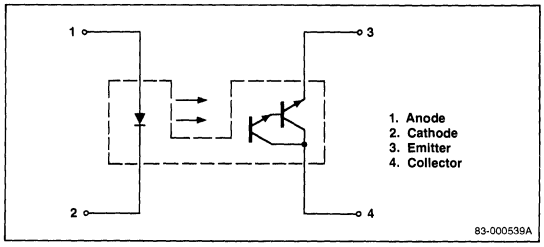
PS4001/3/5/7/9/10/11
PHOTO INTERRUPTERS
NEPOC SERIES

Description

The PS4001, PS4003, PS4005, PS4007, and PS4009 are photo coupled interrupter modules containing a GaAs light emitting diode and an NPN silicon Darlington connected photo transistor.

Pin Connection



Absolute Maximum Ratings
T_A = +25°C

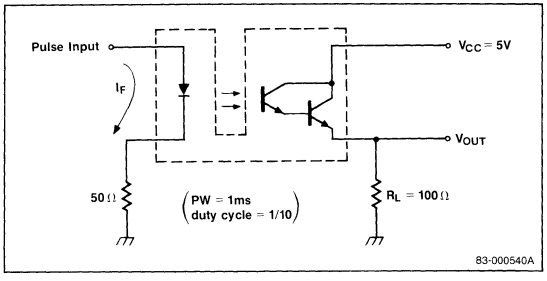
Diode	
Reverse Voltage, V_R	5.0V
Forward Current, I_F	50mA
Power Dissipation, P_D	100mW
Transistor	
Collector to Emitter Voltage, V_{CEO}	30V
Collector Current, I_C	50mA
Power Dissipation, P_D	100mW
Storage Temperature, T_{STG}	−40°C to +100°C
Operating Temperature, T_{OPT}	−20°C to +80°C

Electrical Characteristics
T_A = +25°C

Parameter	Symbol	Limits Min	Typ	Max	Unit	Test Conditions
Diode						
Forward Voltage	V_F		1.1	1.4	V	I_F = 20mA
Reverse Current	I_R			20	μA	V_R = 4.0V
Junction Capacitance	C		100		pF	V = 0, f = 1.0MHz
Transistor						
Collector to Emitter Dark Current	I_{CEO}			400	nA	V_{CE} = 10V, I_F = 0
Coupled						
Current Transfer Ratio	CTR (I_C/I_F)	20[1]			%	I_F = 10mA, V_{CE} = 2.0V
Collector Saturation Voltage	$V_{CE(sat)}$			1.2	V	I_F = 10mA, I_C = 0.5mA
Rise Time	t_r		200		μs	V_{CC} = 5.0V, I_C = 2.0mA, R_L = 100Ω[2]
Fall Time	t_f		200		μs	V_{CC} = 5.0V, I_C = 2.0mA, R_L = 100Ω[2]

Notes: 1. PS4003: 15% min., others: 20% min.
2. Test circuit for switching time.

Test circuit for switching time



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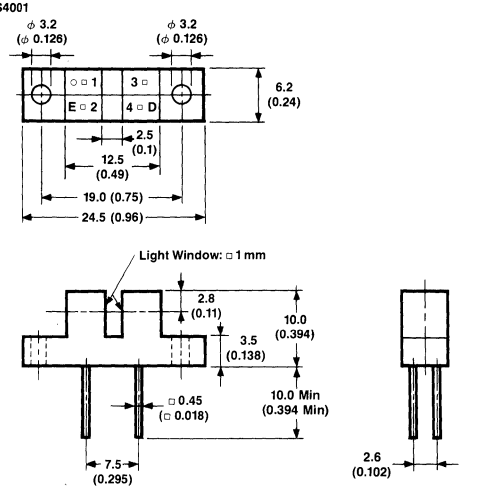
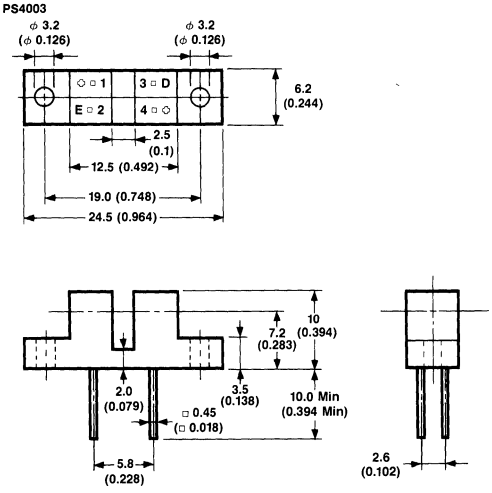
Package Dimensions

