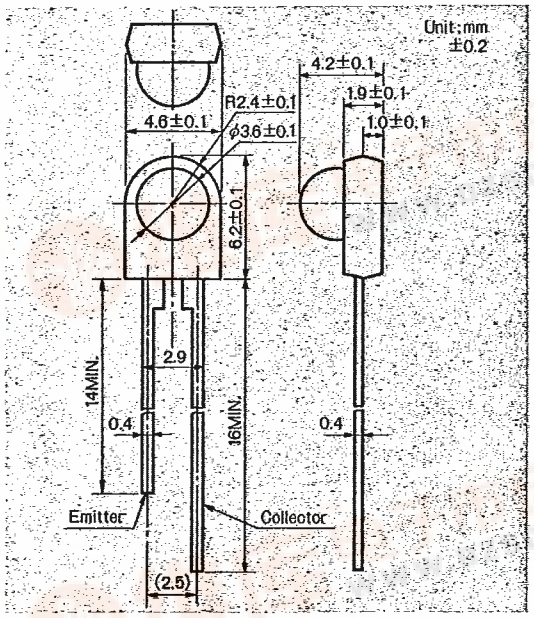
STANLEY

STANLEY PHOTO DARLINGTONTRANSISTOR

PD504

T-41-63

■ Package Dimensions



■ FEATURES

(1) High photo current
(Typ. 15mA at Ee = 0.1mW/cm²)
(2) Best suited for photointerrupter
(3) Efficient when used in combination with IR LED, BN504

■ APPLICATIONS

(1) Photoelectric switch, photoelectric counter
(2) Tape and card readers
(3) Tape-end detection sensors for VTR, cassette tape recorder
(4) Sensors for stroboscope

■ Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Maximum Ratings	Unit
Collector Dissipation	Pc	100	mW
Collector-Emitter Breakdown Voltage	V_{CEO}	20	V
Emitter-Collector Breakdown Voltage	V_{ECO}	5	V
Collector Current	Ic	30	mA
Operating Temperature	Topr	−30 ~ +85	℃
Storage Temperature	Tstg	−30 ~ +100	℃

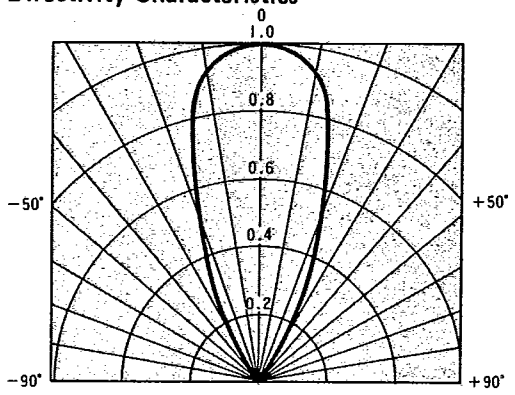
■ Electro-Optical Characteristics (Ta = 25°C)

*At color temp. 2856°K standard tungsten filament bulb.

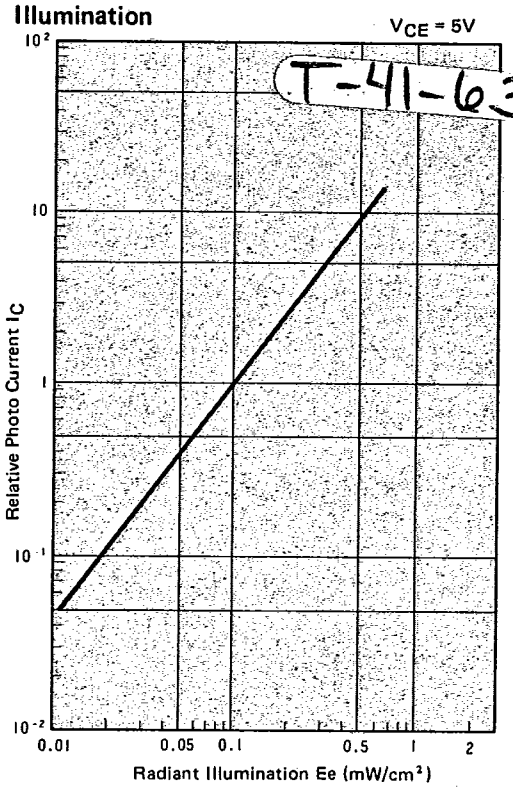
Item		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-Emitter Dark Current		I_{CEO}	——	——	1	μA	V_{CE} = 10 V、Ee = 0
Photo current		Ic	3	15	——	mA	V_{CE} = 5 V、*Ee = 0.1mW/cm²
Response Time	Rise	t_r	——	400	——	μ sec	Vcc = 10 V
	Fall	t_f	——	400	——	μ sec	Ic = 2mA、RL = 100 Ω
Peak Sensitivity Wavelength		λp	——	800	——	nm	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	——	0.7	——	V	Ic = 5 mA、*Ee = 10mW/cm²

