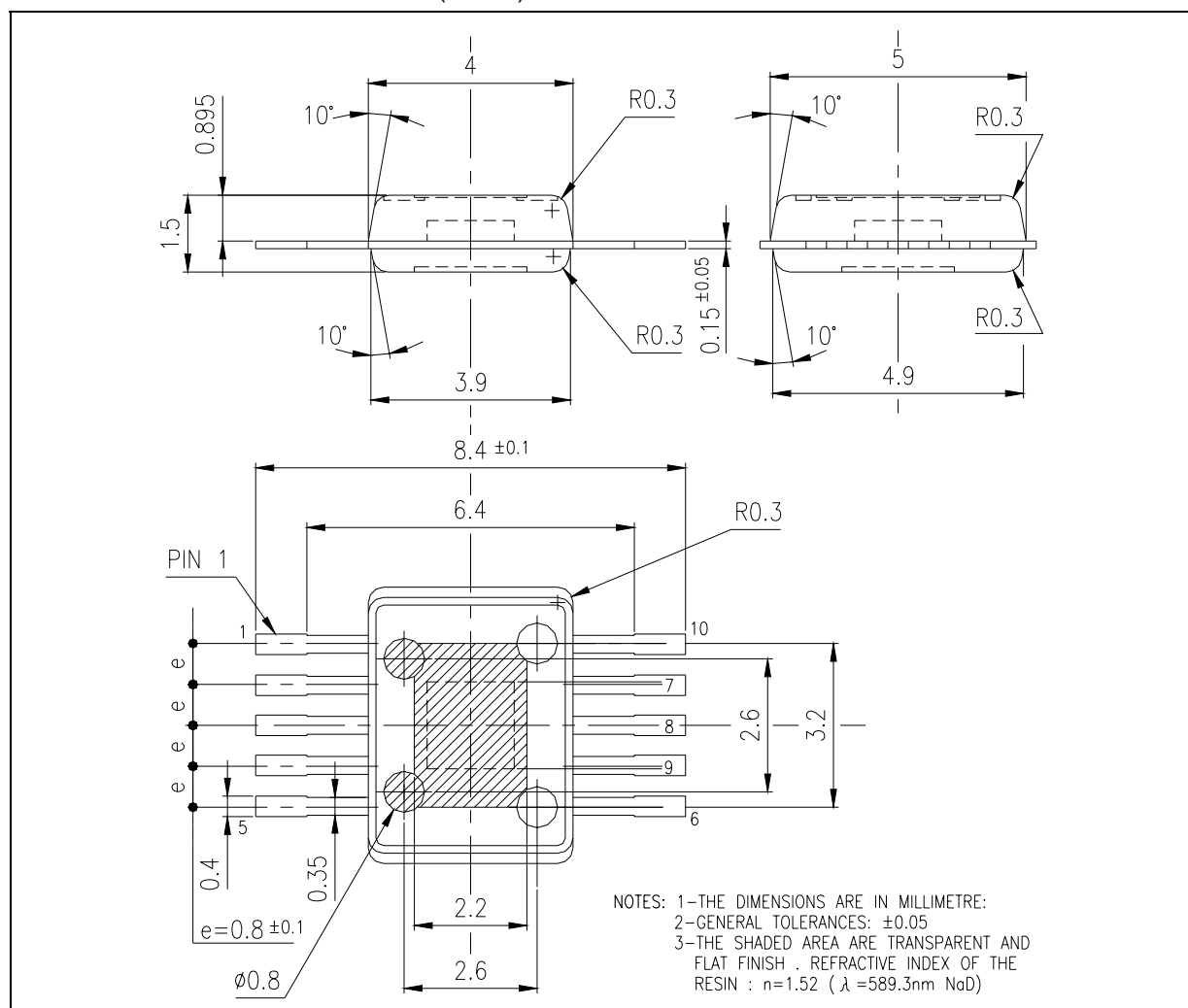
**Figure 1 : Typical Spectral Sensitivity**

5805-03.EPS

DETECTOR PATTERN DIMENSIONS (Position : Center of Package) (Unit :  $\mu\text{m}$ )



5805-04.EPS

**PACKAGE MECHANICAL DATA****10 PINS - PLASTIC TRANSPARENT (OPTO)**

PMOPT010.EPS

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