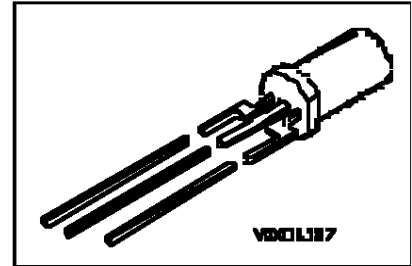


## Plastic Fiber Optic Phototransistor Detector Plastic Connector Housing

SFH 350  
SFH 350V

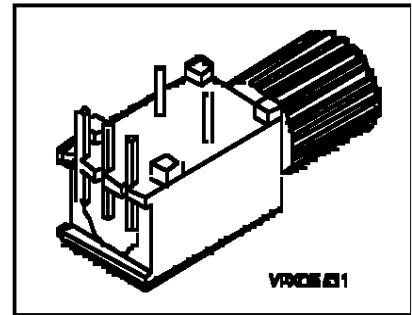
### Features

- 2.2 mm aperture holds standard 1000 micron plastic fiber
- No fiber stripping required
- Good linearity
- Sensitive in visible and near IR range
- Molded microlens for efficient coupling



### Plastic Connector Housing

- Mounting screw attached to the connector
- Interference-free transmission from light-tight housing
- Transmitter and receiver can be flexibly positioned
- No cross talk
- Auto insertable and wave solderable
- Supplied in tubes



### Applications

- Household electronics
- Power electronics
- Optical networks
- Medical instruments
- Automotive electronics
- Light barriers

Type	Ordering Code
SFH 350	Q62702-P1033
SFH 350V	Q62702-P264

### Maximum Ratings

Parameter	Symbol	Values	Unit
Operating temperature range	$T_{OP}$	- 55 ... + 100	°C
Storage temperature range	$T_{STG}$	- 55 ... + 100	°C
Soldering temperature (2 mm from case bottom, $t \leq 5$ s)	$T_S$	260	°C
Collector-emitter voltage	$V_{CE}$	50	V

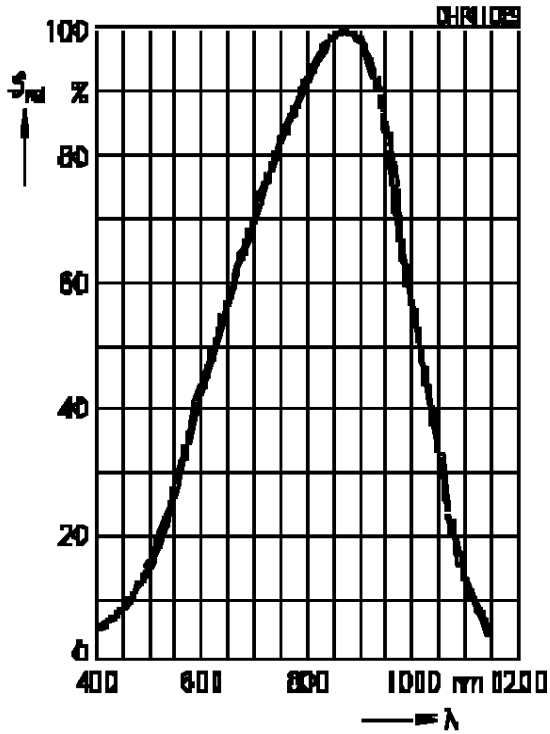
**Maximum Ratings (cont'd)**

Parameter	Symbol	Values	Unit
Collector current	$I_C$	50	mA
Collector peak current ( $t \leq 10$ s)	$I_{CP}$	100	mA
Emitter-base voltage	$V_{EB}$	7	V
Reverse voltage	$V_R$	30	V
Power dissipation $T_A = 25$ °C	$P_{tot}$	200	mW
Thermal resistance, junction/air	$R_{thJA}$	375	K/W

