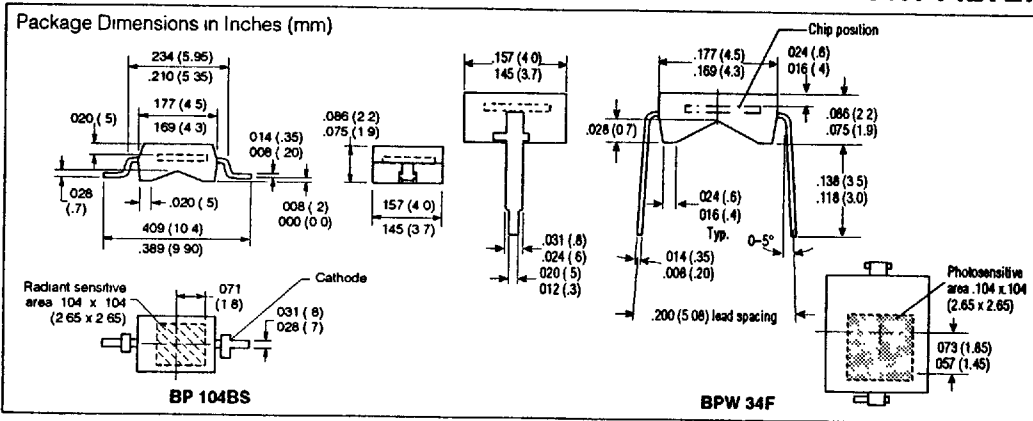


BP 104BS BPW 34F SILICON PIN PHOTODIODE DAYLIGHT FILTER



FEATURES

- Silicon Planar PIN Photodiode
- Daylight Filter
- High Spectral Sensitivity
- Short Switching Time
- Usage: Near Infrared Range (780 to 1100 nm)
- Wide Temperature Range
- High Reliability
- No Testable Degradation
- Low Noise
- High Cutoff Frequency
- High Packing Density
- Use as Photodiode or Photovoltaic Cell
- N-Si Material: Anode=Front Contact, Cathode=Back Contact
- Low Capacitance
- Applications
 - IR Remote Control
 - IR Sound Transmission
 - Reflective Switches
- Package: Lead Frame, Black Epoxy Resin, Solder Tabs, 0.200" (5.08 mm) Lead Spacing; BP 104BS Suitable for Surface Mounting
- Cathode Marking: Projection on Solder Tab

Maximum Ratings

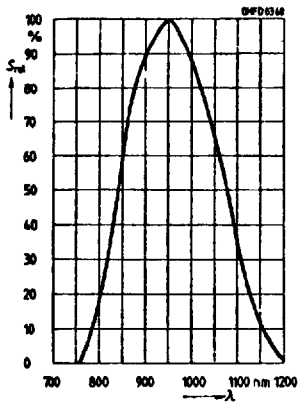
Operating and Storage Temperature Range (T_{OP} , T_{STG}) -40° to $+80^{\circ}$ C
 Soldering Temperature (2 mm from case bottom) (T_S) $t \leq 3$ s 230° C
 Reverse Voltage (V_R) 32 V
 Power Dissipation (P_{TOT}) $T_A = 25^{\circ}$ C 150 mW

Characteristics ($T_A = 25^{\circ}$ C, $\lambda = 950$ nm)

