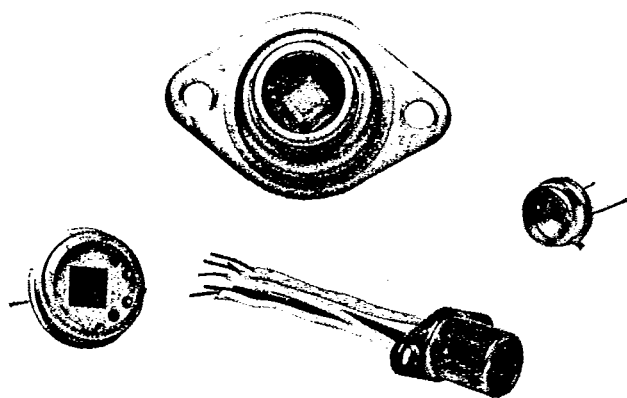


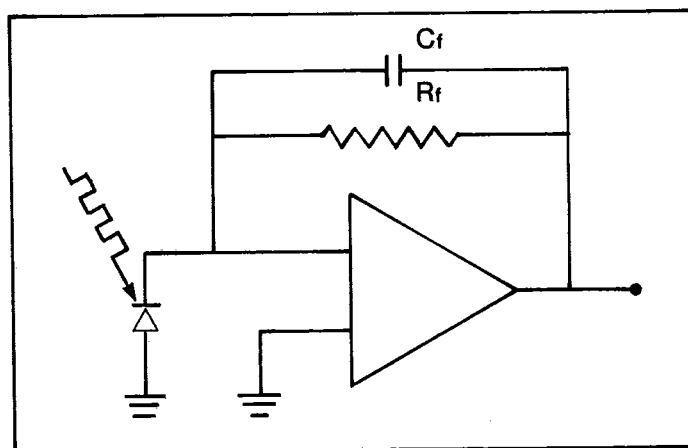
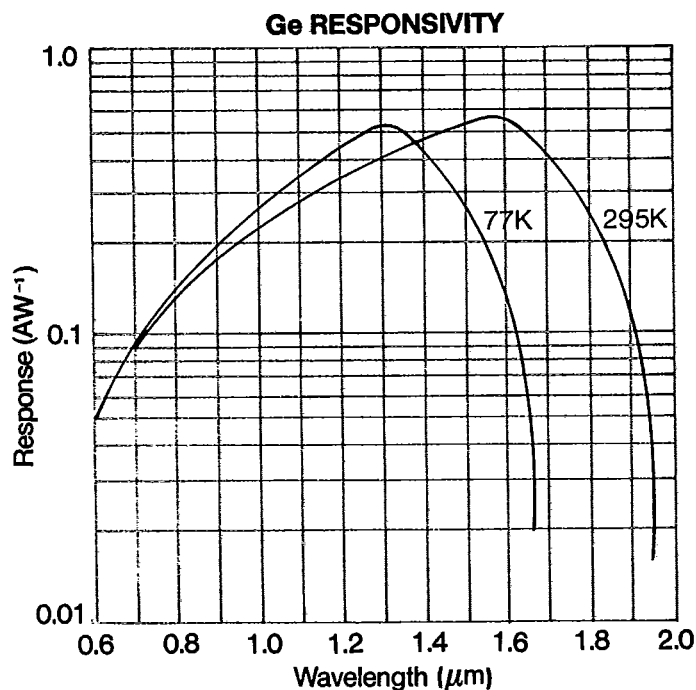
T-41-41

PHOTOVOLTAIC GERMANIUM DETECTORS



The high quality photovoltaic germanium detectors offered by InfraRed Associates are designed for the .6 μ m to 1.9 μ m region. These p-n junction devices offer high sensitivity and speed as well as good linearity and stability. These diodes can be operated at room temperature and exhibit enhanced performance when the operating temperature is reduced either by thermo electric cooling or liquid nitrogen.

To obtain optimum sensitivity, these detectors are operated at zero volts bias into a current mode amplifier with negative feedback. The detector can be reverse biased to reduce junction capacitance and increase speed.



Typically current mode preamplifier used for the high sensitivity mode.

The value of R_f and C_f are a function of the detector impedance and are normally chosen for a specific detector size.

TYPICAL SPECIFICATIONS

MODEL NUMBER	SIZE (mm)	PACKAGE		
GE-0-5.5 GE-0-51 GE-0-52 GE-0-53 GE-0-54 GE-0-85	.5 dia. 1 dia. 2 dia. 3 dia. 4 dia. 5 dia.	TO-5 TO-5 TO-5 TO-5 TO-5 TO-8		
GE-2-7.5 GE-2-71 GE-2-72 GE-2-73	.5 dia. 1 dia. 2 dia. 3 dia.		TO-37 2 stg TE cooler	
GE-2-8.5 GE-2-81 GE-2-82 GE-2-83 GE-2-85	.5 dia. 1 dia. 2 dia. 3 dia. 5 dia.		TO-8 2 stg TE cooler	
GE-3-3.5 GE-3-31 GE-3-32 GE-3-33	.5 dia. 1 dia. 2 dia. 3 dia.		TO-3 3 stg TE cooler	
GE-N-M.5 GE-N-M1 GE-N-M2 GE-N-M3 GE-N-M4 GE-N-M5	.5 dia. 1 dia. 2 dia. 3 dia. 4 dia. 5 dia.			Metal Dewar
CHARACTERISTICS	UNITS			
TEMPERATURE	K	295	245	77
$D^*(\lambda_p, 1000, 1)$	$\text{cmHz}^{\frac{1}{2}}\text{W}^{-1}$	8×10^{10}	4×10^{10}	1×10^{12}
Responsivity	AW^{-1}	>.6	>.6	>.55
Dynamic impedance (zero volts bias)	$K\Omega$	1-20	50-500	$>10^3$
Dark Current*	$\mu\text{A}(-10\text{V})$	1-100	.05-1	
Capacitance*	$\text{pF}(-10\text{V})$	16-1800	16-1800	16-1800
Voltage Breakdown*	V	5-30	5-25	5-25

TYPICAL APPLICATIONS:

- Power Meters
- Radiometers
- IR Laser Detectors
- IR Photoelectric Relays
- Spectroscopy
- Fiber Optics

FEATURES:

- High Sensitivity
- Low Dark Current
- Spectral Response 0.6-1.9 μm
- High Speed Response <2 μs^*
- Cooled Packages
- Custom Devices
- Preamplifiers*

*Area Dependant