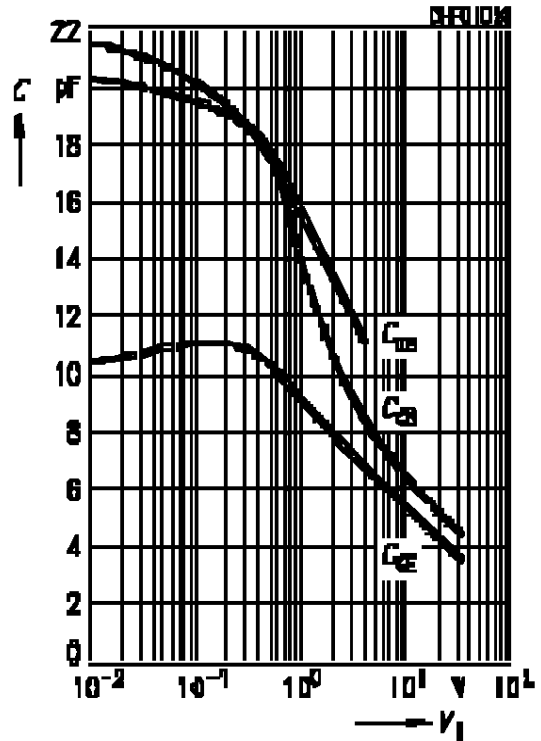
**Characteristics ( $T_A = 25$  °C)**

Parameter	Symbol	Values	Unit
Maximum photosensitivity wavelength	$\lambda_{Smax}$	850	nm
Photosensitivity spectral range ( $S = 10\% S_{max}$ )	$\lambda$	400 ... 1100	nm
Dark current ( $V_R = 20$ V)	$I_R$	1 ( $\leq 10$ )	nA
Capacitance ( $f = 1$ MHz, without light) ( $V_{CE} = 0$ V) ( $V_{CB} = 0$ V) ( $V_{EB} = 0$ V)	$C_{CE}$ $C_{CB}$ $C_{EB}$	10.5 21.5 20.5	pF pF pF
Rise and fall times of photocurrent ( $R_L = 1$ k $\Omega$ , $V_{CE} = 5$ V, $I_C = 10$ mA, $\lambda = 959$ nm) 10 % ... 90 % 90 % ... 10 %	$t_R$ $t_F$	20 20	ms ms
Photocurrent ( $V_{CE} = 5$ V, $\Phi_{IN} = 10$ $\mu$ W coupled from the end of a plastic fiber, $\lambda = 660$ nm)	$I_{CE}$	0.8 ( $\geq 0.16$ )	mA
Forward voltage ( $I_F = 50$ mA)	$V_F$	2.1 ( $\leq 2.8$ )	V
Temperature coefficient <i>HFE</i>	$TC_{HFE}$	0.55	%/K
Temperature coefficient $I_{CE}$ $\lambda = 560$ ... 660 nm	$TC_I$	0.34	%/K
Temperature coefficient $I_{CE}$ $\lambda = 830$ nm	$TC_I$	0.49	%/K
Temperature coefficient $I_{CE}$ $\lambda = 950$ nm	$TC_I$	0.66	%/K

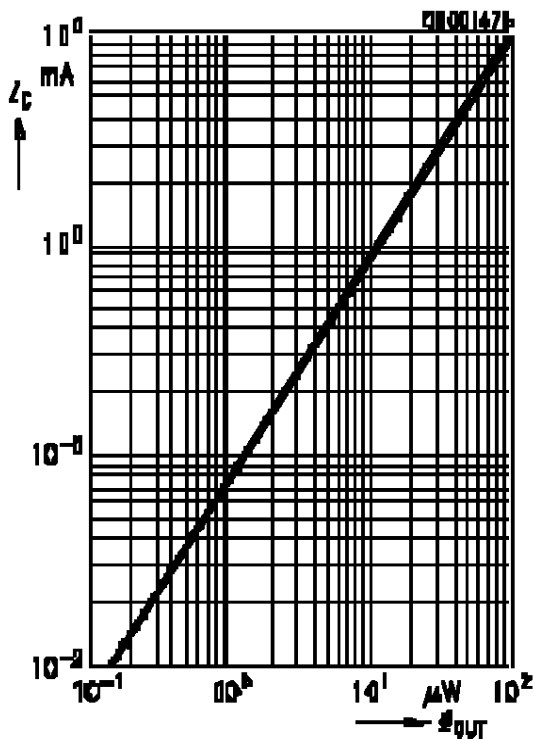
Relative spectral sensitivity  $S_{rel} = f(\lambda)$



