Technical Data

Absolute Maximum Ratings

Parameter	Symbol	Limit Values min.	Limit Values max.	Unit
Operating Temperature Range	T_{OP}	–40	+85	°C
Storage Temperature Range	T_{STG}	–40	+100	°C
Soldering Temperature (2mm from case bottom, t ≤ 5 s)	T_S		260	°C
Collector-Emitter Voltage	V_{CE}		50	V
Collector Current	I_C		50	mA
Collector Peak Current (t ≤ 10 s)	I_{CP}		100	mA
Emitter-Bias 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 (TA = 25°C)

Parameter	Symbol	Values min.	Values typ.	Values max.	Unit
Maximum Photosensitivity Wavelength	λ_{Smax}		850		nm
Photosensitivity Spectral Range (S = 10% S_{max})	λ	400		1100	nm
Dark Current ($V_R = 20$ V)	I_R		1 (≤ 10)		nA
Capacitance (f = 1 MHz, without light)					pF
($V_{CE} = 0$ V)	C_{CE}		10.5		
($V_{CB} = 0$ V)	C_{CB}		21.5		
($V_{EB} = 0$ V)	C_{EB}		20.5		
Rise and Fall Times ofPhoto Current ($R_L = 1$ kΩ, $V_{CE} = 5$ V, $I_C = 1.0$ mA, $\lambda = 959$ nm)					ms
10% to 90%	t_R		20		
90% to 10%	t_F		20		
Current Gain	HFE		500		
Collector Dark Current($V_{CE} = 5$ V)	I_{CE0}		2 (≤ 50)		nA
Photo Current (VCE = 5 V,Φ_{IN} = 10 µW coupled from the end of a plastic fiber, λ = 660nm)	I_{CE}		0.8(≥ 0.16)		mA
Temperature Coefficient HFE	TC_{HFE}		0.55		%/K
Temperature Coefficient I_{CE} λ = 560 to 660 nm	TC_I		0.34		%/K
Temperature Coefficient I_{CE} λ = 830 nm			0.49		
Temperature Coefficient I_{CE} λ = 950 nm			0.66		