PS4001



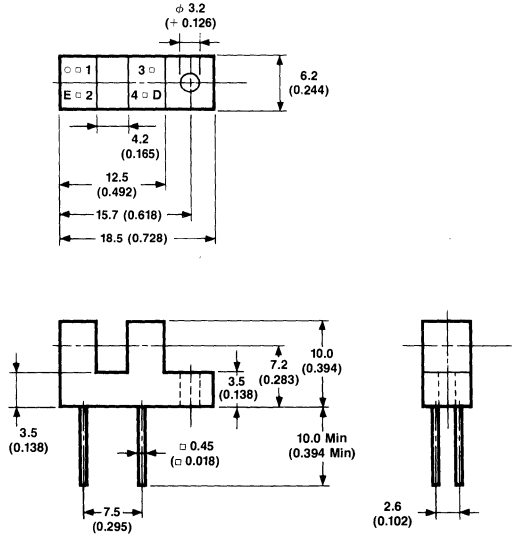
83-000541A

PS4003



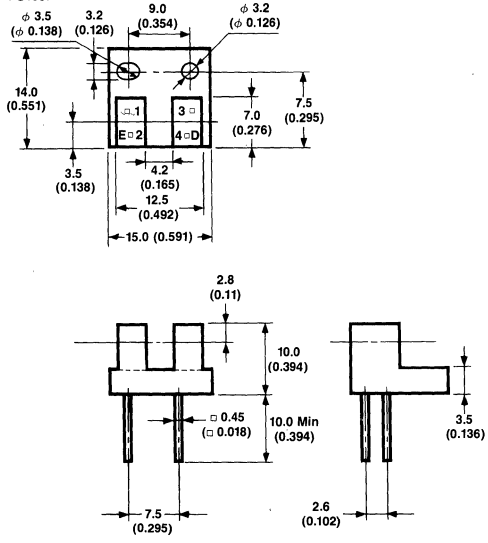
83-000542A

PS4005



83-000543A

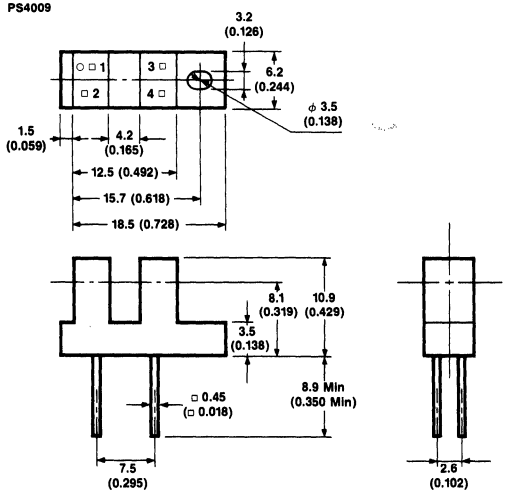
PS4007



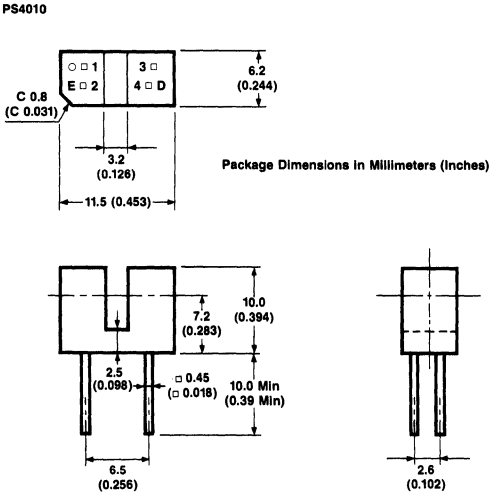
83-000544A

Package Dimensions (cont)

