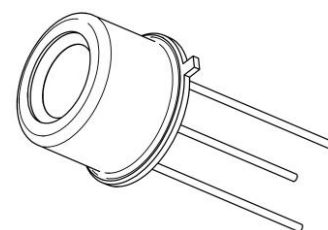


# PVA-1.7-d1AR-TO39-BK7-70-B

**PRELIMINARY  
DATASHEET**

## InGaAs room-temperature photovoltaic infrared detector



### FEATURES

- Cut-off wavelength: 1.7  $\mu\text{m}$
- Anti-reflection coating on the active element
- III-V material compliant with the RoHS Directive
- High ambient operating and storage temperature
- Long-term stability and reliability
- Front-side illuminated
- No minimum order quantity required

### APPLICATIONS

- Gas detection, monitoring and analysis:  $\text{CH}_4$
- Telecommunication
- LIDARs
- Laser range finder, laser warning system
- Lasers and diodes life tests
- Food analysis
- Pharmaceutical analysis

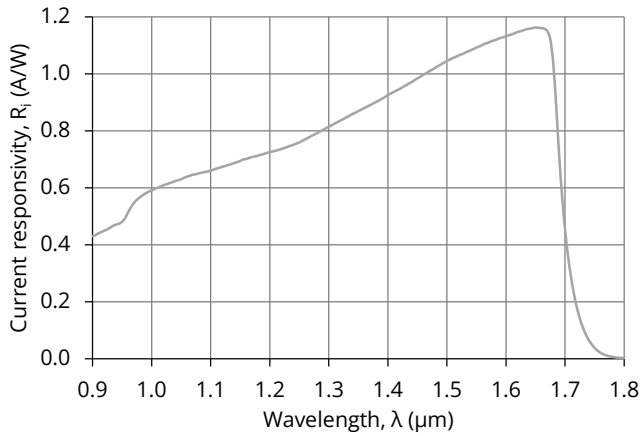
### DETECTOR CONFIGURATION

Detector symbol	Cooling	Temperature sensor	Active area diameter, $d_a$ , mm	Optical immersion	Package	Acceptance angle, $\Phi$ , deg.	Window
PVA-1.7-d1AR-TO39-BK7-70-B	no	n/a	1	no	TO39 (3 pin)	$\sim 70$	BK7 (borosilicate glass)

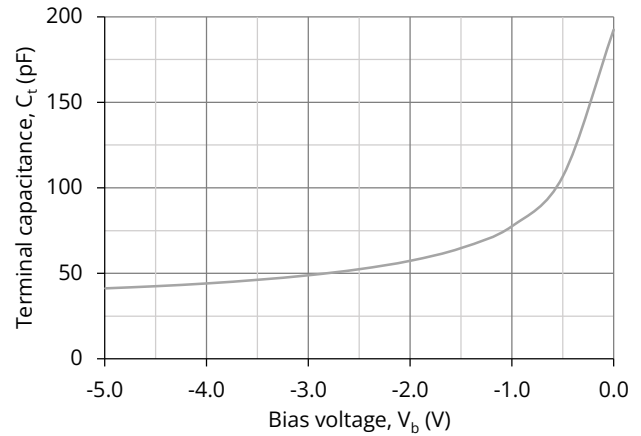
### SPECIFICATION ( $T_{\text{amb}} = 293 \text{ K}$ , $V_b = -5 \text{ V}$ , unless otherwise noted)

Detector symbol	Peak wavelength		Cut-off wavelength (10%)		Detectivity		Current responsivity		Dark current		Dark current density		Terminal capacitance			3db bandwidth		Resistance		Bias voltage
	$\lambda_{\text{peak}}$		$\lambda_{\text{cut-off}}$		$D^*(\lambda=1.55\mu\text{m}, 20\text{kHz})$		$R(\lambda=1.55\mu\text{m})$		$I_{\text{dark}}$		$J_{\text{dark}}$		$C_t$			$R_{\text{load}}=5\Omega$ ( $V_b=-10\text{mV}$ )		$V_b$		
	$\mu\text{m}$		$\mu\text{m}$		$\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$		$\text{A}/\text{W}$		$\text{nA}$		$\text{A}/\text{cm}^2$		$\text{pF}$			$\text{MHz}$		$\text{M}\Omega$	$\text{V}$	
	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Min.	Typ.	Max.	Typ.	Min.	Typ.		
PVA-1.7-d1AR-TO39-BK7-70-B	1.59 $\pm$ 0.03	1.69	1.71	6.0 $\times$ 10 <sup>11</sup>	1.0 $\times$ 10 <sup>12</sup>	1.00	1.02	25	50	3.5 $\times$ 10 <sup>-6</sup>	7.0 $\times$ 10 <sup>-6</sup>	25	40	50	180	3	-5			

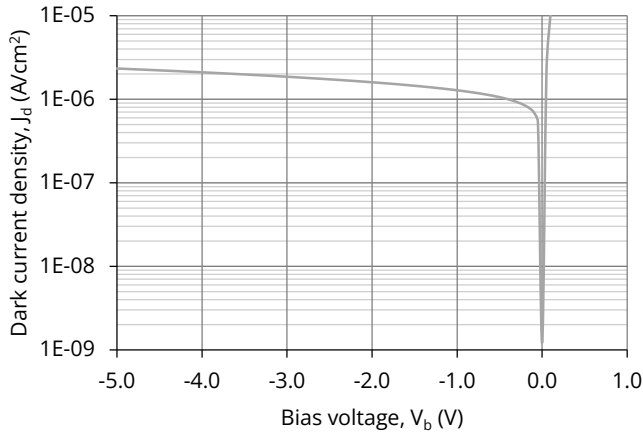
### SPECTRAL RESPONSE (Typ., $T_{amb} = 293\text{ K}$ )



### $C_t$ - $V_b$ CHARACTERISTICS (Typ., $T_{amb} = 293\text{ K}$ )



### $J_{dark}$ - $V_b$ CHARACTERISTICS (Typ., $T_{amb} = 293\text{ K}$ )



### MECHANICAL LAYOUT AND PINOUT

- [TO39\(3p\)-pW, PV detector technical drawing](#)

### RECOMMENDED AMPLIFIER

Detector symbol	Preamplifier type
PVA-1.7-d1AR-TO39-BK7-70-B	SIP-TO39 series

### ABSOLUTE MAXIMUM RATINGS

Parameter	Test conditions, remarks	Value	Unit
Ambient operating temperature, $T_{amb}$	Detector parameters depend on $T_{amb}$	-20 to 70	$^{\circ}\text{C}$
Storage temperature, $T_{stg}$		-40 to 85	$^{\circ}\text{C}$
Soldering temperature	Within 5 s or less	$\leq 260$	$^{\circ}\text{C}$
Storage humidity	No dew condensation	10 to 90	%
Maximum bias voltage, $V_{b\text{ max}}$		-15	V

Stresses beyond those listed under absolute maximum ratings may cause permanent damage to the device. Constant or repeated exposure to absolute maximum rating conditions may affect the quality and reliability of the device.