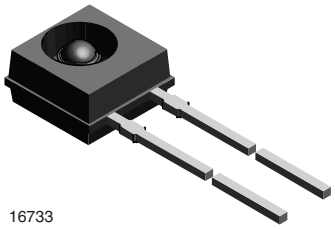
Silicon NPN Phototransistor



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FEATURES

- Package type: leaded
- Package form: side view lens
- Dimensions (L x W x H in mm): 5 x 2.65 x 5
- High radiant sensitivity
- Daylight blocking filter matched with 940 nm emitters
- Fast response times
- Angle of half sensitivity: φ = ± 37°
- Package matched with IR emitter series TSKS5400S
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Pb-free

e3

RoHS COMPLIANT

GREEN (5-2008)**

Note

** Please see document “Vishay Material Category Policy”: www.vishay.com/doc?99902

DESCRIPTION

TEKT5400S is a silicon NPN phototransistor with high radiant sensitivity, molded in a plastic package with side view lens and daylight blocking filter. Filter bandwidth is matched with 950 nm IR emitters.

APPLICATIONS

- Detector in electronic control and drive circuits

PRODUCT SUMMARY			
COMPONENT	I_{ca} (mA)	φ (deg)	$\lambda_{0.5}$ (nm)
TEKT5400S	4	± 37	850 to 980

Note

- Test condition see table “Basic Characteristics”

ORDERING INFORMATION			
ORDERING CODE	PACKAGING	REMARKS	PACKAGE FORM
TEKT5400S	Bulk	MOQ: 2000 pcs, 2000 pcs/bulk	Side view lens

Note

- MOQ: minimum order quantity

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Collector emitter voltage		V_{CEO}	70	V
Emitter collector voltage		V_{ECO}	7	V
Collector current		I_C	100	mA
Collector peak current	$t_p/T \leq 0.5$, $t_p \leq 10$ ms	I_{CM}	200	mA
Power dissipation	$T_{amb} \leq 40$ °C	P_V	150	mW
Junction temperature		T_j	100	°C
Operating temperature range		T_{amb}	- 40 to + 85	°C
Storage temperature range		T_{stg}	- 40 to + 100	°C
Soldering temperature	t ≤ 5 s	T_{sd}	260	°C
Thermal resistance junction/ambient	J-STD-051, soldered on PCB	R_{thJA}	270	K/W

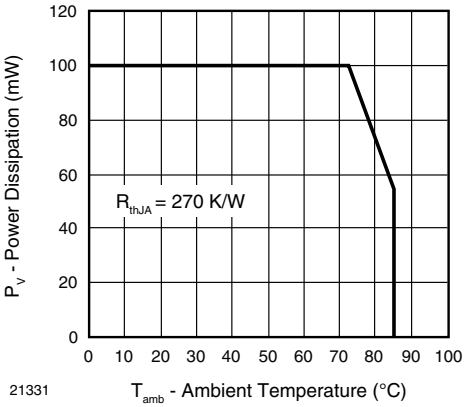


Fig. 1 - Power Dissipation Limit vs. Ambient Temperature

BASIC CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Collector emitter voltage	I_C = 1 mA	V_{CEO}	70			V
Emitter collector voltage	I_E = 100 µA	V_{ECO}	7			V
Collector dark current	V_{CE} = 20 V, E = 0	I_{CEO}		1	100	nA
Collector emitter capacitance	V_{CE} = 5 V, f = 1 MHz, E = 0	C_{CEO}		6		pF
Collector ligth current	E_e = 1 mW/cm², λ = 950 nm, V_{CE} = 5 V	I_{ca}	2	4		mA
Angle of half sensitivity		φ		± 37		deg
Wavelength of peak sensitivity		λ_p		920		nm
Range of spectral bandwidth		$\lambda_{0.5}$		850 to 980		nm
Collector emitter saturation voltage	E_e = 1 mW/cm², λ = 950 nm, I_C = 0.1 mA	V_{CEsat}			0.3	V
Turn-on time	V_S = 5 V, I_C = 5 mA, R_L = 100 Ω	t_{on}		6		µs
Turn-off time	V_S = 5 V, I_C = 5 mA, R_L = 100 Ω	t_{off}		5		µs
Cut-off frequency	V_S = 5 V, I_C = 5 mA, R_L = 100 Ω	f_c		110		kHz

