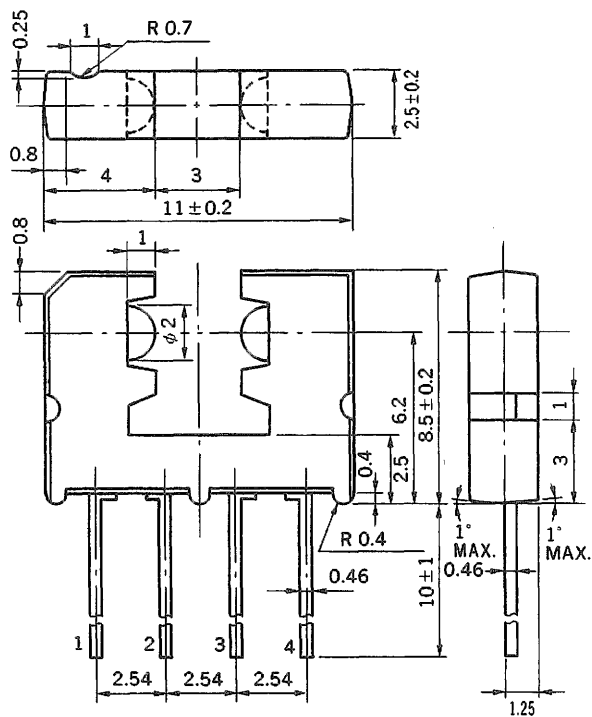


ONE PIECE PHOTO INTERRUPTER

—NEPOC SERIES—

PACKAGE DIMENSIONS
in millimeters



DESCRIPTION

The PS4601 contains a GaAs LED and NPN photo transistor in one molded package.

FEATURES

- Ultra small and thin package (Width = 2.5 mm TYP.)
- High speed response ($t = 9 \mu s$ TYP.)
- Single in-line package (4 PIN)

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

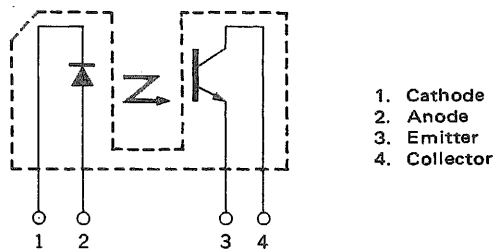
Diode

Reverse Voltage	V_R	5.0	V
Forward Current	I_F	50	mA
Power Dissipation	P_D	100	mW

Transistor

Collector to Emitter Voltage	V_{CEO}	30	V
Collector Current	I_C	40	mA
Power Dissipation	P_C	100	mW
Storage Temperature	T_{stg}	-40 to +100	$^\circ C$
Operating Temperature	T_{opt}	-20 to +80	$^\circ C$

