

FEATURES

- **HIGH ISOLATION VOLTAGE**
BV: 5 k Vr.m.s. MIN
- **LARGE FORWARD INPUT CURRENT**
IF = 150 mA MAX
- **HIGH SPEED SWITCHING**
tr = 3 μs, tf = 5 μs TYP
- **HIGH COLLECTOR TO EMITTER VOLTAGE**
VCEO: 80 V MIN
- **GULL-WING & LEAD BENDING OPTIONS**
PS2521L1, PS2521L2
- **TAPING PRODUCTS**
PS2521L-1-E3, E4, PS2521L-2-E3, E4

DESCRIPTION

PS2521-1,-2 and -4 and PS2521L-1, -2 and -4 are optically coupled isolators containing a GaAs light emitting diode and an NPN silicon phototransistor. PS2521-1,-2 and -4 are in a plastic DIP (Dual In-Line Package) and PS2521L-1, -2 and -4 are lead bending type (Gull-Wing) for surface mount.

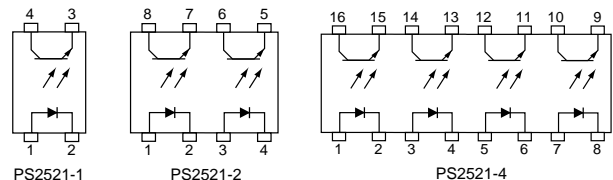
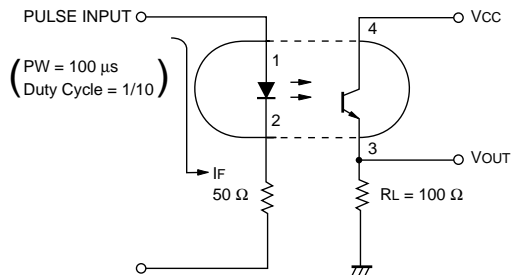
APPLICATIONS

- AC Line / Digital Logic
- Twisted Pair Line Receiver
- Telephone / Telegraph Line Receiver
- Sequence Controllers

ELECTRICAL CHARACTERISTICS (TA = 25°C)

PART NUMBER			PS2521-1, -2, -4, PS2521L-1, -2, -4		
SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
Diode	VF	Forward Voltage, IF = 100 mA	V	1.3	1.7
	IR	Reverse Current, VR = 5V	μA		5
	C	Junction Capacitance, V = 0, f = 1.0 MHz	pF	70	
Transistor	ICEO	Collector to Emitter Dark Current, Vce = 80 V, IF = 0	nA		100
	BVCEO	Collector to Emitter Breakdown Voltage, IC = 1 mA, IB = 0	V	80	
	BVECO	Emitter to Collector Breakdown Voltage, IE = 100 μA, IB = 0	V	6	
Coupled	CTR	Current Transfer Ratio, IF = 100 mA, VCE = 3 V	%	20	80
	VCE (sat)	Collector Saturation Voltage, IF = 100 mA, IC = 4 mA	V		0.3
	R1-2	Isolation Resistance, Vin-out = 1.0 kV	Ω	10 ¹¹	
	C1-2	Isolation Capacitance, V = 0, f = 1.0 MHz	pF		0.6
	tr	Rise Time ² , VCC = 10 V, IC = 2 mA	μs		3
tf	Fall Time ² , VCC = 10 V, IC = 2 mA	μs		5	

2. Test Circuit for Switching Time

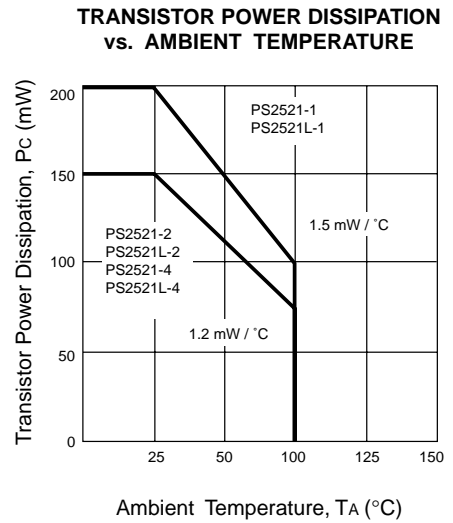
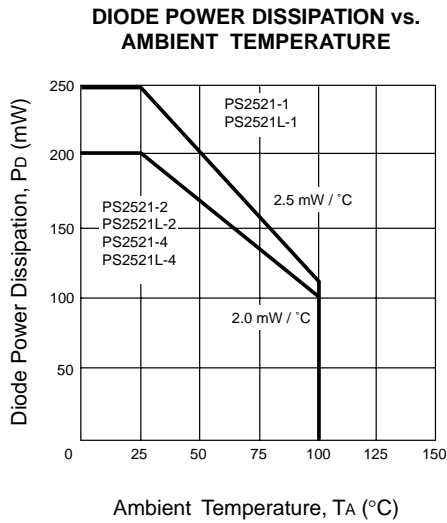


ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS	
			PS2521-1 PS2521L-1	PS2521-2,4 PS2521L-2,4
Diode				
V _R	Reverse Voltage	V	6	6
I _F	Forward Current (DC)	mA	150	150
P _D	Power Dissipation	mW	250	200
I _F (PEAK)	Peak Forward Current (P _W = 100 μs, Duty Cycle 1%)	A	1	1
Transistor				
V _{CEO}	Collector to Emitter Voltage	V	80	80
V _{ECO}	Emitter to Collector Voltage	V	6	6
I _C	Collector Current	mA	50	50
P _C	Power Dissipation	mW	150	120
Coupled				
BV	Isolation Voltage ¹	V _{r.m.s.}	5000	5000
T _{STG}	Storage Temperature	°C	-55 to +150	-55 to +150
T _{OP}	Operating Temperature	°C	-55 to +100	-55 to +100

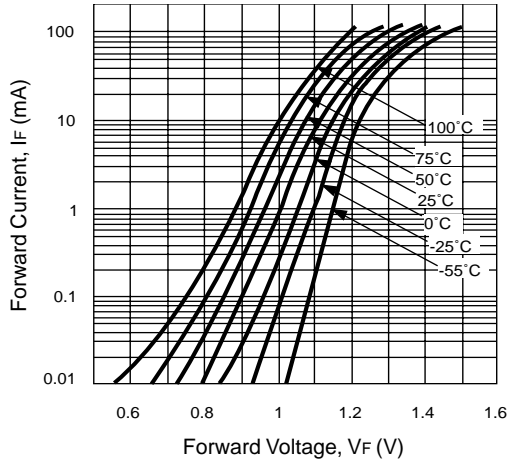
Note:
1. AC voltage for 1 minute at T_A = 25 °C, RH = 60 % between input and output.

TYPICAL PERFORMANCE CURVES (T_A = 25°C)

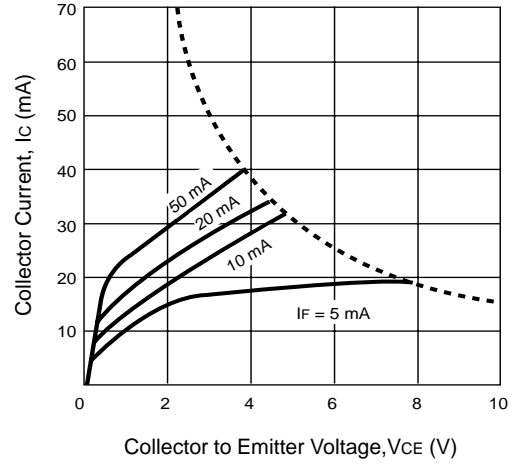


TYPICAL PERFORMANCE CURVES (T_A = 25°C)