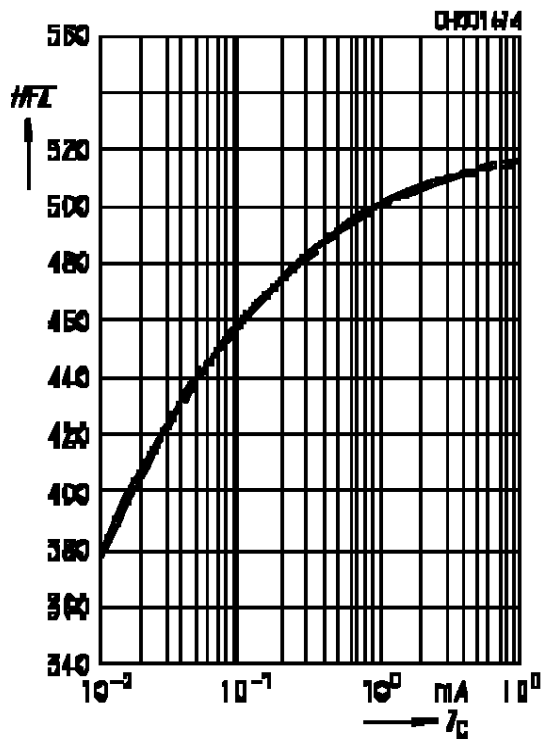
Capacitance  $C = f(V_R), f = 1 \text{ MHz}, E_V = 0$



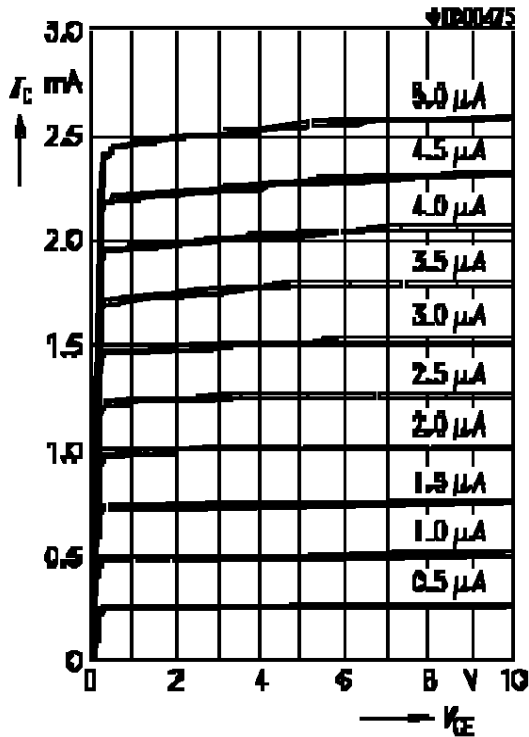
Photocurrent  $I_C = f(\Phi_{OUT}), V_{CE} = 5 \text{ V}, \lambda = 560 \dots 950 \text{ nm}$



