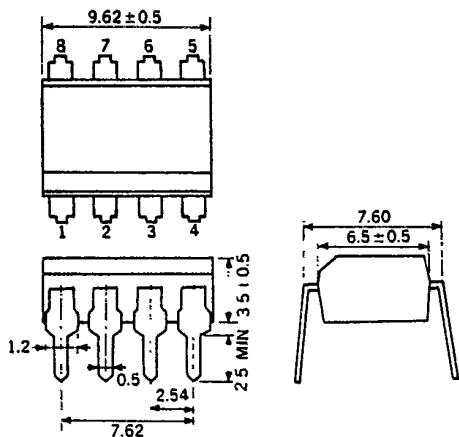


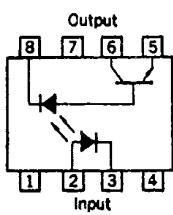
PHOTO COUPLER

PS2044**HIGH SPEED 8PIN PHOTO COUPLER****PACKAGE DIMENSIONS**
(Unit: mm)**FEATURES**

- High Speed Response 0.3 μ s TYP.
- High Isolation Voltage 2500 Vr.m.s.
- Compact, Dual In-Line Package

APPLICATIONS

1. Interface circuit for various instrumentations, control equipments.
2. Computer and peripheral manufactures.
3. TV sets.

PIN CONNECTION

PIN	Function
1.	NC
2.	Anode
3.	Cathode
4.	NC
5.	Emitter
6.	V _O
7.	NC
8.	V _{CC}

ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

Diode

Forward Current	I _F	25	mA
Reverse Voltage	V _R	5	V
Power Dissipation	P _D	45	mW

Detector

Supply Voltage	V _{CC}	-0.5 to 15	V
Output Voltage	V _O	-0.5 to 15	V
Output Current	I _O	8	mA
Power Dissipation	P _C	100	mW

Isolation Voltage*

Isolation Voltage*	BV	2500	V _{r.m.s.}
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Storage Temperature

Storage Temperature	T _{stg}	-55 to +125	°C
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Operating Temperature

Operating Temperature	T _{opt}	-55 to +100	°C
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Lead Temperature (10 s)

Lead Temperature (10 s)	260	°C
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* Condition

AC Voltage for 1 minute at T_a = 25 °C, RH = 60 %
between input (pin No. 1, 2, 3, 4 Common) and output (pin No. 5, 6, 7, 8 Common)

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

CHARACTERISTIC		SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Diode	Forward Voltage	V_F		1.7	2.2	V	$I_F = 16 \text{ mA}$
	Reverse Current	I_R		0.01	10	μA	$V_R = 5 \text{ V}$
	Forward Voltage Temperature Coefficient	$\frac{\Delta V_F}{\Delta T}$		-1.6		mV°C	$I_F = 16 \text{ mA}$
	Capacitance	C_t		60		pF	$V = 0, f = 1 \text{ MHz}$
Detector	High Level Output Current	$I_{OH}(1)$		3	500	nA	$I_F = 0 \text{ mA}, V_{CC} = V_O = 5.5 \text{ V}$
	High Level Output Current	$I_{OH}(2)$			100	μA	$I_F = 0 \text{ mA}, V_{CC} = V_O = 15 \text{ V}$
Coupled	Current Transfer Ratio	CTR *	15	22		%	$I_F = 16 \text{ mA}, V_{CC} = 4.5 \text{ V}, V_O = 0.4 \text{ V}$
	Low Level Output Voltage	V_{OL}		0.1	0.4	V	$I_F = 16 \text{ mA}, V_{CC} = 4.5 \text{ V}, I_O = 2.4 \text{ mA}$
	Low Level Supply Current	I_{CCL}		50		μA	$I_F = 16 \text{ mA}, V_O = \text{Open}, V_{CC} = 15 \text{ V}$
	High Level Supply Current	I_{CCH}		0.01	1	μA	$I_F = 0 \text{ mA}, V_O = \text{Open}, V_{CC} = 15 \text{ V}$
	Isolation Resistance	R_{1-2}	10^{11}			Ω	$V_{\text{in-out}} = 1 \text{ kV}_{\text{DC}}$
	Isolation Capacitance	C_{1-2}		0.7		pF	$V = 0, f = 1 \text{ MHz}$
	Propagation Delay Time to Low Output Level	t_{PHL}^{**}		0.3	0.8	μs	$I_F = 16 \text{ mA}, V_{CC} = 5 \text{ V}, R_L = 1.9 \text{ k}\Omega$
	Propagation Delay Time to High Output Level	t_{PLH}^{**}		(K/L/R) 0.3/1.0/0.8	(K/L/R) 0.8/1.5/1.25	μs	$I_F = 16 \text{ mA}, V_{CC} = 5 \text{ V}, R_L = 1.9 \text{ k}\Omega$