T-41-63

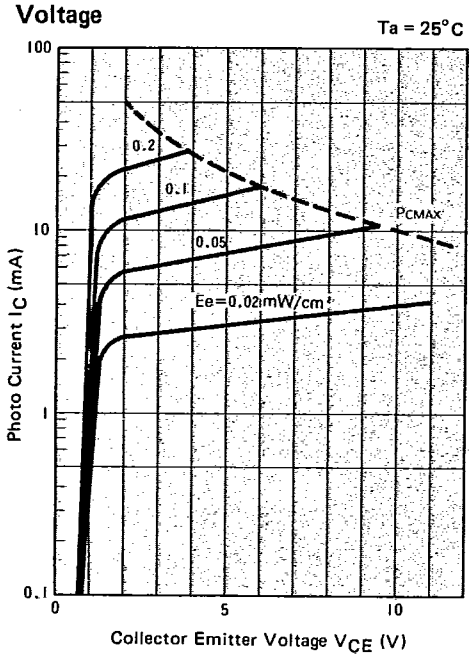
■ Directivity Characteristics



■ Relative Photo Current Vs. Radiant Illumination



■ Photo Current Vs. Collector Emitter Voltage



■ Photo Current Vs. Ambient Temp.

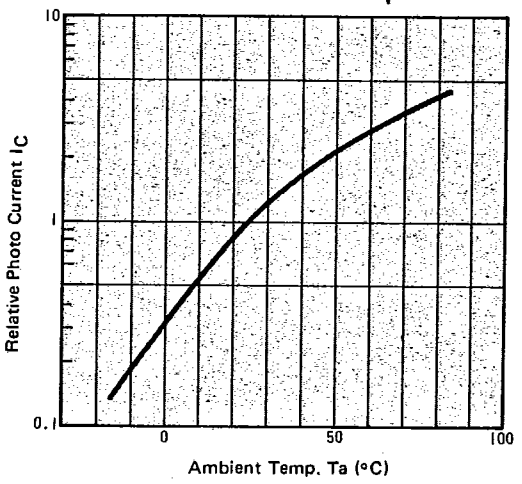
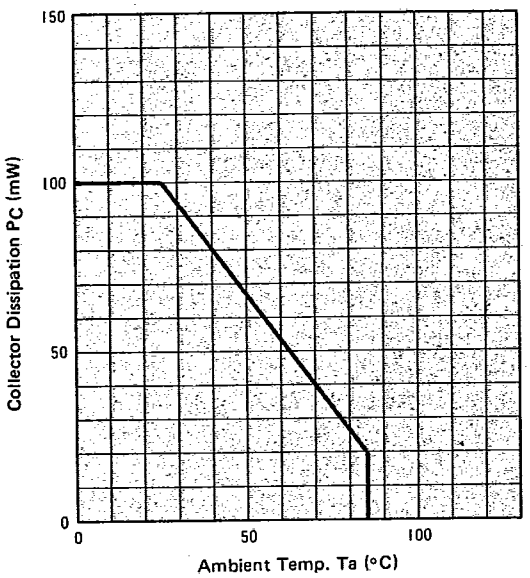


