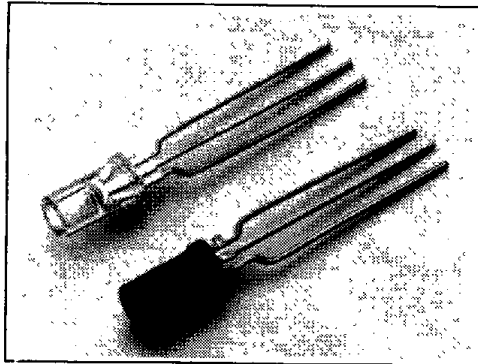


SIEMENS**SFH350**
WITH IR FILTER SFH350F**PLASTIC FIBER OPTIC**
PHOTOTRANSISTOR DETECTOR**T-41-50****Preliminary Data Sheet****FEATURES**

- 2.3 mm Aperture Holds Standard 1000 Micron Plastic Fiber
- No Fiber Stripping Required
- Daylight Rejection Filter (SFH350F)
- High Reliability
- Good Linearity
- Sensitive in the Visible (SFH350) and Near IR Range (SFH350 & 350F)
- Three Lead Phototransistor
- Molded Microlens for Efficient Coupling

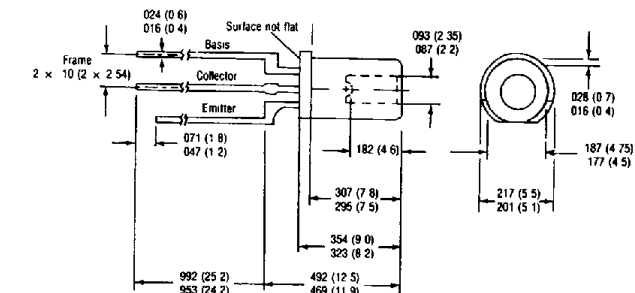
DESCRIPTION

The SFH350/350F are NPN silicon phototransistors in a low cost plastic package for use in short distance data transmission using 1000 micron plastic fibers. Both come in a 5 mm (T1¼) plastic package featuring a tubular aperture. It is wide enough to accommodate fiber and cladding. A microlens on the bottom improves the light coupling efficiency—fiber output to PTX.

The SFH350 has a clear plastic housing, the SFH350F has a black plastic housing.

Typical applications include: automotive wiring, isolation interconnects, medical applications, robotics, electronic games, etc.

For application information see Appnote 40

Package Dimensions in Inches (mm)**Maximum Ratings**

Operating and Storage Temperature Range (T)	-55 to +100°C
Soldering Temperature (Distance from solder to package = 2 mm)	
Dip Soldering Time, $t \leq 5$ sec (T_s)	260°C
Collector-Emitter Voltage (V_{CE})	50 V
Collector Current (I_C)	50 mA
Collector Peak Current, $t \leq 10$ sec (I_{CP})	100 mA
Emitter Base Voltage (V_{EB})	7 V
Power Dissipation ($T_{amb} = 25^\circ\text{C}$) (P_{TOT})	200 mW
Thermal Resistance (R_{THJA})	375 K/W

Characteristics ($T_{amb} = 25^\circ\text{C}$)

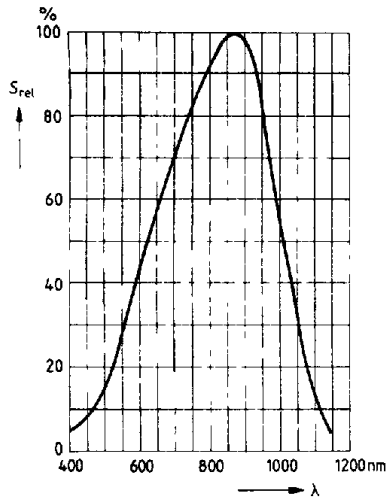
Wavelength of Max. Photosensitivity			
SFH350	λ_{MAX}	850	nm
SFH350F	λ_{MAX}	900	nm
Spectral Range of Photosensitivity			
(S = 10% of S_{MAX})			
SFH350	λ	400 to 1100	nm
SFH350F	λ	800 to 1100	nm
Capacitance			
($V_{CE} = 0$ V, $f = 1$ MHz, $E = 0$ lx)	C_{CE}	9	pF
($V_{CB} = 0$ V, $f = 1$ MHz, $E = 0$ lx)	C_{CB}	22	pF
($V_{EB} = 0$ V, $f = 1$ MHz, $E = 0$ lx)	C_{EB}	20	pF
Rise and Fall Time			
($I_C = 10$ mA, $V_{CE} = 5$ V, $R_L = 1$ kΩ)	t_R, t_F	15	μs
Current Gain			
($V_{CE} = 5$ V, $I_{CE} = 2$ mA)	β	500	Typ
Photocurrent ($V_{CE} = 5$ V) (Note 1)			
SFH350F $\lambda = 950$ nm	I_{CE}	1.0	mA
SFH350 $\lambda = 660$ nm	I_{CE}	0.8	mA

¹ Photocurrent generated at 10 μW light incidence through plastic 1000 micron fiber (distance lens fiber ≤ 0.1 mm; fiber type ESKA EH4001; fiber face polished)

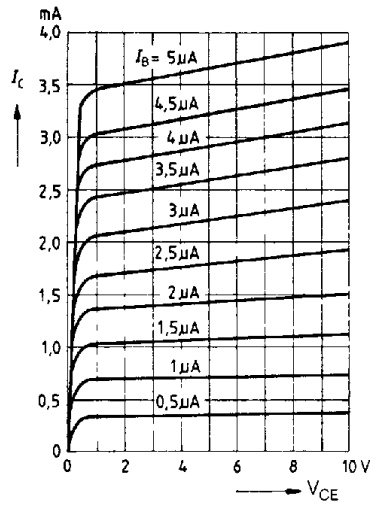
T-41-50

SFH350

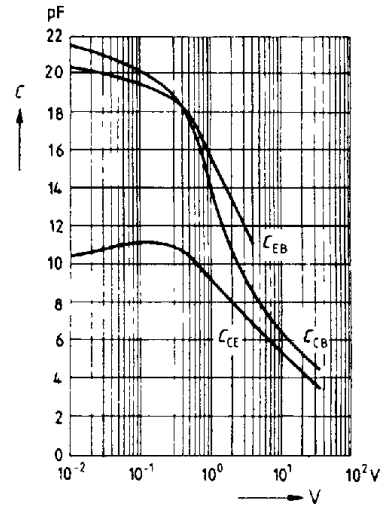
Relative spectral sensitivity
 $S_{rel} = f(\lambda)$



Output characteristics
 $I_C = f(V_{CE}), I_B = \text{Parameter}$



Capacitance $C = f(V)$



Fiber Optic
 Devices