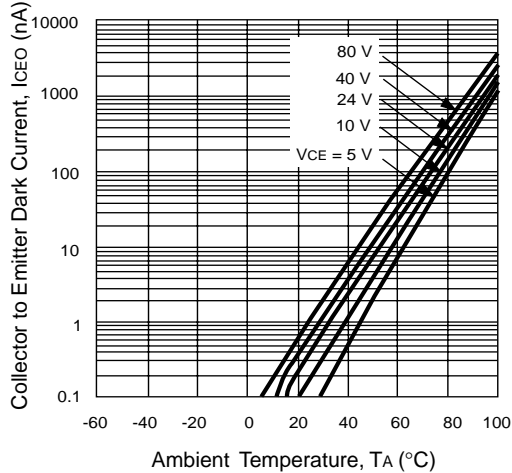
FORWARD CURRENT vs. FORWARD VOLTAGE



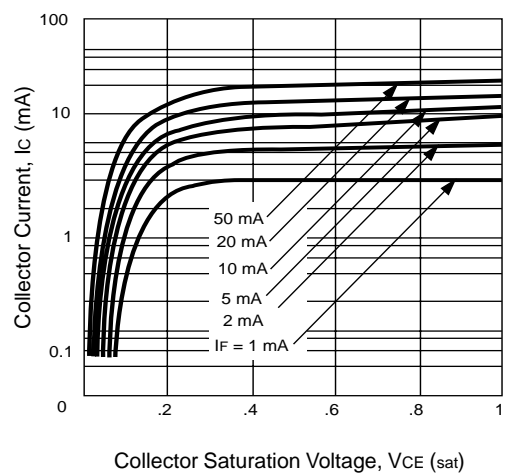
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



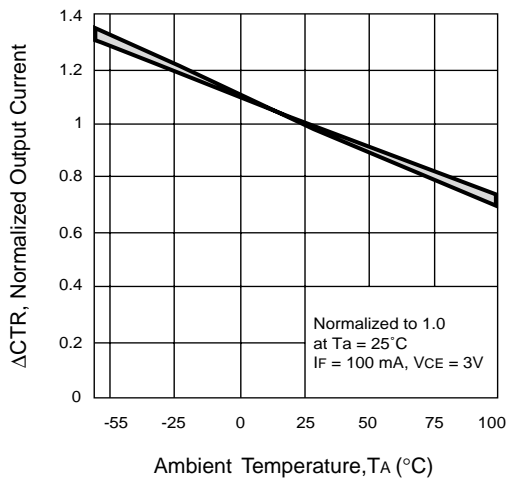
COLLECTOR TO EMITTER DARK CURRENT vs. AMBIENT TEMPERATURE



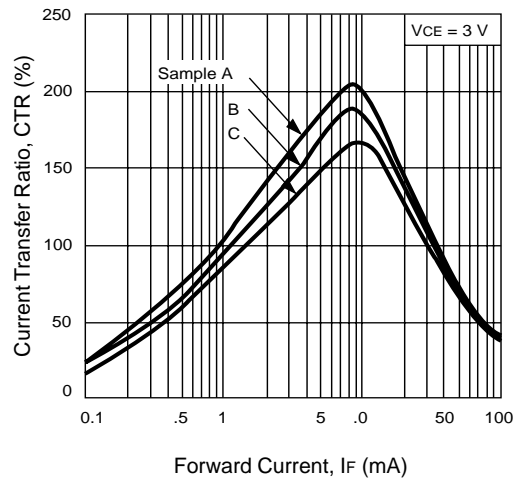
COLLECTOR CURRENT vs. COLLECTOR SATURATION VOLTAGE



NORMALIZED OUTPUT CURRENT vs. AMBIENT TEMPERATURE

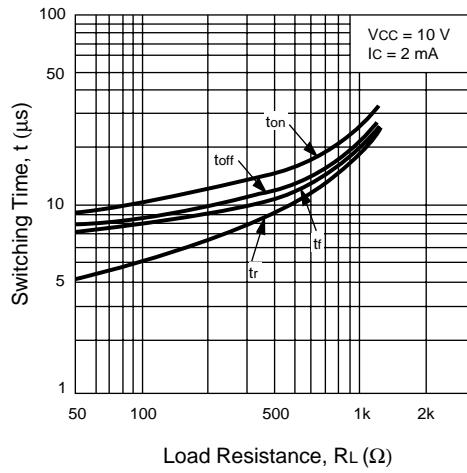


CURRENT TRANSFER RATIO (CTR) vs. FORWARD CURRENT

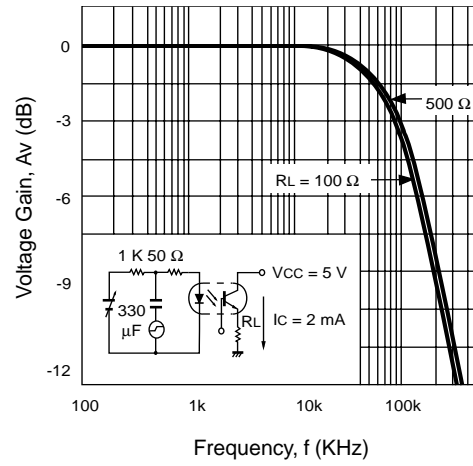


TYPICAL PERFORMANCE CURVES ($T_A = 25^\circ\text{C}$)