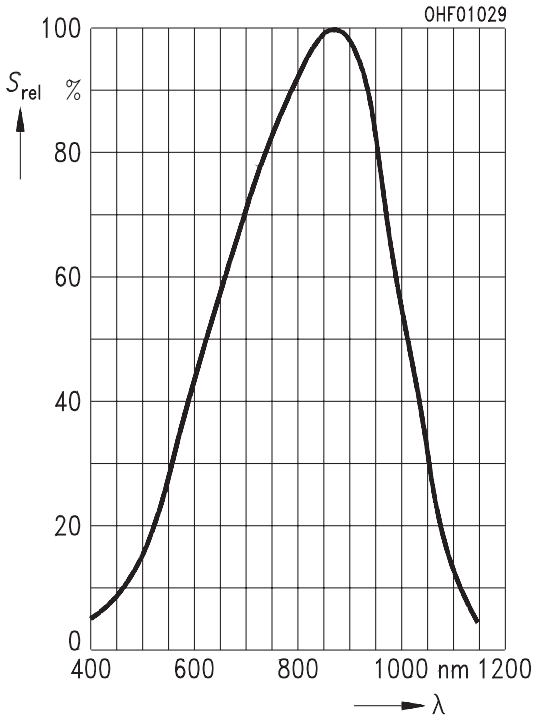


Figure 1. Relative Spectral Sensitivity $S_{rel} = f(\lambda)$

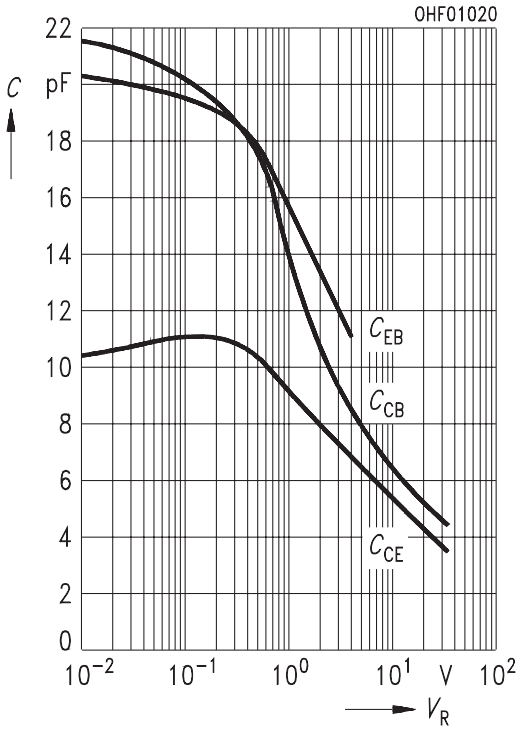


Figure 2. Capacitance $C = f(V_R)$, $f = 1$ MHz, $E_V = 0$

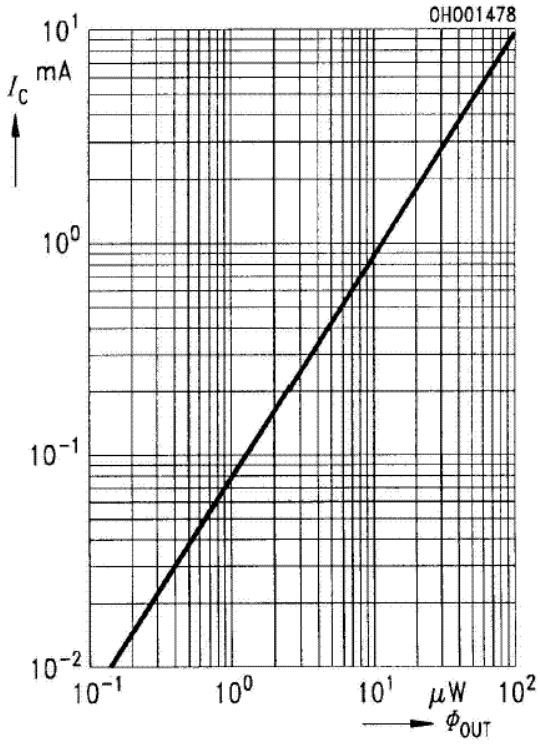


Figure 3. Photocurrent $I_C = f(\Phi_{OUT})$, $V_{CE} = 5$ V, $\lambda = 560...950$ nm

