

## Thermoelectrically Cooled InGaAs Photodiodes KPDE086S-H85P

### Characteristics

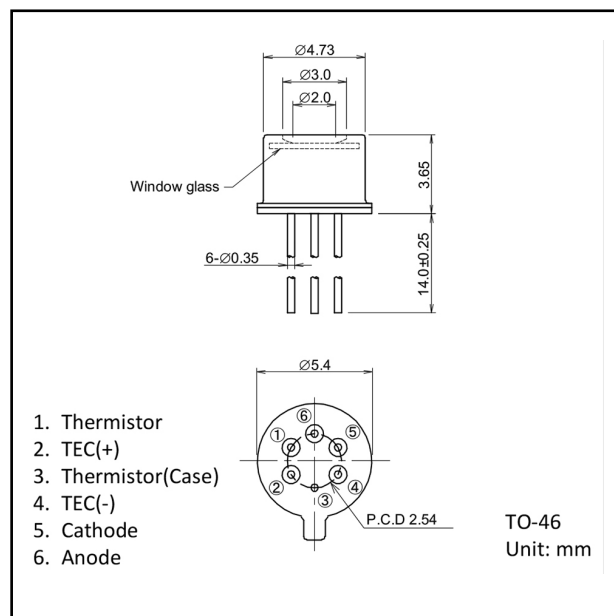
- 860 $\mu$ m sq. large sensitive area
- Low dark current
- High shunt resistance
- Electrically cooled with TEC and thermistor
- Small size (TO-46 package)

### Applications

- Near IR sensors
- Near IR spectroscopy
- Power meters

### Package

- TO-CAN



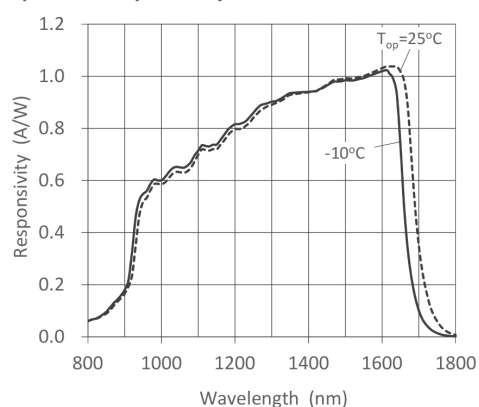
## Absolute Maximum Ratings

Parameter	Symbol	Value	Unit	Conditions
Reverse voltage	$V_R$	20	V	-
Maximum optical power input	$P_{imax}$	50	mW	-
Forward current	$I_F$	50	mA	-
TE Cooler current	$I_C$	1.0	A	-
Power dissipation	$P_D$	100	mW	-
Thermistor power rating	$P_{th}$	1.5	mW	-
Operating temperature	$T_{opr}$	-40 to +70		Avoid dew condensation
Storage temperature	$T_{stg}$	-40 to +85		Avoid dew condensation

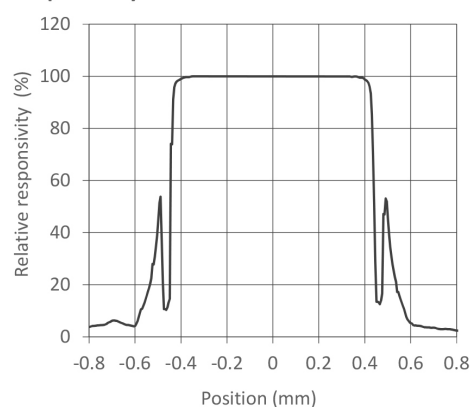
## Electrical and Optical characteristics (Ta=25 unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Active area	S	-	0.86X0.86	-	mm <sup>2</sup>	-
Sensitive wavelength		900	-	1700	nm	-
Responsivity	R	0.8 0.9	0.9 1.0	-	A/W	=1310nm =1550nm
Dark current	$I_D$	-	1	10	nA	$V_R=5V$
Terminal capacitance	$C_t$	-	45	60	pF	$V_R=5V$ f=1MHz

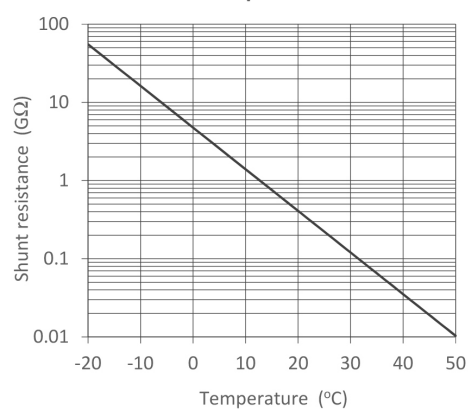
**Spectral Responsivity**



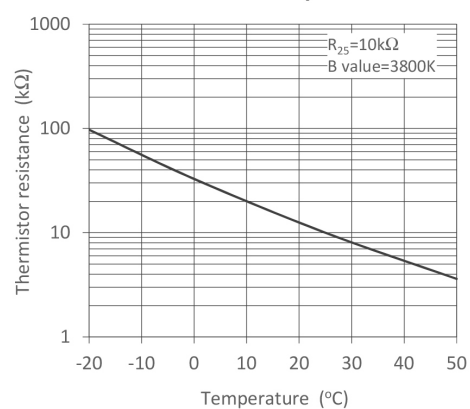
**Responsivity Distribution**



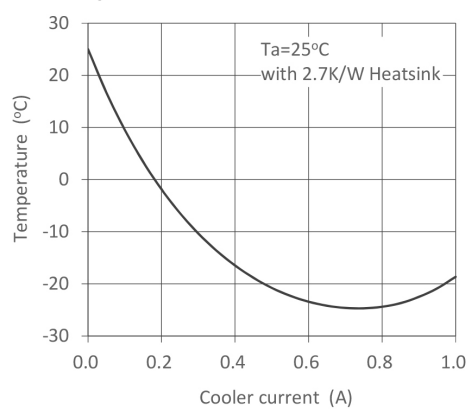
**Shunt Resistance - Temperature**



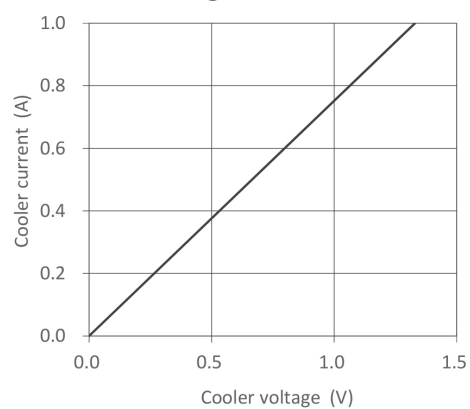
**Thermistor Resistance - Temperature**



**TEC Temperature - Current**



**TEC Current - Voltage**



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