BASIC CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

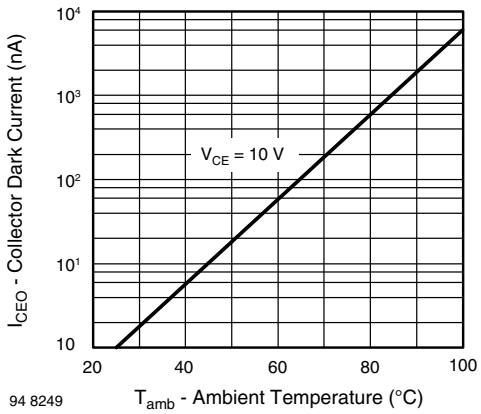


Fig. 1 - Collector Dark Current vs. Ambient Temperature

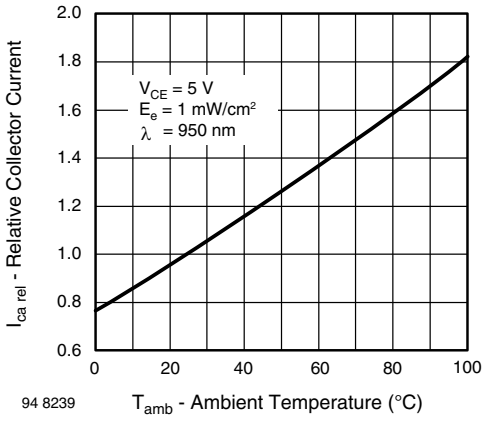


Fig. 2 - Relative Collector Current vs. Ambient Temperature

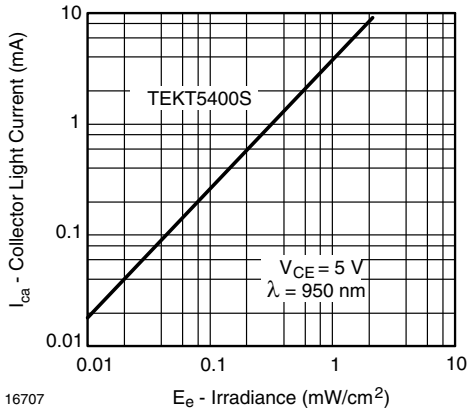


Fig. 3 - Collector Light Current vs. Irradiance

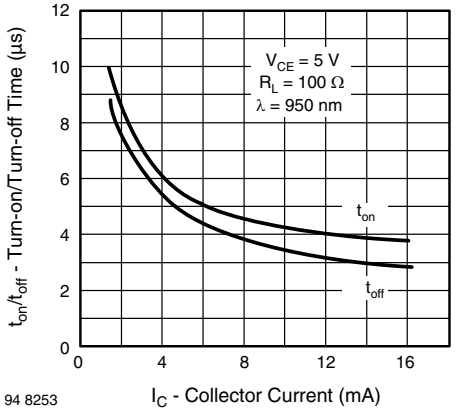


Fig. 6 - Turn-on/Turn-off Time vs. Collector Current

