



## PHOTO DETECTOR FOR DIGITAL VIDEO DISK

PRELIMINARY DATA

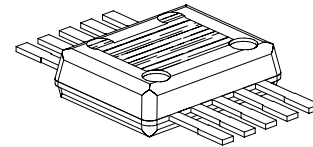
- LARGE BANDWIDTH (30MHz) AND LOW NOISE I/U AMPLIFIER
- SENSITIVITY SWITCHING FOR OPTICAL PICKUPS
- DETECTOR PATTERN ADAPTED FOR EFM SIGNAL DETECTION, FOCUS AND TRACKING CONTROLS

### 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.

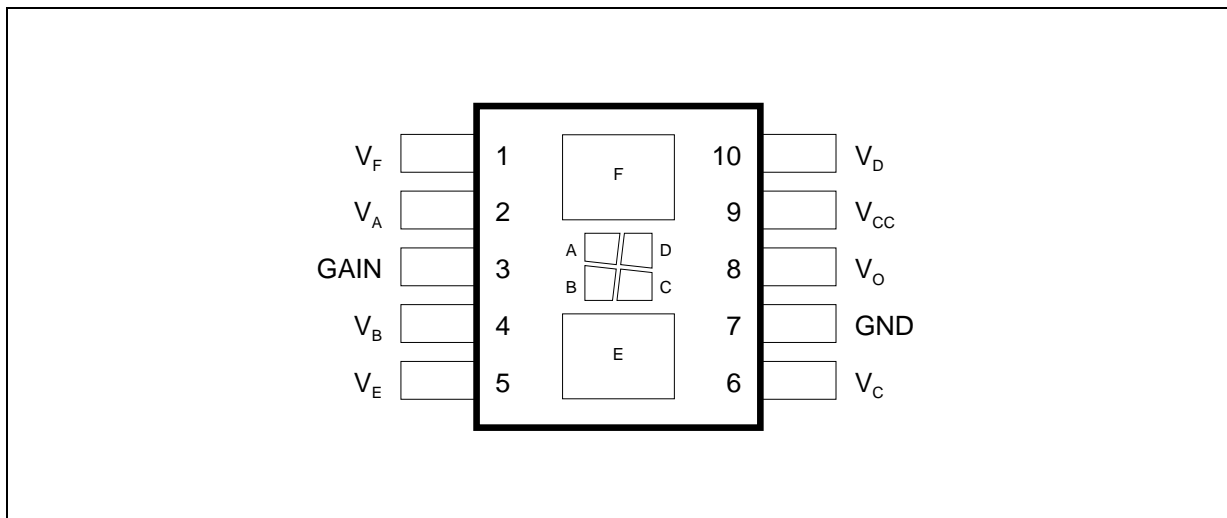
The STV5805 is adapted for pick-up of DVD-ROM and DVD players up to 3 x speed for both 1 layer and 2 layer discs.