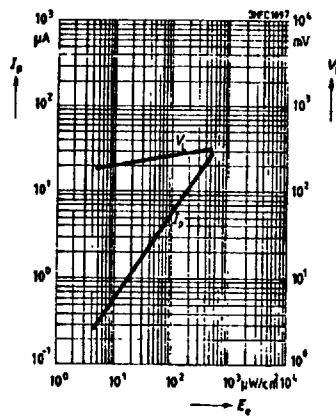
Parameter	Symbol	Value	Unit
Photosensitivity ($V_R = 5$ V, $E_E = 0.5$ mW/cm 2)	S	25 (≥ 15)	μ A
Maximum Photosensitivity Wavelength	λ_{Smax}	950	nm
Photosensitivity Spectral Range ($S = 10\%$ of S_{MAX})	λ	780 to 1100	nm
Radiant Sensitive Area	A	7.00	mm 2
Radiant Sensitive Area Dimensions	L x W	2.65 x 2.65	mm
Distance, Chip Surface to Case Surface	H	0.5	mm
Half Angle	ϕ	± 60	Deg
Dark Current ($V_R = 10$ V)	I_R	2 (≤ 30)	nA
Spectral Photosensitivity	S_λ	0.59	A/W electrons photon
Quantum Yield	η	0.77	
Open Circuit Voltage ($E_E = 0.5$ mW/cm 2)	V_O	330 (≥ 275)	mV
Short Circuit Current ($E_E = 0.5$ mW/cm 2)	I_{SC}	25	μ A
Rise and Fall Time of Photocurrent 10% to 90%, and 90% to 10% of Final Value, ($R_L = 50 \Omega$, $V_R = 5$ V, $\lambda = 850$ nm, $I_P = 800 \mu$ A)	t_R , t_F	20	ns
Forward Voltage ($I_F = 100$ mA, $E = 0$, $T_A = 25^{\circ}$ C)	V_F	1.3	V
Capacitance ($V_R = 0$ V, $E = 0$, $f = 1$ MHz)	C_0	72	pF
Temperature Coefficient V_O	TC_V	-2.6	mV/K
Temperature Coefficient I_{SC}	TC_I	0.18	%/K
Noise Equivalent Power ($V_R = 10$ V)	NEP	4.3×10^{-14}	W/Hz
Detection Limit ($V_R = 10$ V)	D^*	6.2×10^{12}	cm 2 /Hz/W

Photodiodes

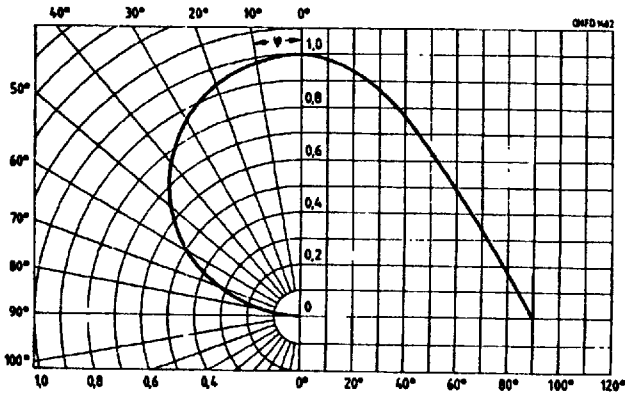
Relative spectral sensitivity
 $S_{REL} = f(\lambda)$



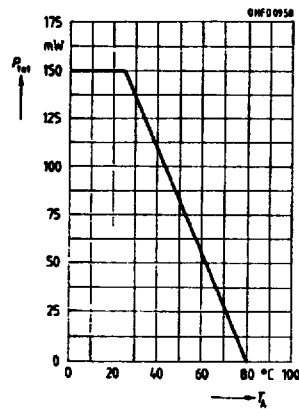
Photocurrent $I_p = f(E_0)$
 Open circuit voltage $V_O = f(E_0)$



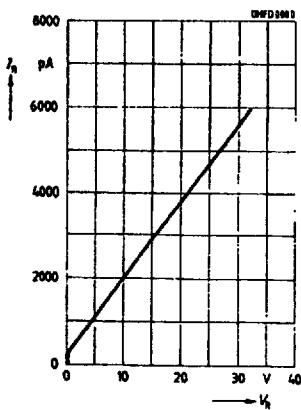
Directional characteristic
 $S_{REL} = f(\varphi)$



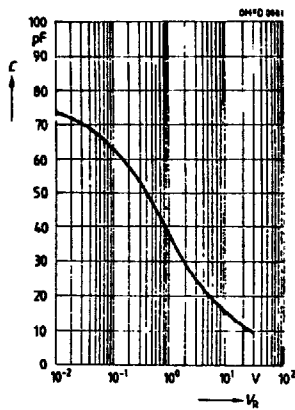
Power dissipation $P_{TOT} = f(T_A)$



Dark current $I_R = f(V_R)$
 $T_A = 25^\circ\text{C}, E = 0$



Capacitance $C = f(V_R)$
 $f = 1 \text{ MHz}, E = 0$



Dark current $I_R = f(T_A)$
 $V_R = 10, E = 0$