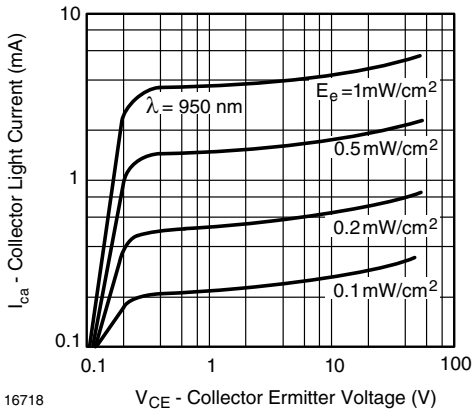


Fig. 4 - Collector Light Current vs. Collector Emitter Voltage

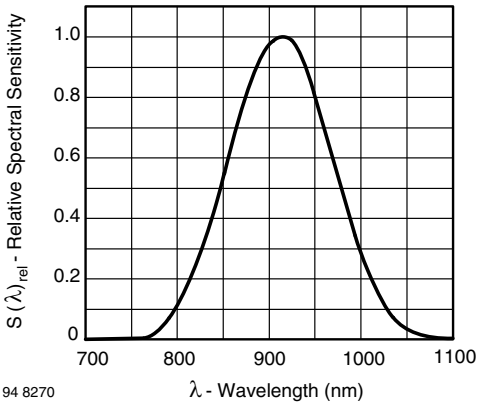


Fig. 7 - Relative Spectral Sensitivity vs. Wavelength

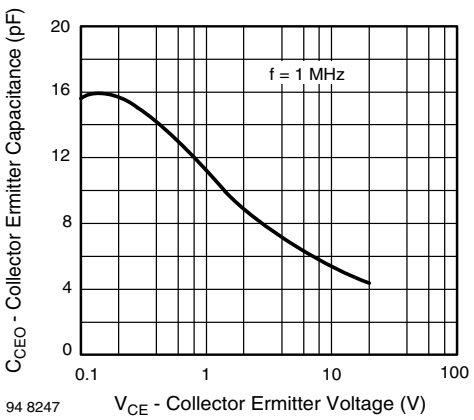


Fig. 5 - Collector Emitter Capacitance vs. Collector Emitter Voltage

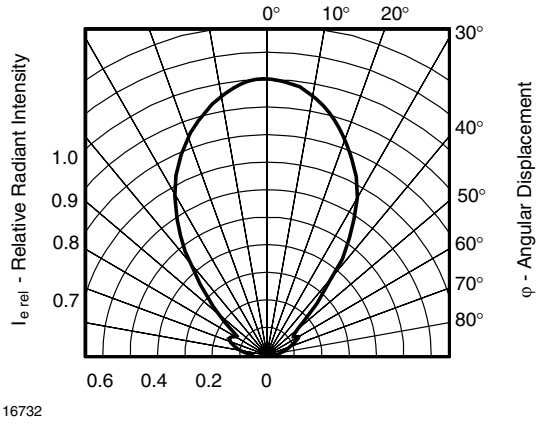
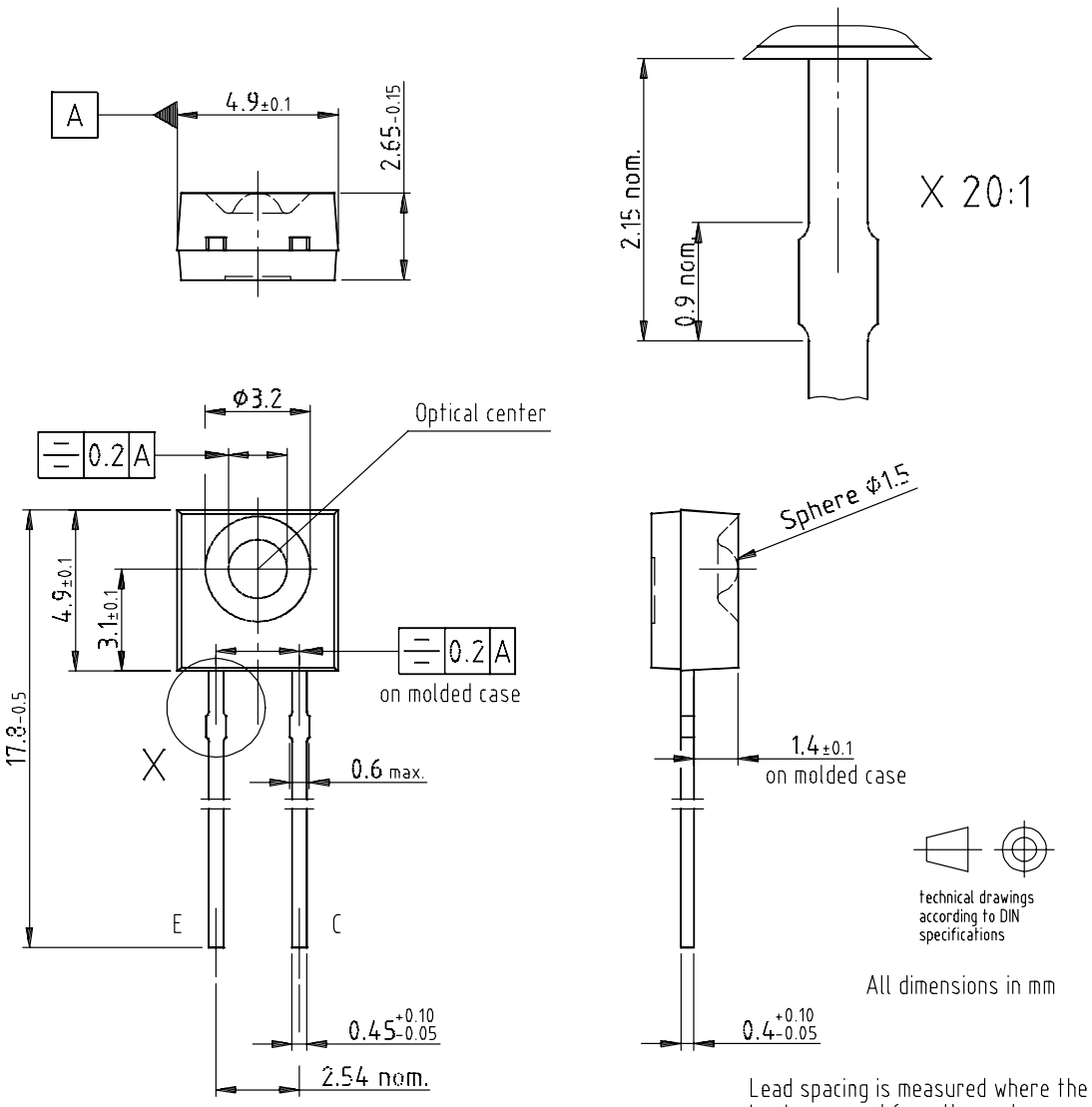