PS4009

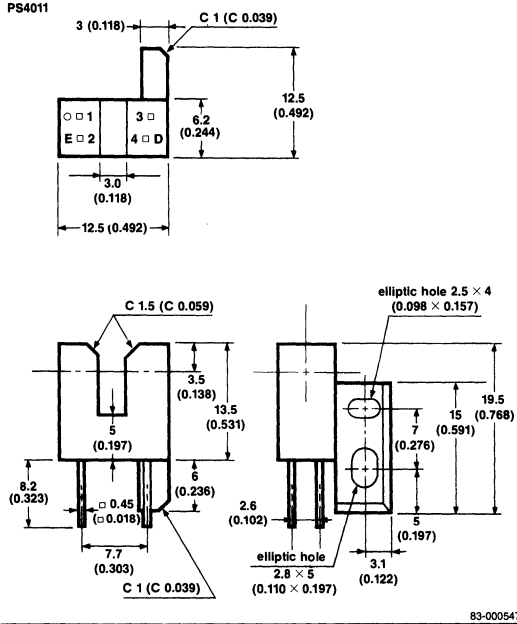


PS4010



Package Dimensions in Millimeters (Inches)

PS4011



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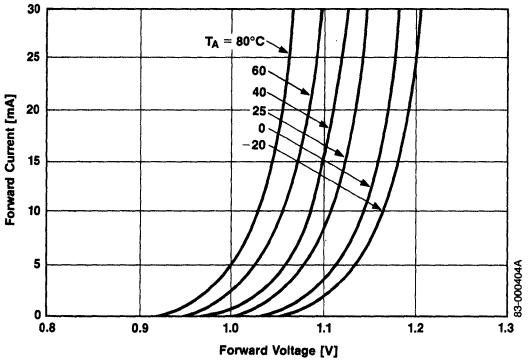
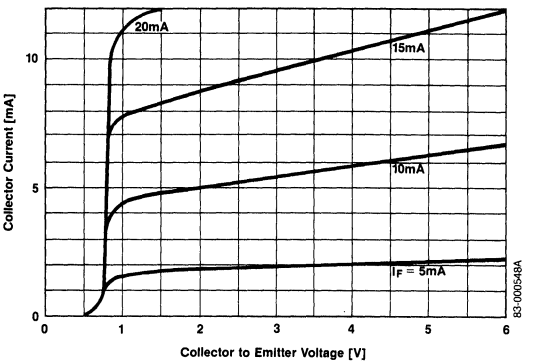
Typical Characteristics
T_A = +25°C

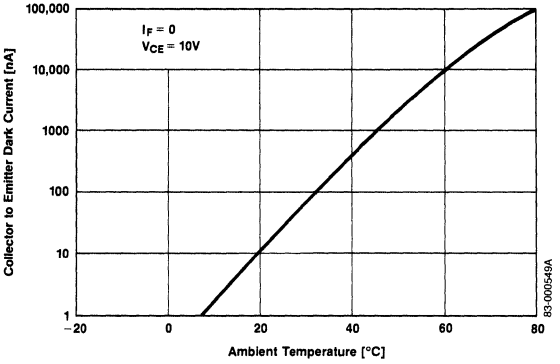
Forward Current vs Forward Voltage



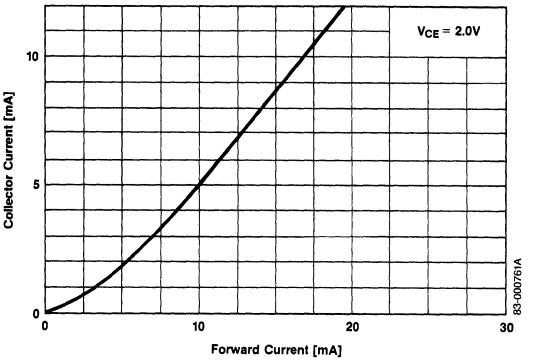
Collector Current vs Collector to Emitter Voltage



