



PHOTO DETECTOR FOR DIGITAL VIDEO DISK

PRELIMINARY DATA

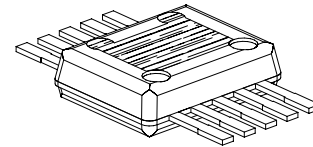
- LARGE BANDWIDTH (30MHz) AND LOW NOISE I/U AMPLIFIER
- SENSITIVITY SWITCHING FOR OPTICAL PICKUPS
- DETECTOR PATTERN ADAPTED FOR EFM SIGNAL DETECTION, FOCUS AND TRACKING CONTROLS

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.

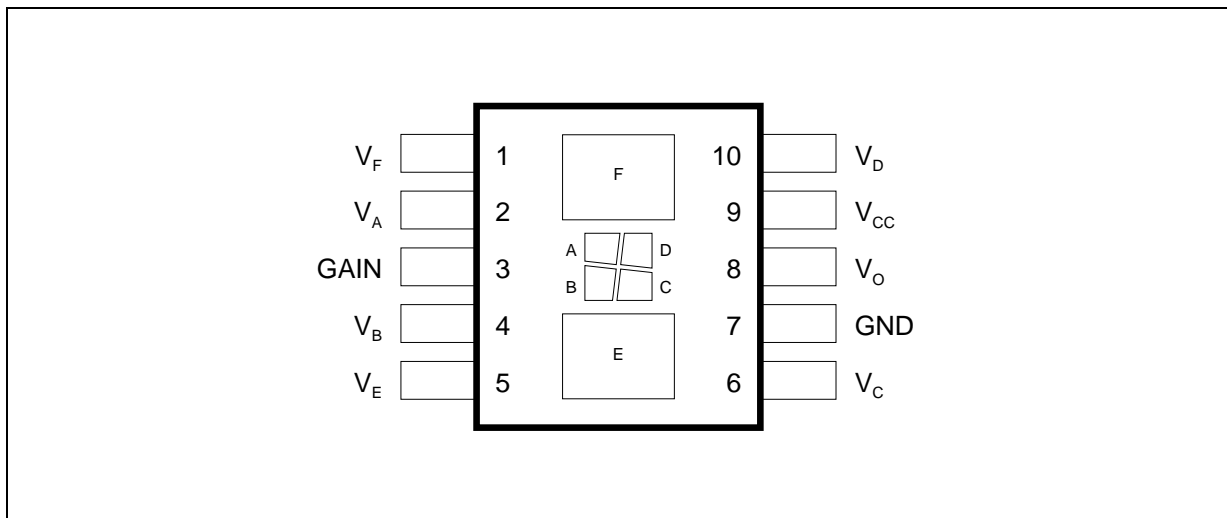
The STV5805 is adapted for pick-up of DVD-ROM and DVD players up to 3 x speed for both 1 layer and 2 layer discs.



OPTOSO10L
(Plastic Transparent Package)

