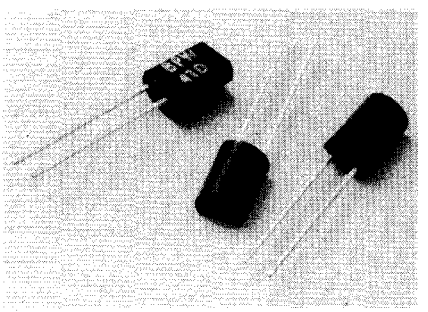
INFRA-RED PHOTODETECTOR

The BPW41D is a large area, silicon p.i.n. photodiode having a low junction capacitance and consequently capable of fast response times. The active chip is packaged in a plastic moulding which contains a near infra-red transmissive filter such that the device is sensitive to infra-red radiation only, and has a high rejection of wavelengths below 800 nm. The BPW41D is therefore eminently suitable for use in I.R. remote control links.



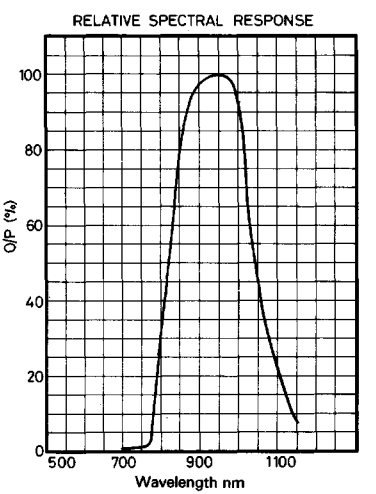
I.R. REMOTE CONTROL APPLICATIONS ADVICE

Advice is available on complete I.R. remote control systems for applications such as those listed below. The combination of I.R. emitting diode, photodetector and detector electronics is critical in defining the performance of a remote control system, and advice is freely available as to the best system combination for a given application.

SUITABLE APPLICATIONS FOR I.R. REMOTE CONTROL

Television, Hi-Fi Systems, Slide Projectors, Model Cars, Trains, etc., Garage Doors, Domestic Appliances.

(See inside front cover for spectral response).



RELATIVE SPECTRAL RESPONSE

BPW41D

ABSOLUTE MAXIMUM RATINGS (at 25°C ambient temperature unless otherwise stated).

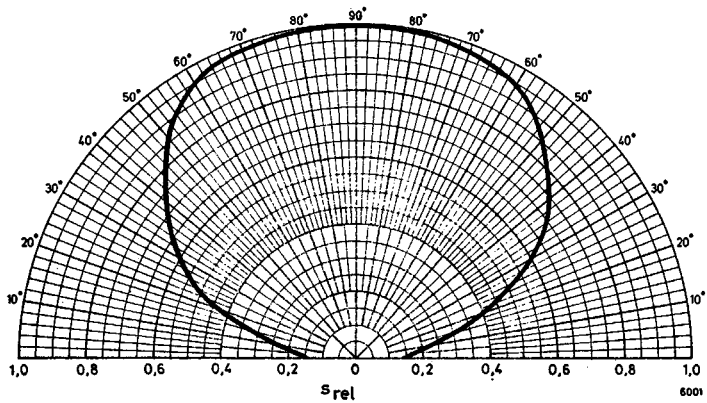
Parameter	Symbol	Value	Unit
Reverse Voltage	V_R	32	Volts
Power Dissipation	P_{tot}	150	mW
Storage Temperature Range		−30 to +80	°C
Maximum Lead Soldering Temperature ($\geqslant$2 mm from case for $\leqslant$3 seconds)		245	°C
Typical Wavelength of Peak Response		925	nm
Typical Range of Spectral Bandwidth (Between 50% levels)		820 to 1040	nm

CHARACTERISTICS (at 25°C ambient temperature).

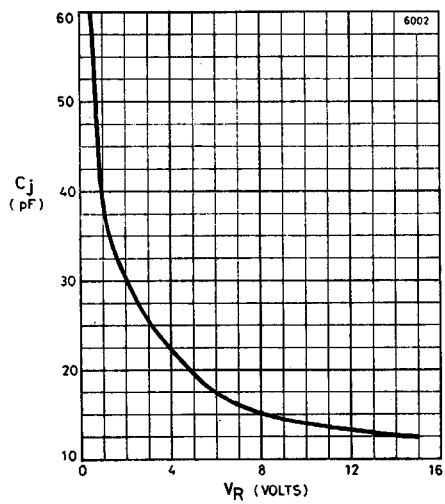
Photovoltaic Mode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Open-circuit voltage	V_{oc}	—	400	—	mV	E_v = 1000 lux (See note 1)
Short-circuit current	I_{sc}	—	70	—	μA	E_v = 1000 lux R_L = 100Ω
		—	43	—	μA	E_e = 1 mW/cm² λp = 950 nm R_L = 100Ω (See note 2)
Absolute sensitivity	S	—	50	—	nA/lux	
Junction capacitance	C_j	—	75	—	pF	V_R = 0, f = 1 MHz E = 0

TYPICAL CHARACTERISTICS



POLAR RESPONSE



CAPACITANCE Vs REVERSE VOLTAGE