

# Photo Transistor

## MTD6000PT

### Applications -

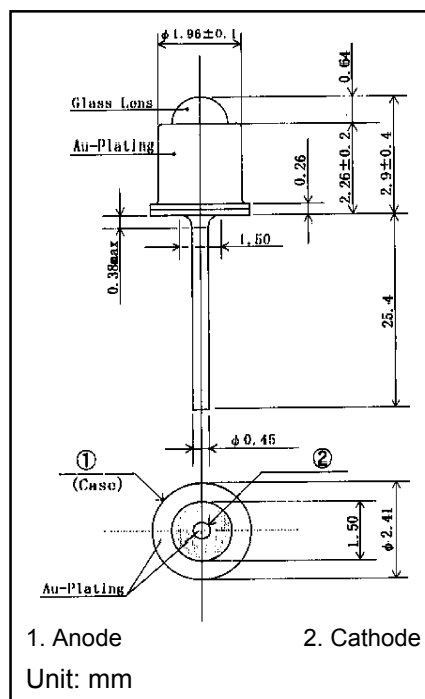
- Edge Sensing
- Smoke Detectors
- Fiber Optics
- Optical Switch

### Features -

- High Reliability in Demanding Environments (Metal Can Package)
- Optical Grade Glass Lens
- Narrow Angular Response
- Compact Package

### MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector - Emitter Voltage	$V_{ceo}$	30	V
Collector - Base Voltage	$V_{eco}$	5	V
Collector Current	$I_c$	20	mA
Collector Power Dissipation	$P_c$	100	mW
Operating Temperature	$T_{opr}$	-25~100	°C
Storage Temperature	$T_{stg}$	-30~125	°C
Junction Temperature	$T_j$	125	°C



### OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Light Current	$I_L$	$V_{ce} = 20V$ $L = 100 \text{ Lux}^*$	—	0.7	—	mA
Dark Current	$I_D$	$V_{ce} = 20V$	—	—	100	nA
C-E Saturation Voltage	$V_{CE(sat)}$	$I_c = 0.2 \text{ mA}$ $L = 1000 \text{ Lux}^*$	—	0.2	—	V
Spectral Sensitivity	$\lambda$	—	—	400~1100	—	nm
Spectral Sensitivity	$\lambda$	Using Filter	—	800~1100	—	nm
Peak Sensitivity Wavelength	$\lambda_p$	—	—	880	—	nm
Rise Time	$T_r$	$R = 100\Omega$ , $V_{cc} = 5V$ , $I_c = 1 \text{ mA}$	—	10	—	$\mu s$
Fall Time	$T_f$	$R = 100\Omega$ , $V_{cc} = 5V$ , $I_c = 1 \text{ mA}$	—	10	—	$\mu s$
Half Intensity Beam Angle	$\theta$	—	—	$\pm 10$	—	°

\* Color Temperature = 2870° K Standard Tungsten Lump



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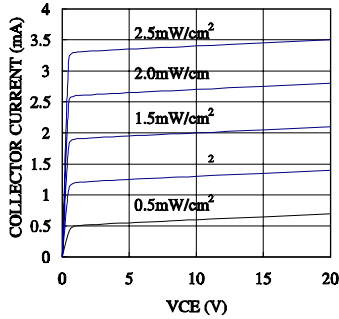
For up-to-date product info visit our web site at [www.marktechopto.com](http://www.marktechopto.com)

All specifications subject to change.

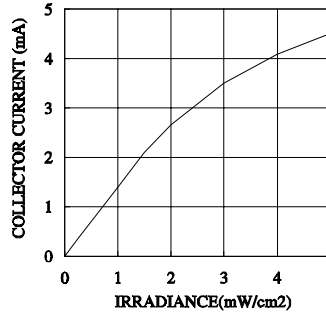
# Photo Transistor

## MTD600PT Graphs -

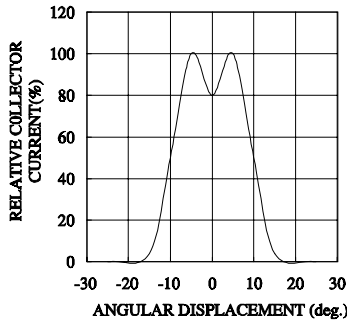
ICEL vs VCE



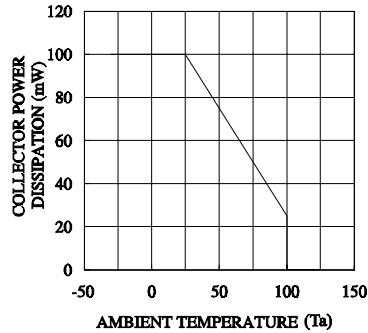
ICEL vs IRRADIANCE



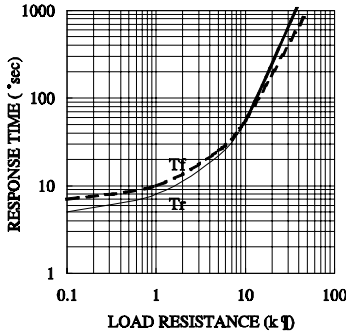
ANGULAR DISPLACEMENT



THERMAL DERATING CURVE



RESPONSE TIME vs LOAD RESISTANCE  
VCE=5V/IC=0.5mA



RELATIVE RESPONSE vs