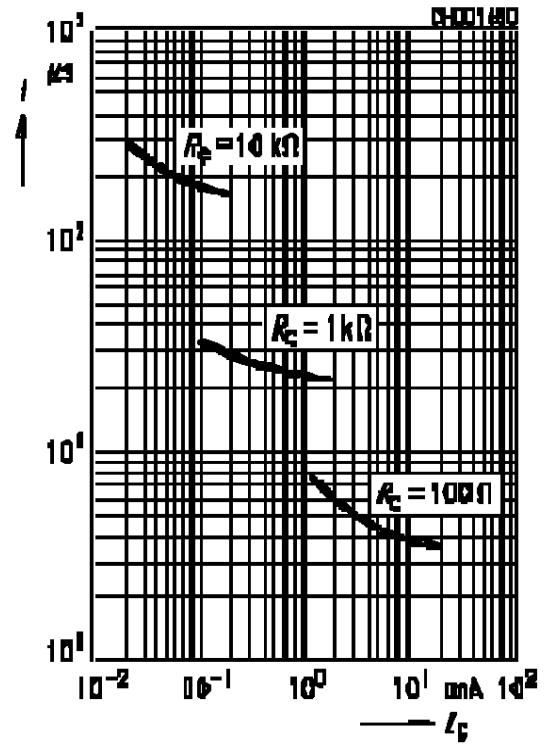
Current gain  $HFE = f(I_C), V_{CE} = 5 \text{ V}, T_A = 25 \text{ }^\circ\text{C}$



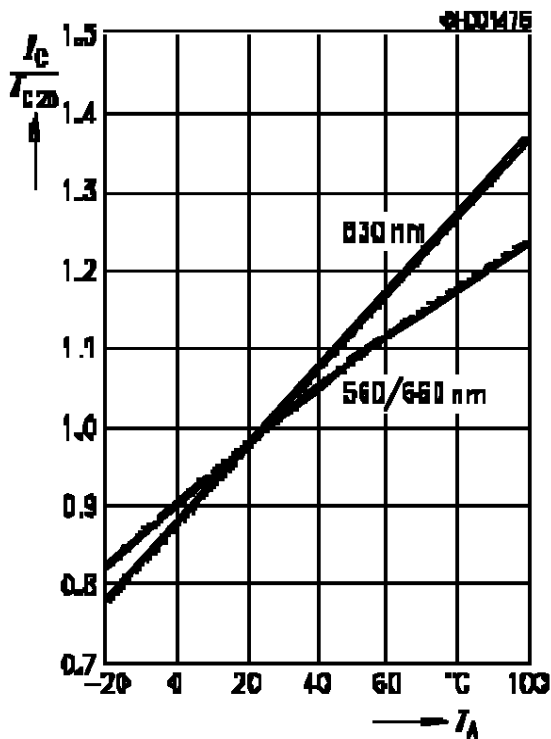
Output characteristics  $I_C = f(V_{CE})$ ,  
 $I_B$  = parameter



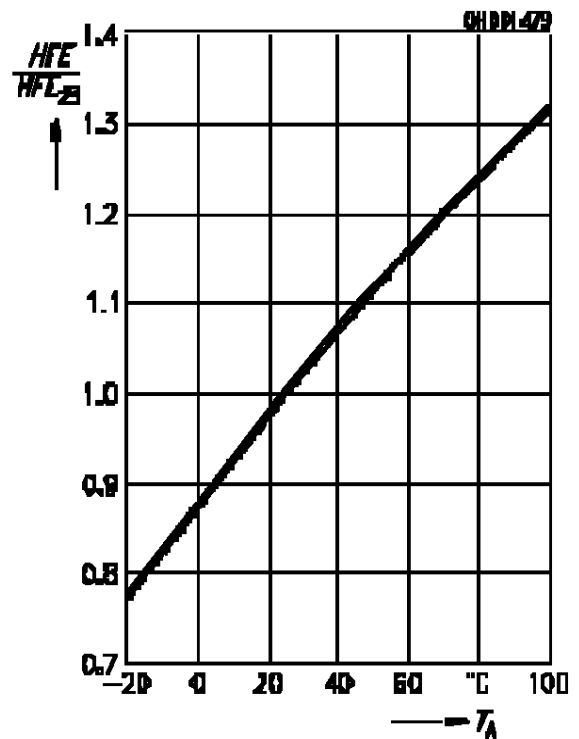
Response time  $t = f(I_C)$ ,  $V_{CC} = 5 V$ ,  
 $\lambda = 950 nm$