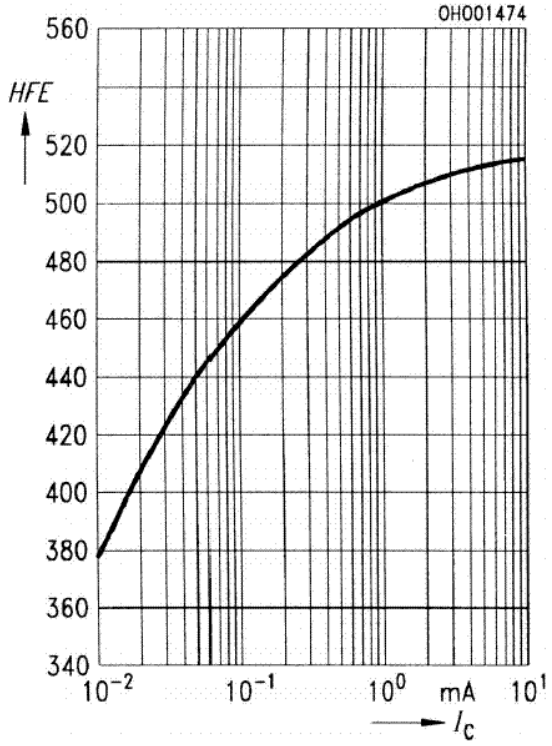


Figure 4. Current Gain $HFE = f(I_C)$, $V_{CE} = 5$ V, $T_A = 25°C$

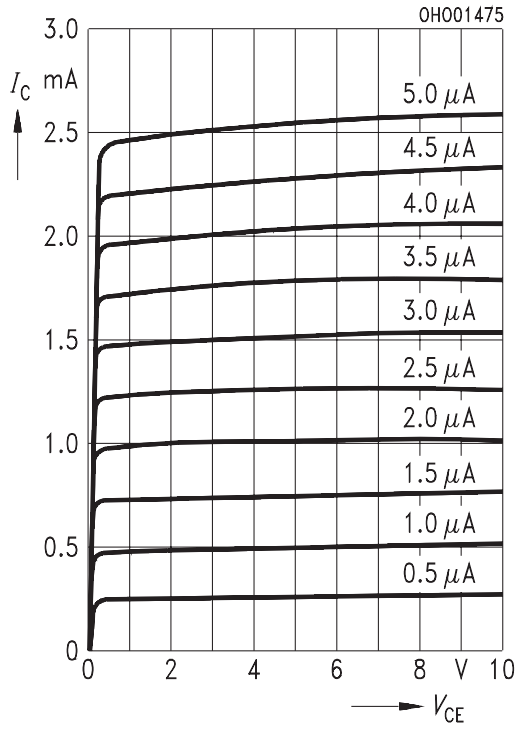


Figure 5. Output Characteristics $I_C = f(V_{CE})$, I_B = parameter

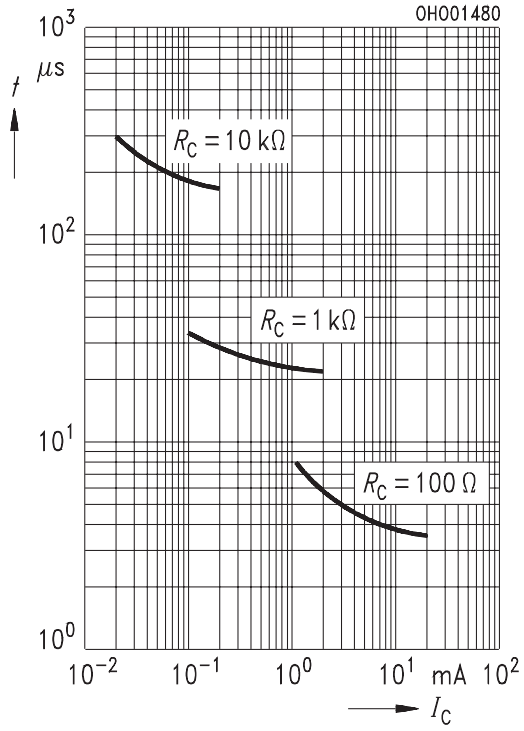


Figure 6. Response Time $t = f(I_C)$, V_{CC} = 5 V, λ = 950 nm

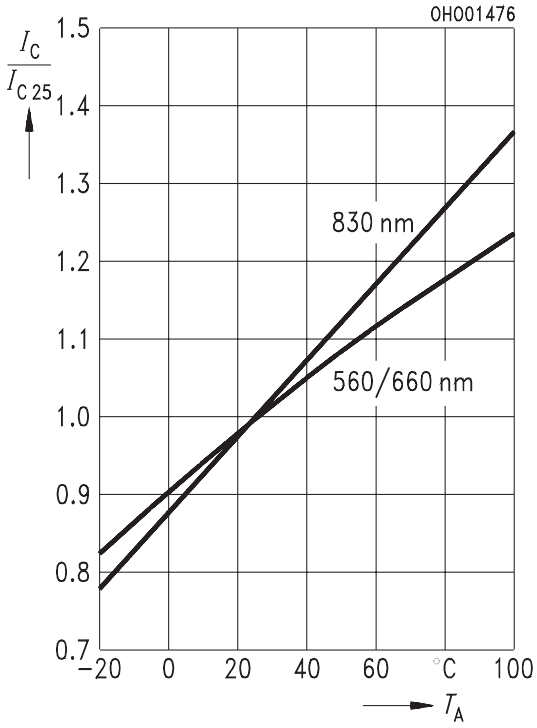