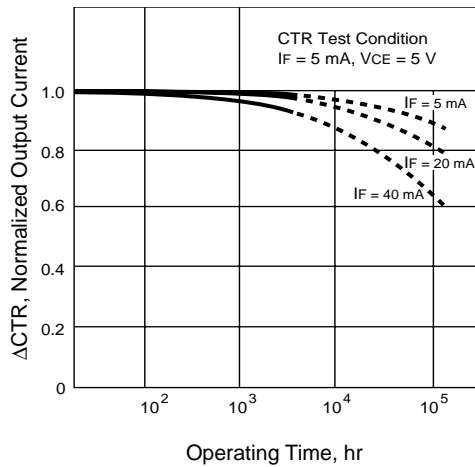
SWITCHING TIME vs. LOAD RESISTANCE



FREQUENCY RESPONSE

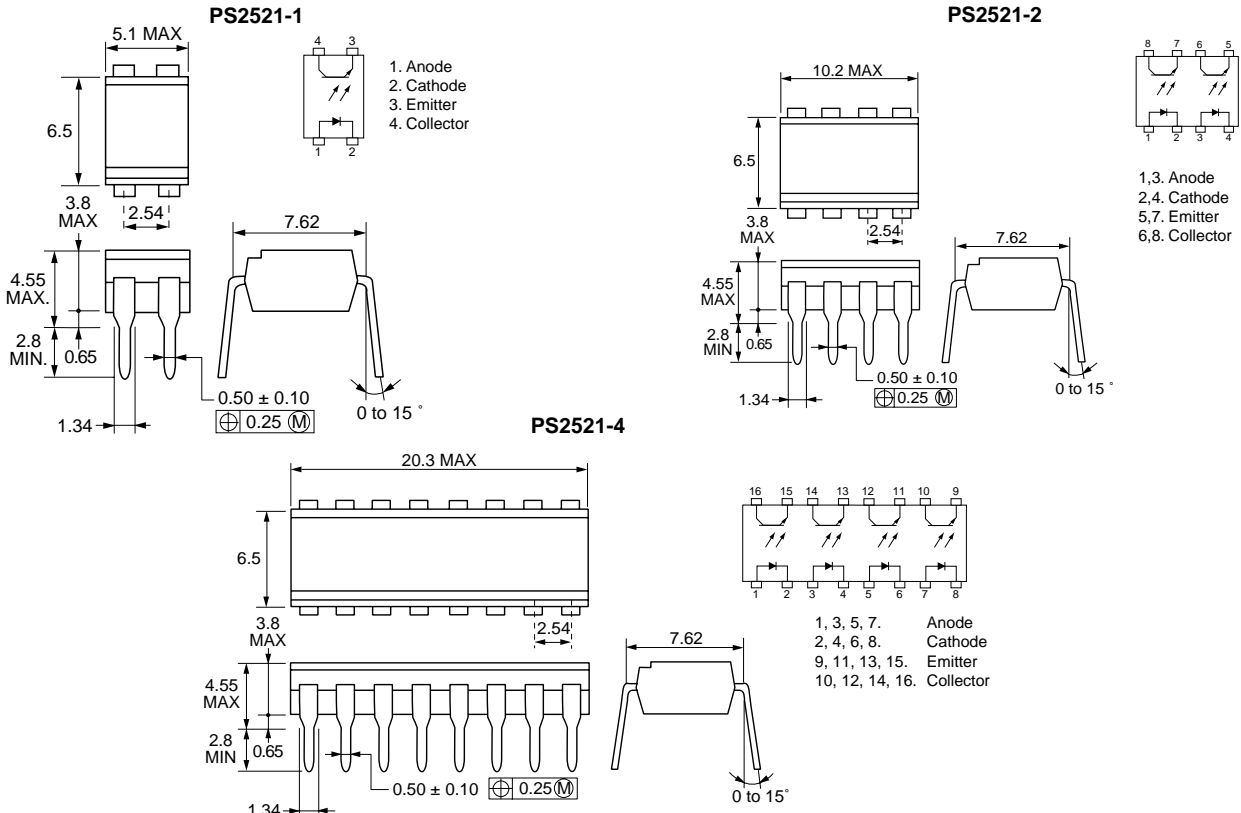


CTR DEGRADATION

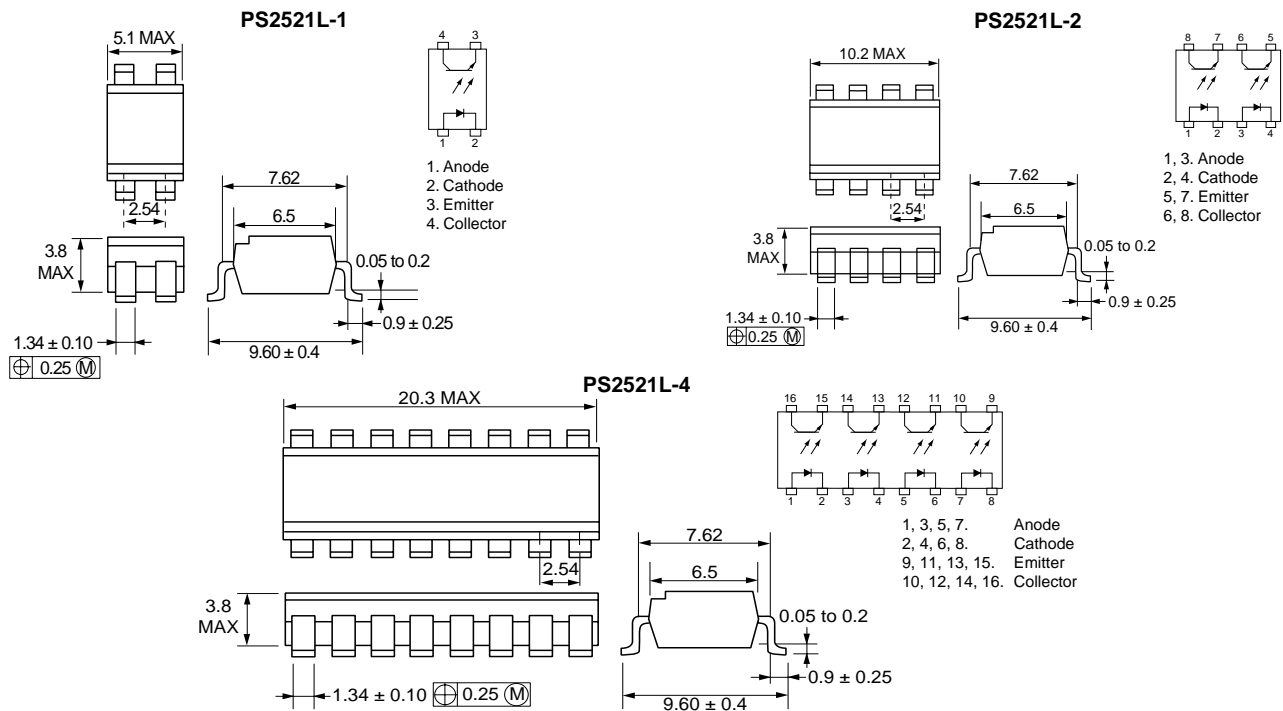


PS2521-1, -2, -4, PS2521L-1, -2, -4

PACKAGE DIMENSIONS (Units in mm) **DIP (Dual In-Line Package)**



PACKAGE DIMENSIONS (Units in mm) **Lead Bending type (Gull-wing)**



Life Support Applications

These NEC products are not intended for use in life support devices, appliances, or systems where the malfunction of these products can reasonably be expected to result in personal injury. The customers of CEL using or selling these products for use in such applications do so at their own risk and agree to fully indemnify CEL for all damages resulting from such improper use or sale.

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CEL CALIFORNIA EASTERN LABORATORIES • Headquarters • 4590 Patrick Henry Drive • Santa Clara, CA 95054-1817 • (408) 988-3500 • Telex 34-6393 • FAX (408) 988-0279
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Internet: <http://WWW.CEL.COM>

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