**OPTOSO10L**  
(Plastic Transparent Package)

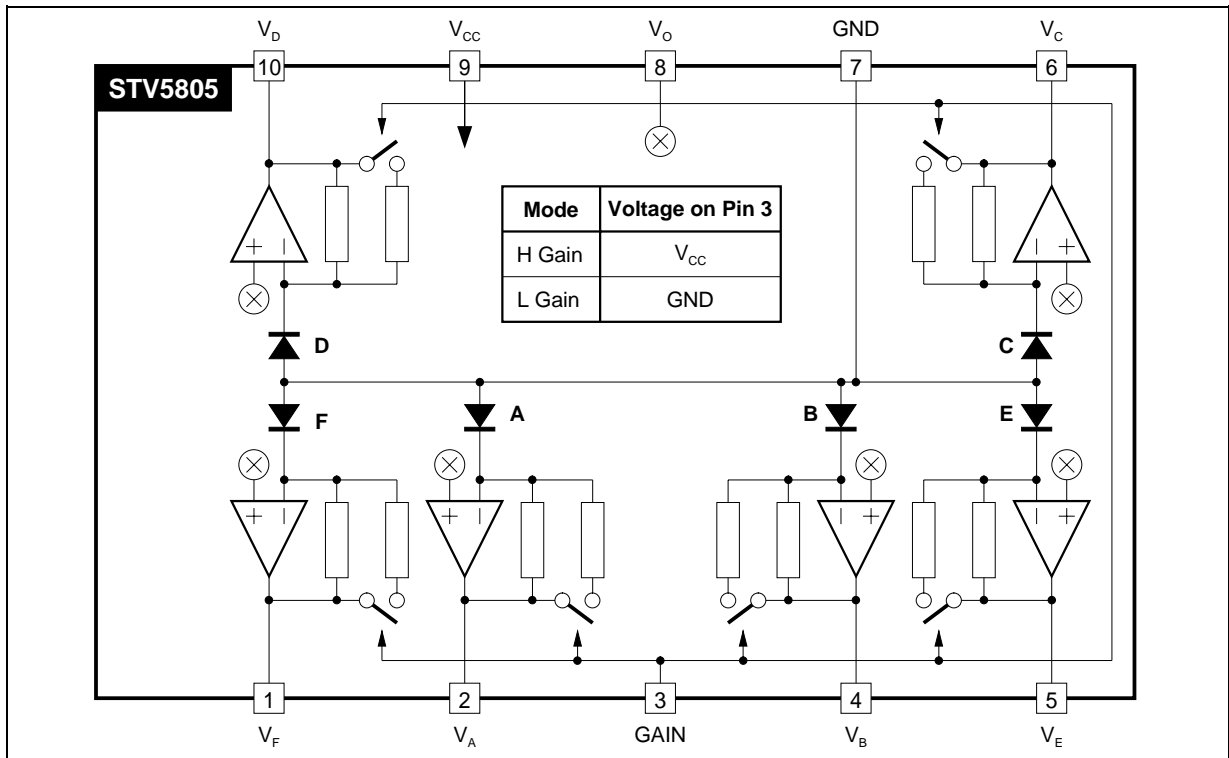
**ORDER CODE : STV5805D**

### PIN CONNECTIONS



5805-01.EPS

**BLOCK DIAGRAM**



**ABSOLUTE MAXIMUM RATINGS**

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

**THERMAL DATA**

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

**RECOMMENDED OPERATING CHARACTERISTICS**

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

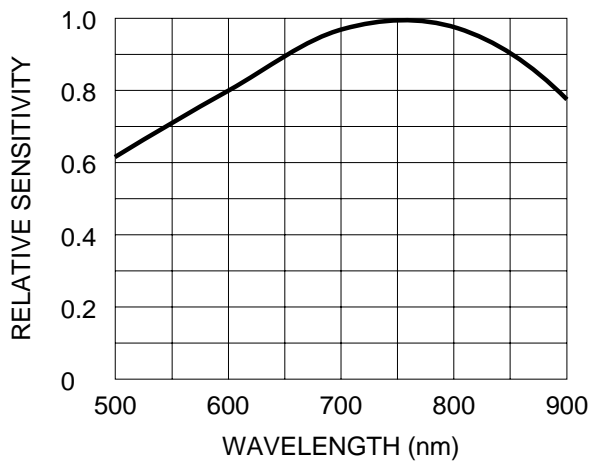
**ELECTRICAL CHARACTERISTICS**

( $V_{CC} = 5V$ ,  $V_O = 2.5V$ , Light wavelength = 635 to 680nm,  $T_{amb} = 25^{\circ}C$ , 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/ $\mu$ W mV/ $\mu$ W
SEFH SEFL	Sensitivity E, F	Gain = H Gain = L	45 15	60 20	75 35	mV/ $\mu$ W mV/ $\mu$ W
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 $V_O$	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		$\mu$ A $\mu$ A