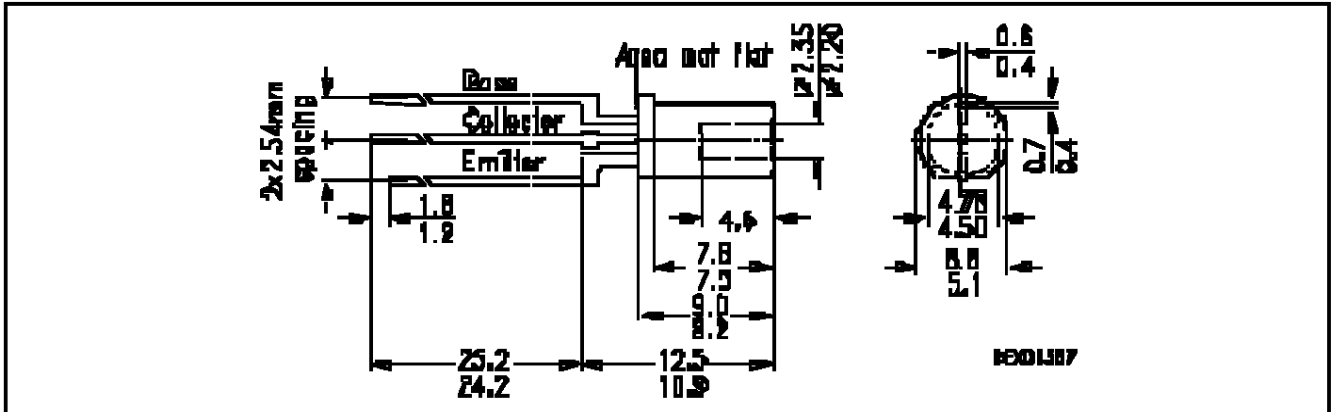
Photocurrent  $I_C/I_{C25} = f(T_A)$ ,  $V_{CE} = 5 V$ ,  
 $\lambda$  = parameter



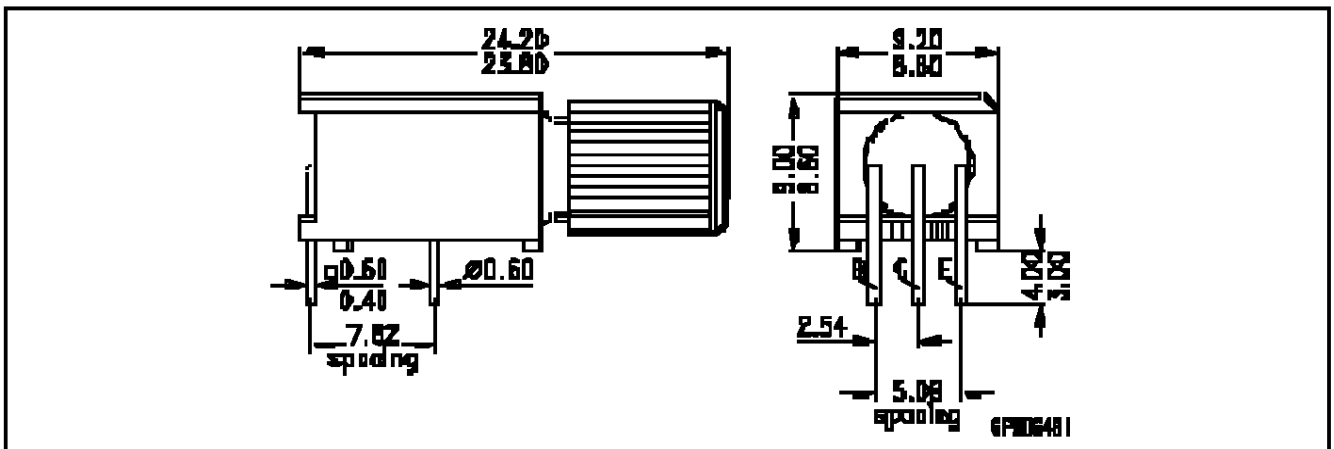
Current gain  $HFE/HFE_{25} = f(T_A)$ ,  $V_{CE} = 5 V$ ,  
 $I_C = 1 mA$



Package Outlines (dimensions in mm, unless otherwise specified)



SFH 350



SFH 350V