Fig. 8 - Relative Radiant Intensity vs. Angular Displacement

PACKAGE DIMENSIONS in millimeters

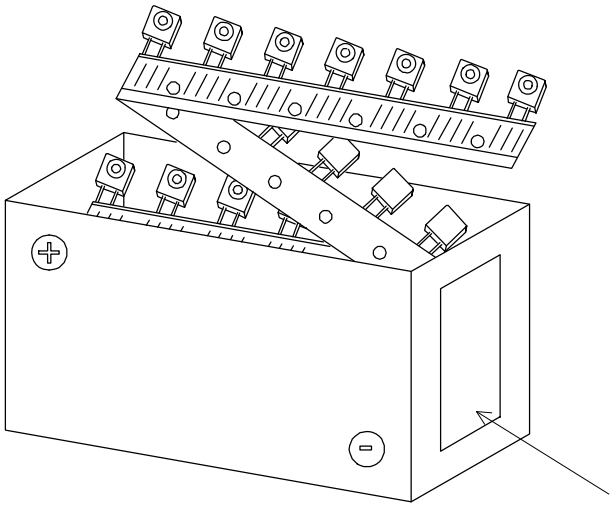


Drawing-No.: 6.544-5347.01-4
Issue: 2; 09.04.03

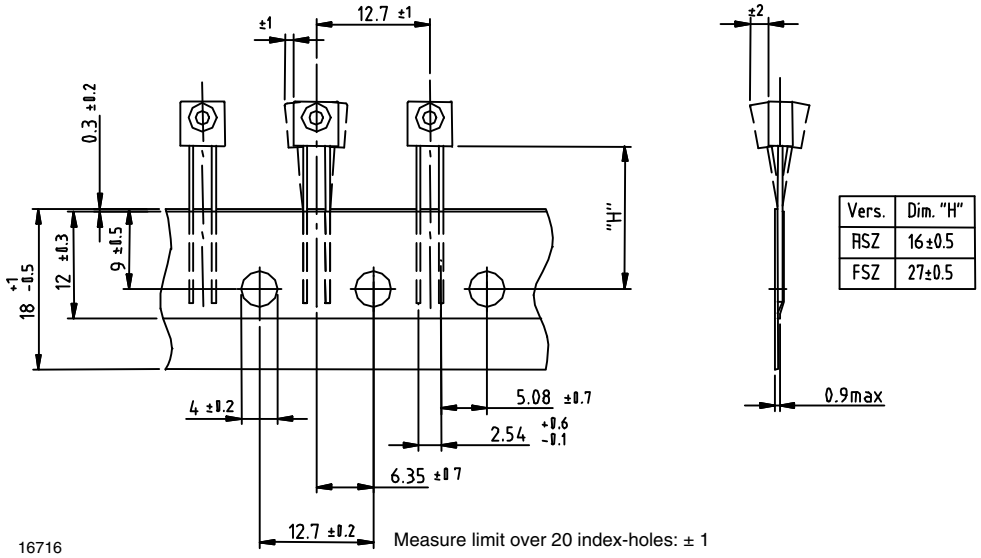
Protruded resin area where the
leads emerged from the package 0.8 max.

16706

TAPE AND AMMOPACK STANDARDS Dimensions in millimeters



Labeling: barcode-label see 5.6.4



Vers.	Dim. "H"
RSZ	16±0.5
FSZ	27±0.5

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