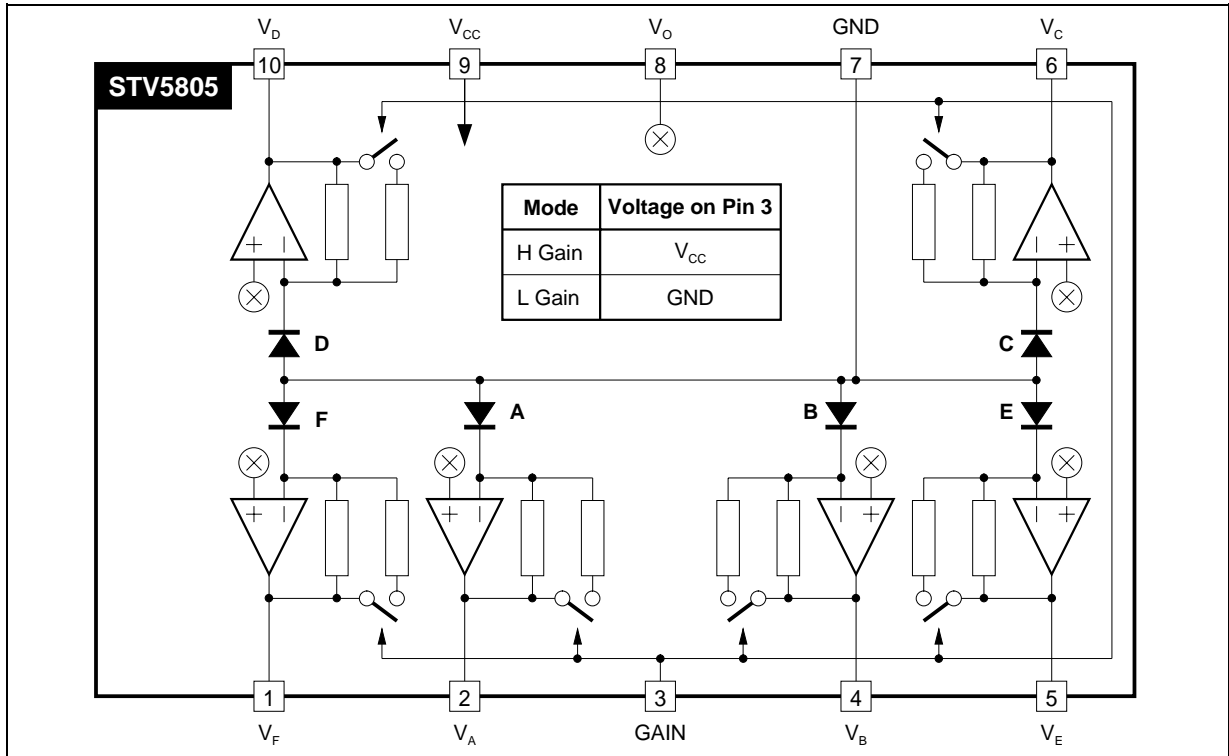
ORDER CODE : STV5805D

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

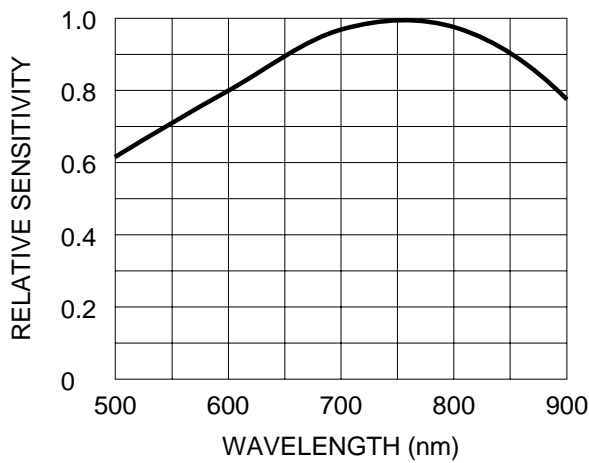
ELECTRICAL CHARACTERISTICS

($V_{CC} = 5V$, $V_O = 2.5V$, 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/ μ W mV/ μ W
SEFH SEFL	Sensitivity E, F	Gain = H Gain = L	45 15	60 20	75 35	mV/ μ W mV/ μ 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		μ A μ A

