

Photo Transistor

MTD6000PT Applications -

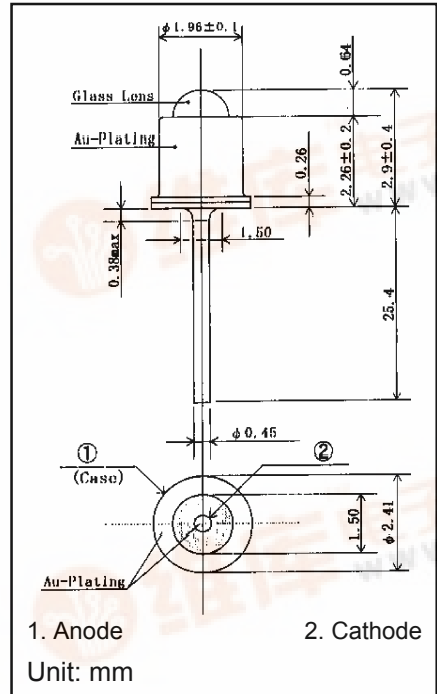
- Edge Sensing
- Fiber Optics
- Smoke Detectors
- Optical Switch

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_{ce0}	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	λ	—	—	400~1100	—	nm
Spectral Sensitivity	λ	Using Filter	—	800~1100	—	nm
Peak Sensitivity Wavelength	λ_p	—	—	880	—	nm
Rise Time	T_r	$R = 100\Omega$, $V_{cc} = 5V$, $I_c = 1 \text{ mA}$	—	10	—	μs
Fall Time	T_f	$R = 100\Omega$, $V_{cc} = 5V$, $I_c = 1 \text{ mA}$	—	10	—	μs
Half Intensity Beam Angle	θ	—	—	±10	—	°

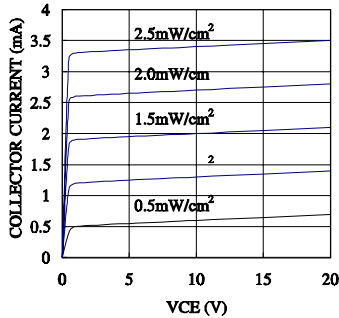
Color Temperature = 2870° K Standard Tungsten Lump



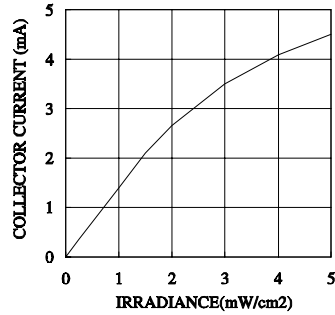
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MTD600PT Graphs -

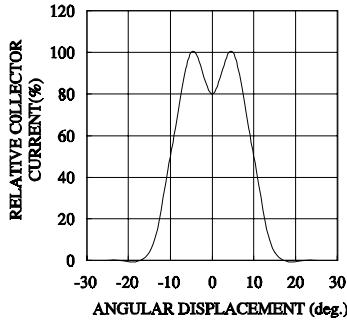
ICEL vs VCE



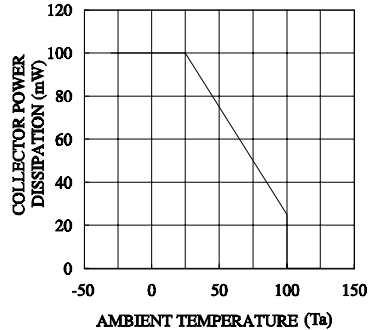
ICEL vs IRRADIANCE



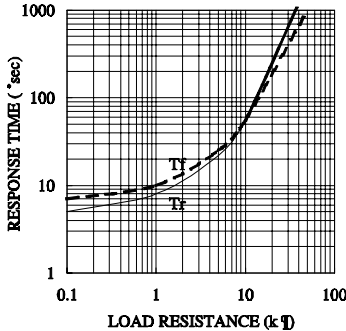
ANGULAR DISPLACEMENT



THERMAL DERATING CURVE



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



RELATIVE RESPONSE vs