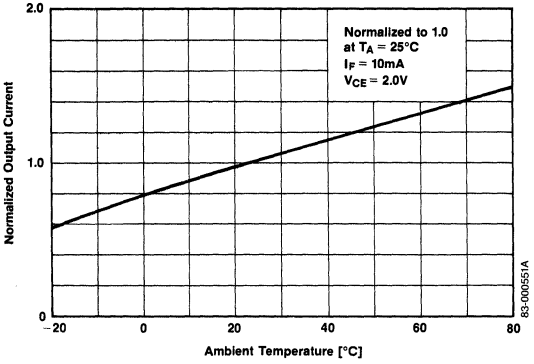
Collector to Emitter Dark Current vs Ambient Temperature



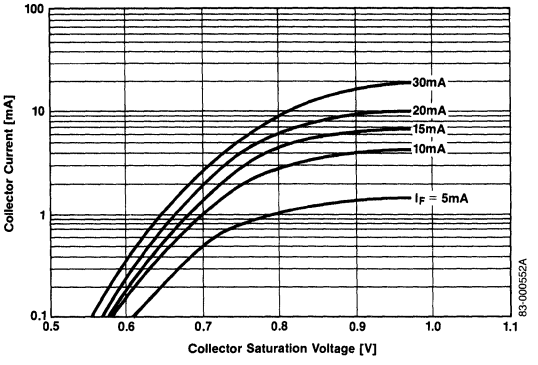
Collector Current vs Forward Current



Normalized Output Current vs Ambient Temperature



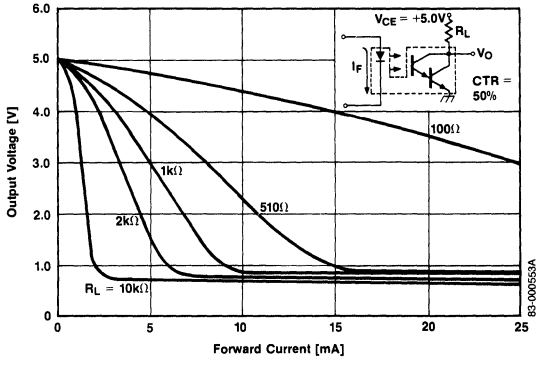
Collector Current vs Collector Saturation Voltage



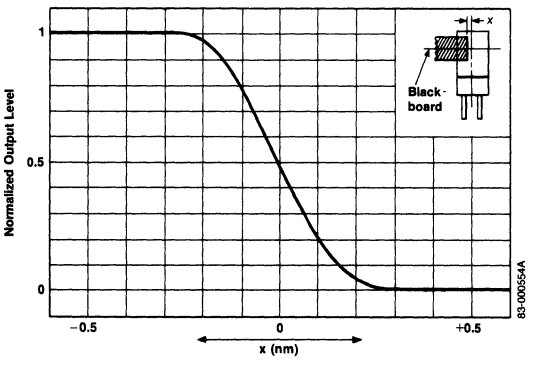
Typical Characteristics (cont)

T_A = +25°C

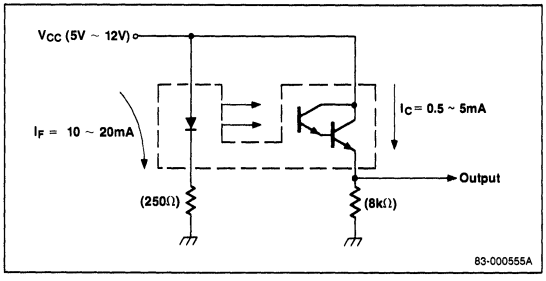
Output Voltage vs Forward Current



Output Characteristic



Typical Applications



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