Figure 7. Photocurrent $I_C/I_{C25} = f(T_A)$, V_{CE} = 5 V, λ = parameter

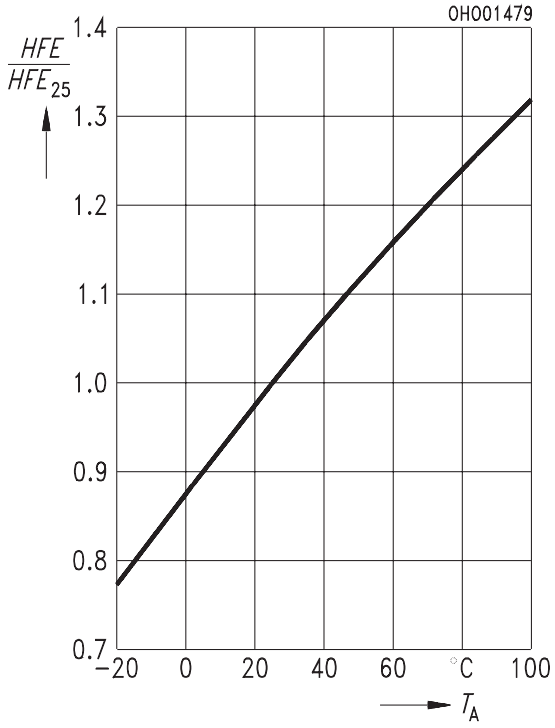
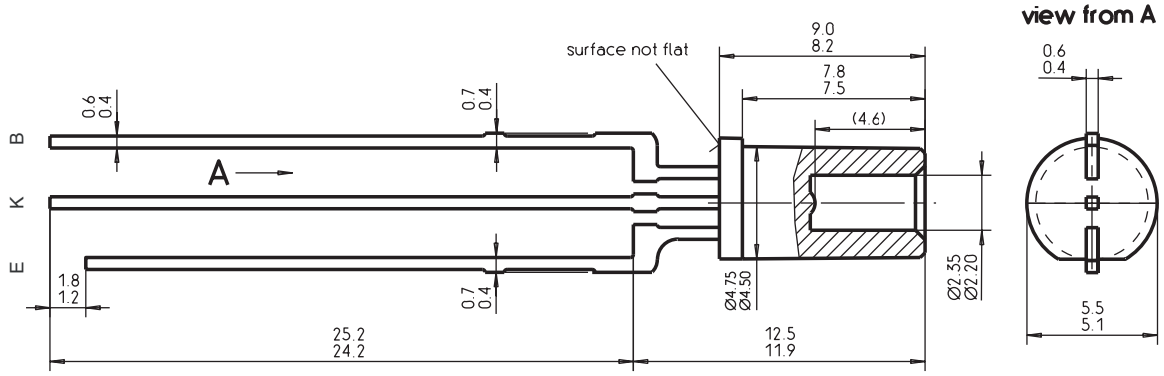


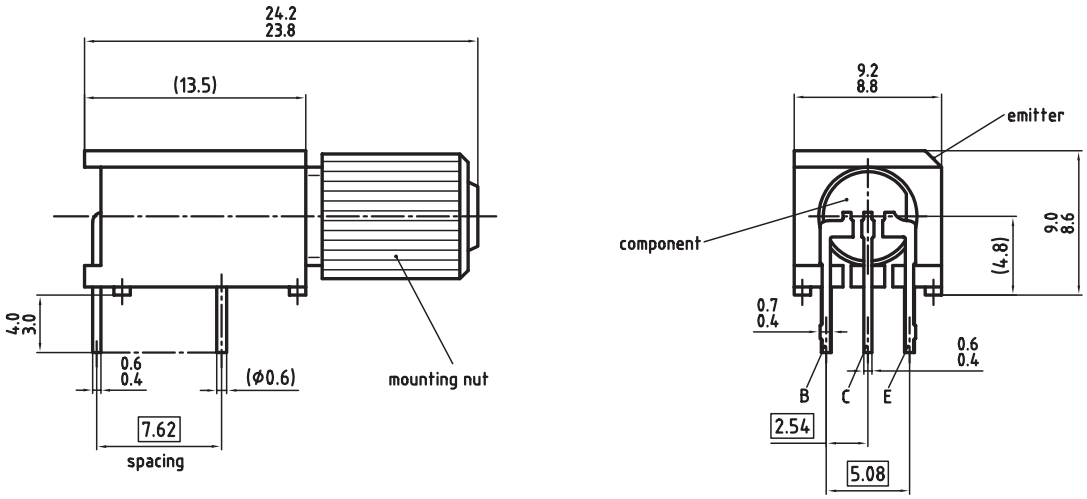
Figure 8. Current Gain $HFE/HFE_{25} = f(T_A)$, V_{CE} = 5 V, I_C = 1 mA

Package Outlines



Dimensions in mm

Figure 9. SFH350



Dimensions in mm

Figure 10. SFH350V

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