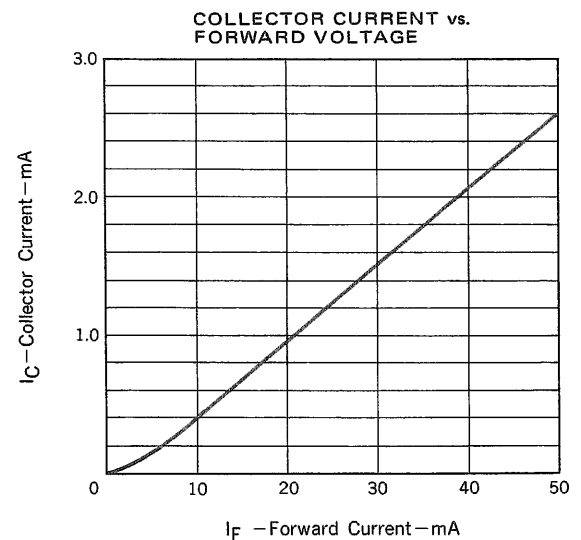
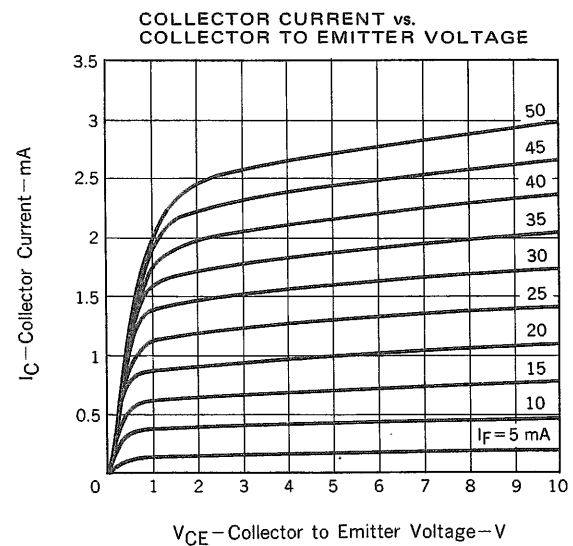
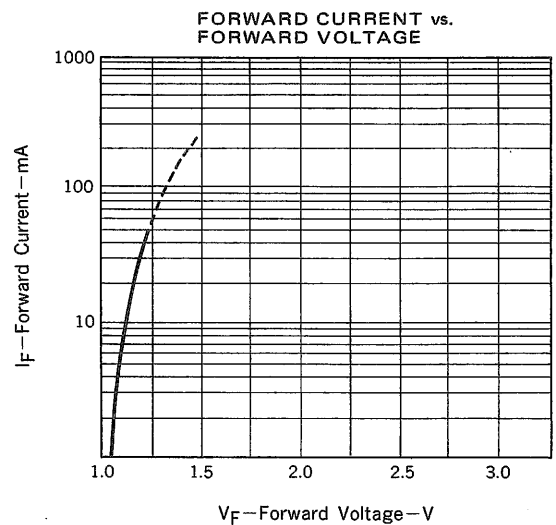
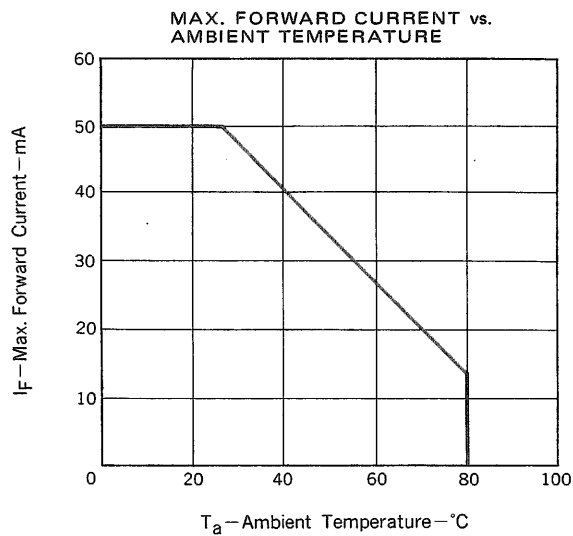
CONNECTION DIAGRAM



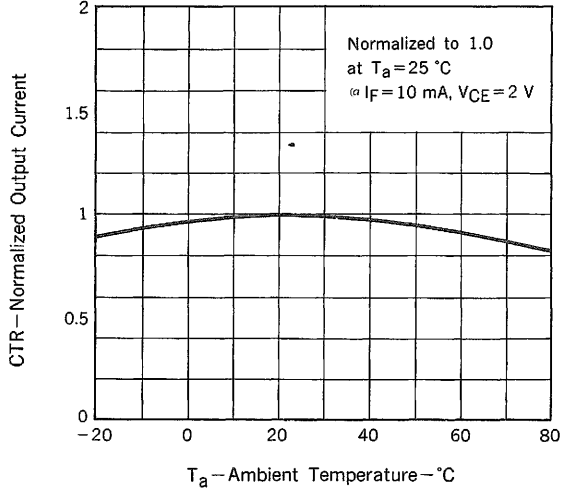
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

	CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Diode	Forward Voltage	V_F		1.1	1.4	V	$I_F = 10\text{ mA}$
	Reverse Current	I_R			10	μA	$V_R = 5.0\text{ V}$
	Junction Capacitance	C		30		pF	$V = 0, f = 1.0\text{ MHz}$
Transistor	Collector to Emitter Dark Current	I_{CEO}			100	nA	$V_{CE} = 10\text{ V}, I_F = 0$
Coupled	Output Current	I_C	150	400		μA	$I_F = 10\text{ mA}, V_{CE} = 2.0\text{ V}$
	Collector Saturation Voltage	$V_{CE(sat)}$			0.3	V	$I_F = 10\text{ mA}, I_C = 100\text{ }\mu\text{A}$
	Collector Leak Current Ratio	I_{leak}/I_C		0.5		%	$I_F = 10\text{ mA}, V_{CE} = 2.0\text{ V (shielded)}$
	Rise Time	t_r		9		μs	$V_{CC} = 5\text{ V}, I_C = 500\text{ }\mu\text{A}, R_L = 100\text{ }\Omega^*$
	Fall Time	t_f		12		μs	$V_{CC} = 5\text{ V}, I_C = 500\text{ }\mu\text{A}, R_L = 100\text{ }\Omega^*$