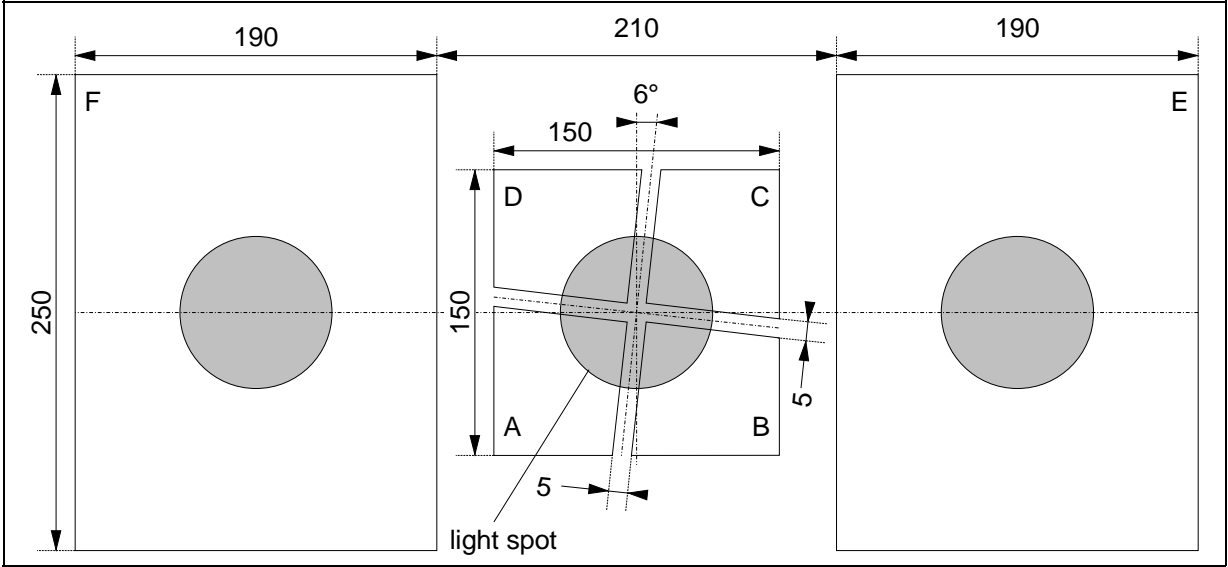
5805-04.TBL

Figure 1 : Typical Spectral Sensitivity



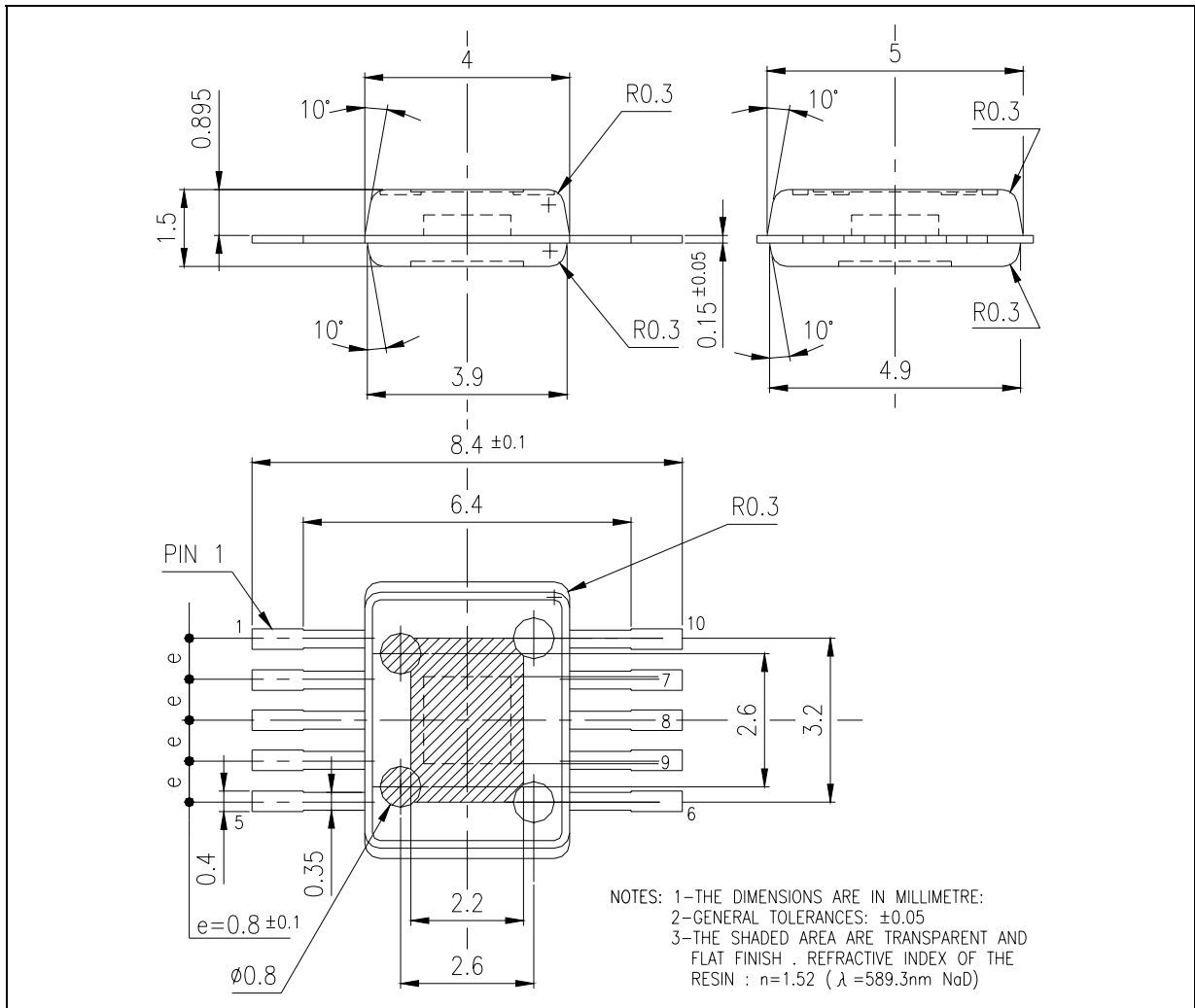
5805-03.EPS

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



5805-04.EPS

PACKAGE MECHANICAL DATA
10 PINS - PLASTIC TRANSPARENT (OPTO)



PMOPTO10.EPS

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No licence is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics

© 1998 STMicroelectronics - All Rights Reserved

Purchase of I²C Components of STMicroelectronics, conveys a license under the Philips I²C Patent. Rights to use these components in a I²C system, is granted provided that the system conforms to the I²C Standard Specifications as defined by Philips.

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Italy - Japan - Korea - Malaysia - Malta - Morocco- The Netherlands
 Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.