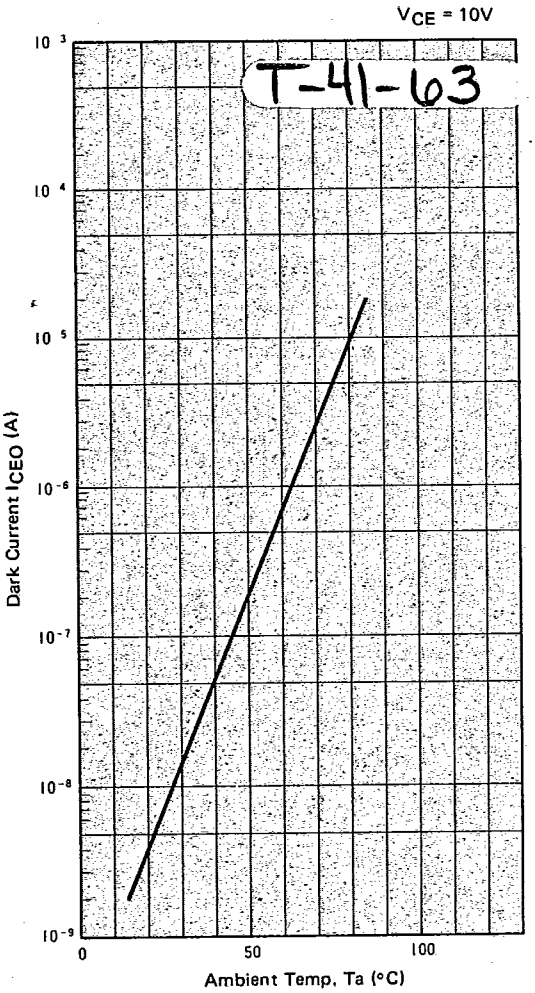
PHOTO DARLINGTON TRANSISTOR

T-41-63

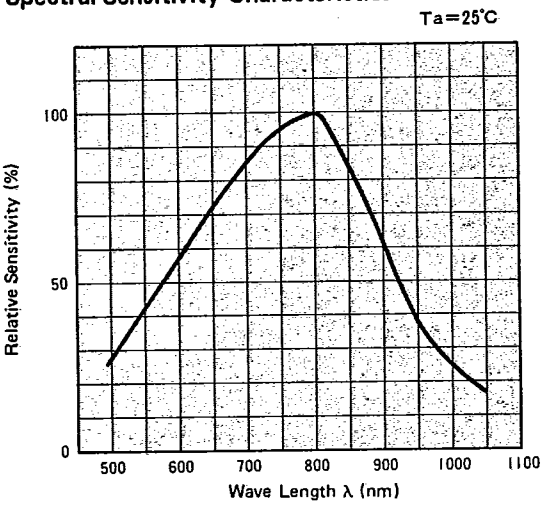
■ Collector Dissipation Vs. Ambient Temp.



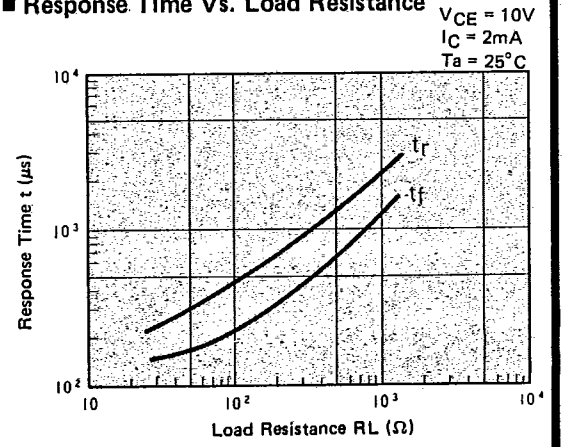
■ Dark Current Vs. Ambient Temp.



■ Spectral Sensitivity Characteristics



■ Response Time Vs. Load Resistance



■ Response Time Measuring Circuit