5805-04.TBL

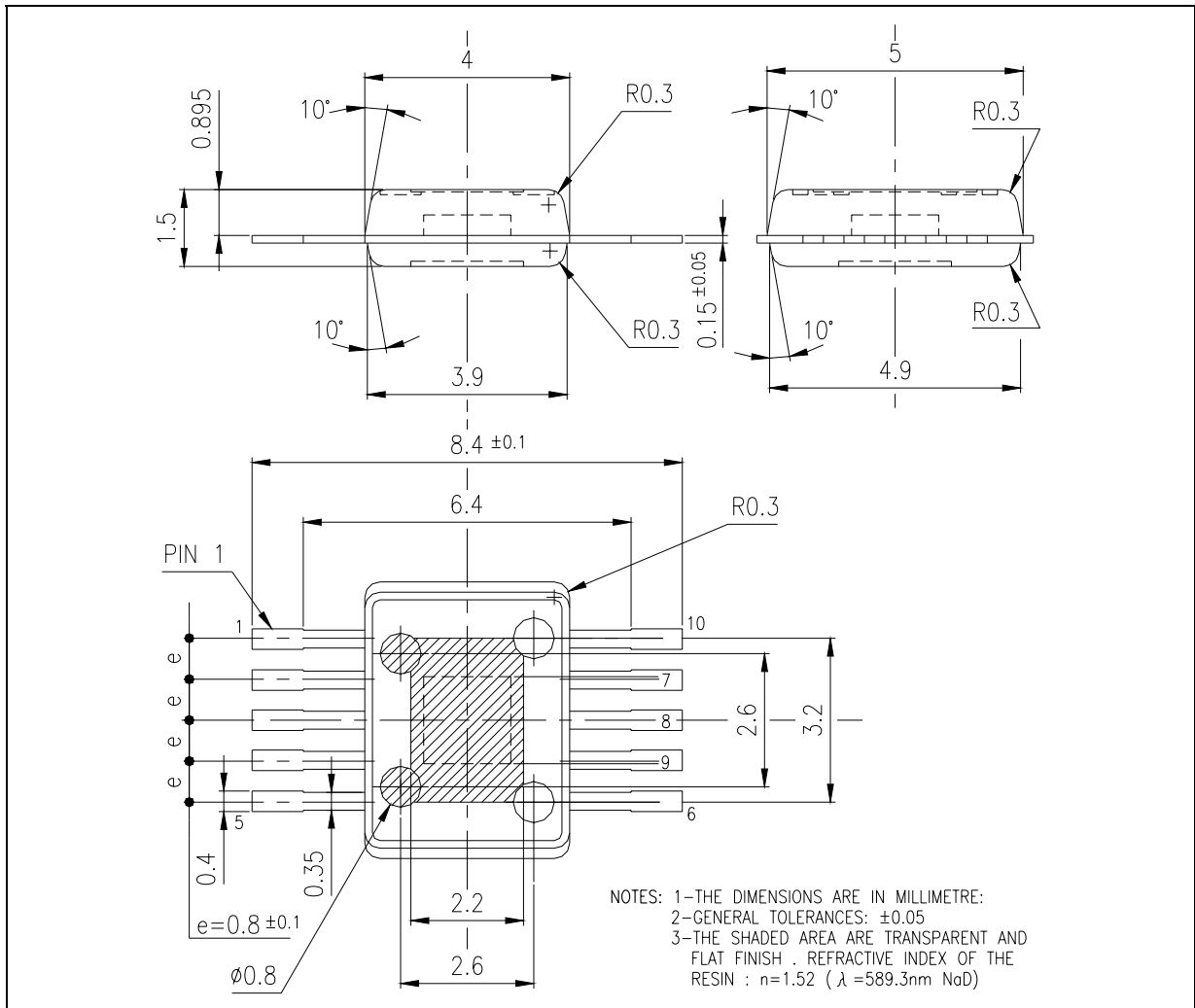
**Figure 1 : Typical Spectral Sensitivity**



5805-03.EPS



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



PMOPTO10.EPS

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