

## Si Phototransistors

### KPT081M31

#### Characteristics

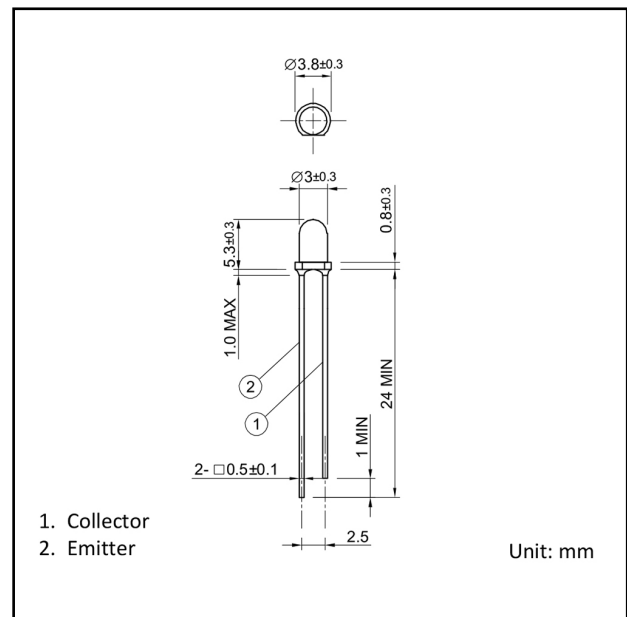
- NPN phototransistor
- Transparent epoxy mold
- Low leak current

#### Applications

- Optical switches
- Optical encoders
- Photo-isolators
- Camera stroboscopes
- Infrared sensors
- Automatic control apparatus

#### Package

- MOLD



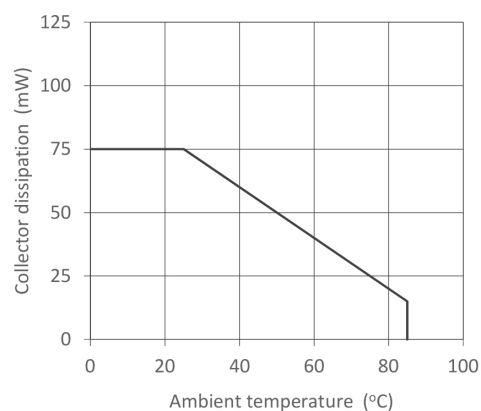
## Absolute Maximum Ratings

Parameter	Symbol	Value	Unit	Conditions
APD Reverse Collector-emitter voltage	$V_{CEO}$	20	V	-
APD Reverse Emitter-collector voltage	$V_{ECO}$	5	V	-
Collector dissipation	$P_D$	75	mW	-
Operating temperature	$T_{opr}$	-20 to +85		Avoid dew condensation
Storage temperature	$T_{stg}$	-30 to +100		Avoid dew condensation

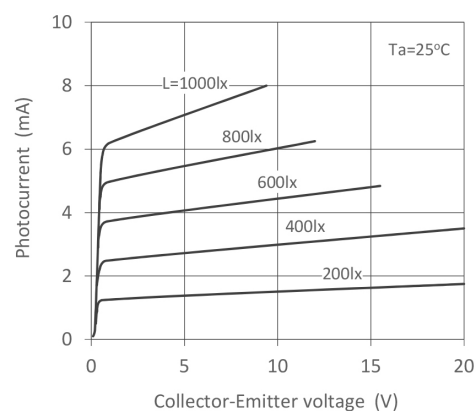
Electrical and Optical characteristics ( $T_a=25^\circ\text{C}$   $V_R=2\text{V}$  unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Sensitive size	S	-	0.64 × 0.64	-	mm <sup>2</sup>	-
Sensitive wavelength		400	800( $\lambda_p$ )	1000	nm	$\lambda_p$ =Peak wavelength
Photocurrent	$I_L$	-	7	-	mA	$V_{CE}=5\text{V}$ 1000lx(@2856K)
Dark current	$I_{ceo}$	-	5	200	nA	$V_{CE}=20\text{V}$
Half angle	$2\theta$	-	60	-	deg.	-
Current amplification factor	$h_{FE}$	600	-	-	null	$V_{CE}=5\text{V}$ $I_C=2\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.4	V	$I_C=1\text{mA}$ 1000lx(@2856K)
Rise/Fall Time	$t_r$ $t_f$	-	5	-	$\mu\text{s}$	$V_{CE}=5\text{V}$ $I_C=2\text{mA}$ $R_L=100$

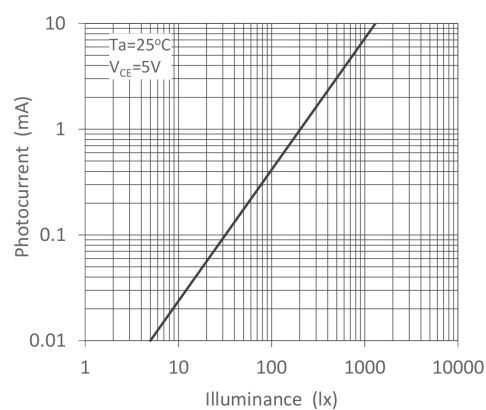
Collector Dissipation - Ambient Temperature



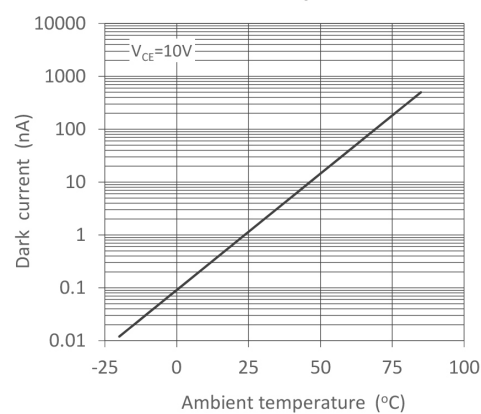
Photocurrent - Collector-Emitter Voltage



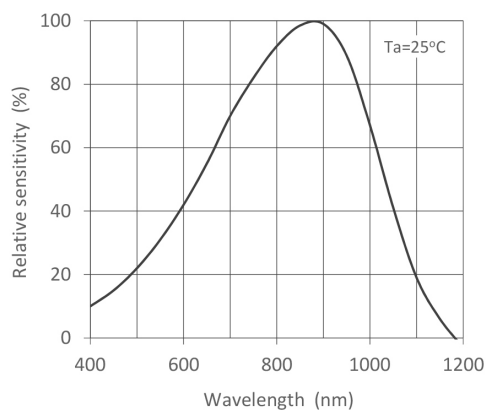
Photocurrent - Illuminance



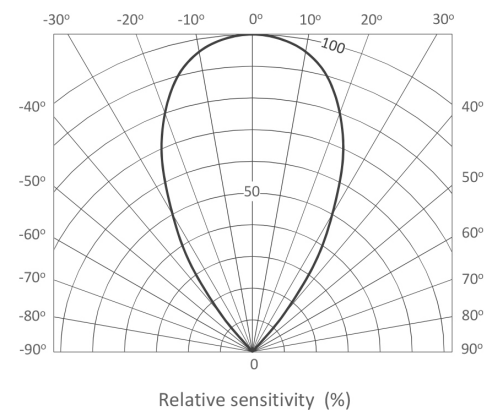
Dark Current - Ambient Temperature



Spectral Responsivity



Directivity



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## Dexerials Corporation

1724 Shimotsuboyama, Shimotsuke-shi, Tochigi 323-0194, Japan

TEL: +81-285-39-7950 <https://www.dexerials.jp/en/>