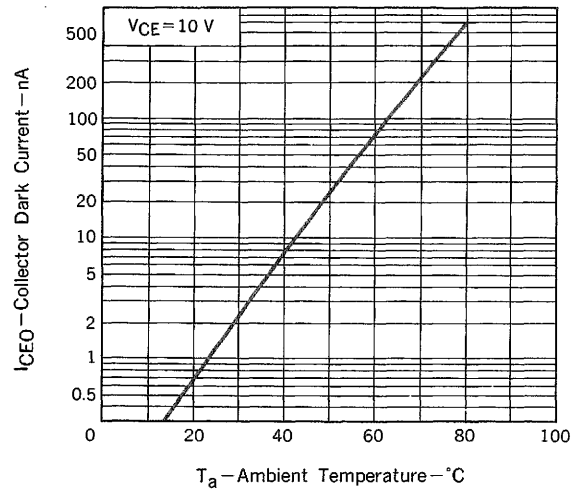
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



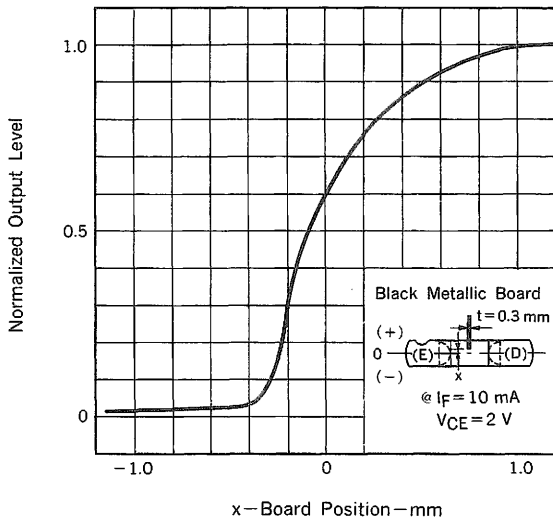
NORMALIZED OUTPUT CURRENT vs. AMBIENT TEMPERATURE



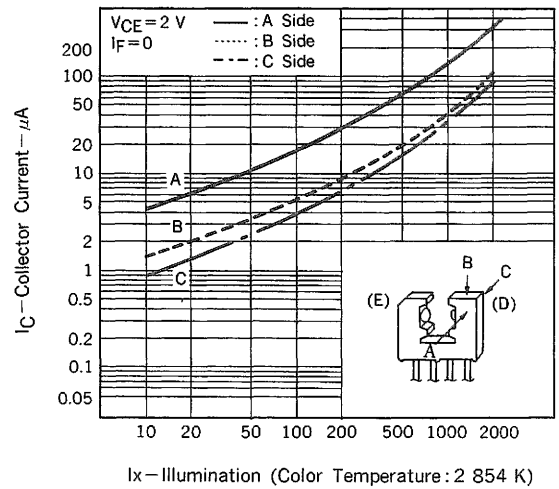
COLLECTOR DARK CURRENT vs. AMBIENT TEMPERATURE



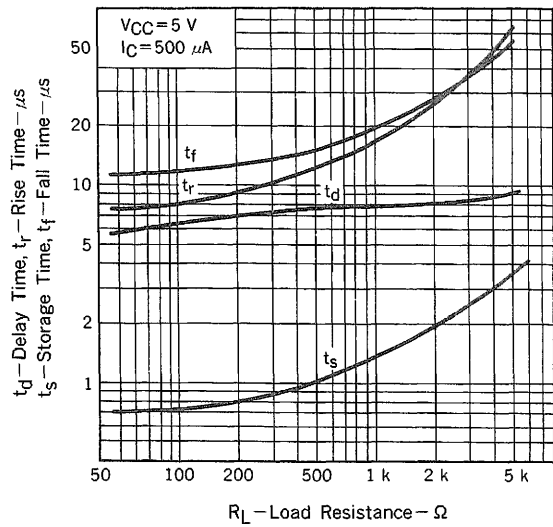
OUTPUT CHARACTERISTIC



COLLECTOR CURRENT vs. ILLUMINATION



SWITCHING TIME vs. LOAD RESISTANCE



* Test Circuit for Switching Time

