

NEC

NEC Electronics Inc.

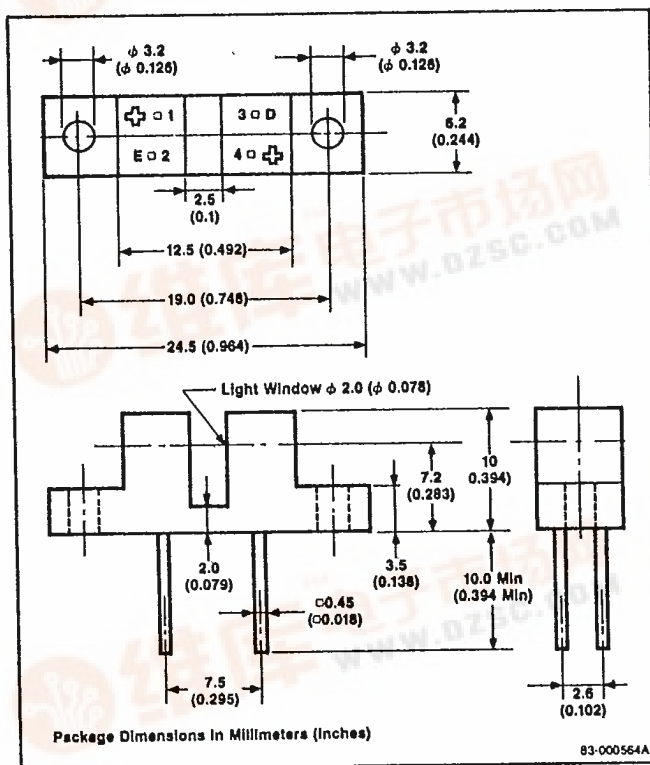
PS4014 PHOTO INTERRUPTER

NEPOC SERIES

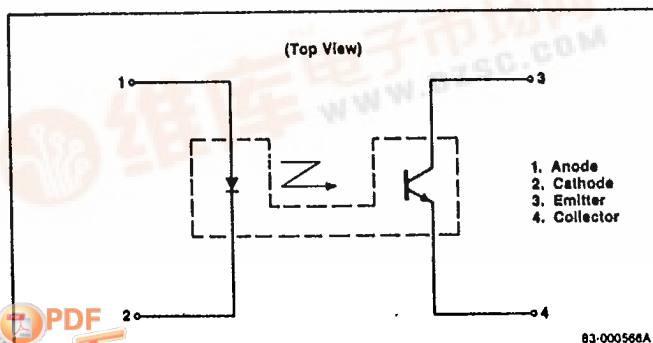
Description

The PS4014 is a photo coupled interrupter module containing a GaAs light emitting diode and an NPN silicon photo transistor.

Package Dimensions



Pin Connection



Absolute Maximum Ratings

$T_A = +25^\circ\text{C}$

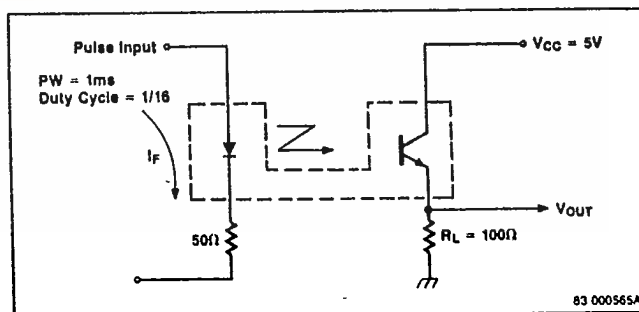
Diode	
Reverse Voltage, V_R	5.0V
Forward Current, I_F	50mA
Power Dissipation, P_D	100mW
Transistor	
Collector to Emitter Voltage, V_{CE0}	30V
Collector Current, I_C	40mA
Power Dissipation, P_D	100mW
Storage Temperature, T_{STG}	-40°C to $+100^\circ\text{C}$
Operating Temperature, T_{OPT}	-20°C to $+80^\circ\text{C}$

Electrical Characteristics

$T_A = +25^\circ\text{C}$

Parameter	Symbol	Limits			Unit	Test Conditions
		Min	Typ	Max		
Diode						
Forward Voltage	V_F		1.1	1.4	V	$I_F = 20\text{mA}$
Reverse Current	I_R			20	μA	$V_R = 4.0\text{V}$
Junction Capacitance	C		100		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	200	500		μA	$I_F = 20\text{mA}$, $V_{CE} = 5.0\text{V}$
Collector Saturation Voltage	$V_{CE(sat)}$			0.3	V	$I_F = 10\text{mA}$, $I_C = 50\mu\text{A}$
Rise Time	t_r		5		μs	$V_{CC} = 5.0\text{V}$, $I_C = 50\mu\text{A}$, $R_L = 100\Omega$
Fall Time	t_f		5		μs	$V_{CC} = 5.0\text{V}$, $I_C = 50\mu\text{A}$, $R_L = 100\Omega$

Note: 1. Test circuit for switching time



PS4014**Typical Characteristics** $T_A = +25^\circ\text{C}$ 