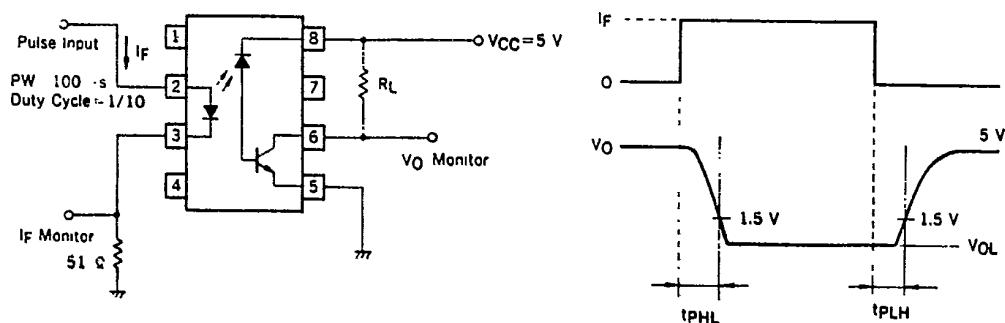
• CTR rank

K: 15 % ~

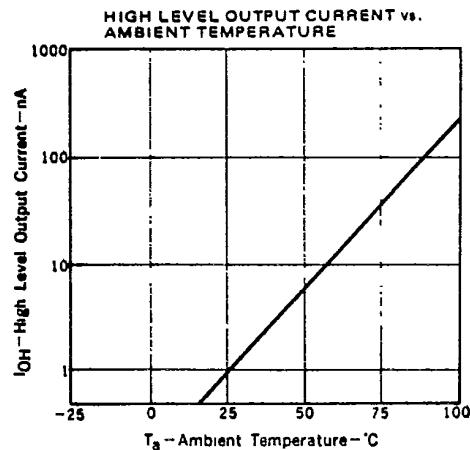
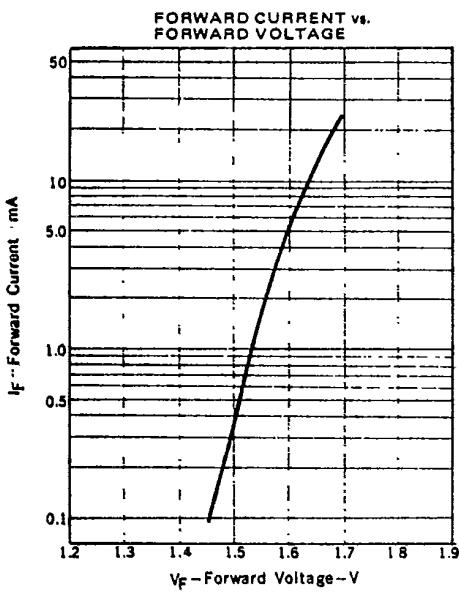
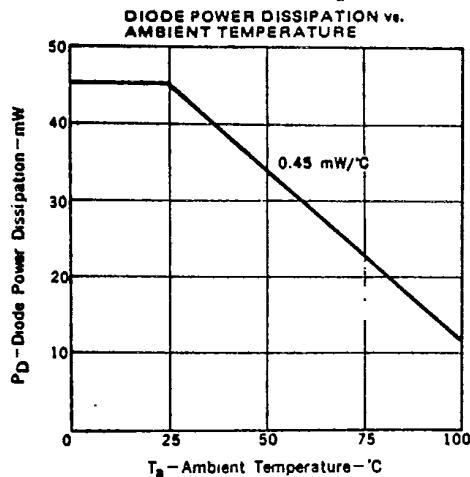
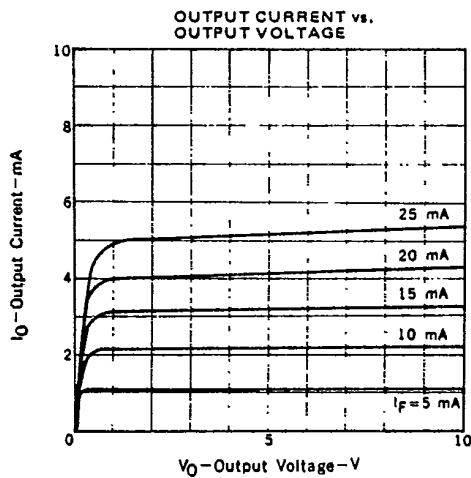
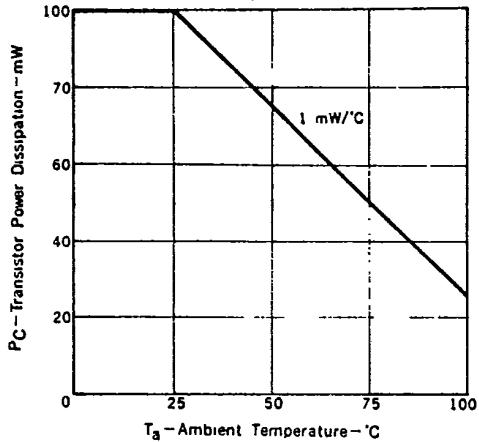
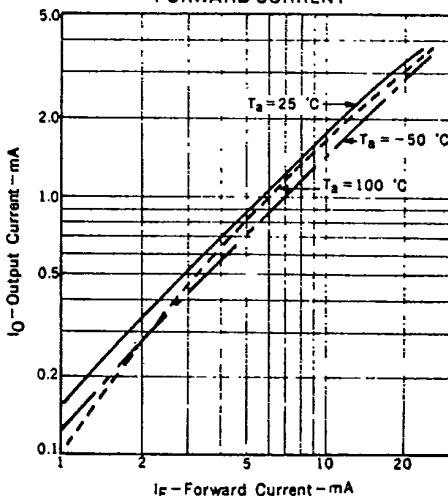
L: 25 % ~

R: 20 % ~

** Measuring circuit



T-41-83

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)**TRANSISTOR POWER DISSIPATION vs.
AMBIENT TEMPERATURE****OUTPUT CURRENT vs.
FORWARD CURRENT**

PS2044

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