

NEC

HIGH ISOLATION VOLTAGE HIGH COLLECTOR TO EMITTER VOLTAGE SOP PHOTOCOUPLER

PS2732-1, -2, -4
PS2733-1, -2, -4

FEATURES

- **HIGH ISOLATION VOLTAGE**
BV: 2.5 k Vr.m.s. MIN
- **HIGH COLLECTOR TO EMITTER VOLTAGE**
V_{CEO}: 300 V MIN: PS2732-1, -2, -4
V_{CEO}: 350 V MIN: PS2733-1, -2, -4
- **SOP (SMALL OUT-LINE PACKAGE)**
- **ULTRA HIGH CURRENT TRANSFER RATIO**
CTR: 4000% TYP
- **TAPING PRODUCT NUMBER (Only -1 Type)**
PS2732-1-E3, F3
PS2733-1-E3, F3

DESCRIPTION

The PS2732 and PS2733 are optically coupled isolators containing a GaAs light emitting diode and an NPN silicon Darlington-connected phototransistor. Each is mounted in a plastic SOP (Small Out-line Package) for high density applications.

APPLICATIONS

Interface circuit for various instrumentations and control equipment.

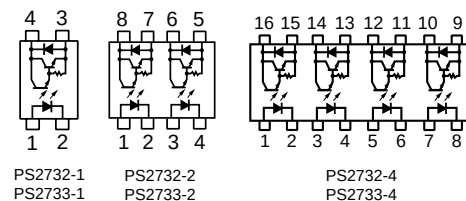
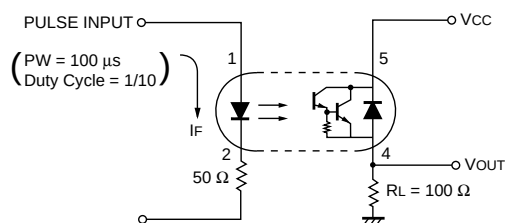
- **REPLACEMENT FOR RELAY IN PULSE-DIAL CIRCUIT**
- **HIGH CTR CIRCUIT APPLICATIONS**

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

PART NUMBER				PS2732-1, -2, -4, PS2733-1, -2, -4		
SYMBOLS		PARAMETERS	UNITS	MIN	TYP	MAX
Diode	V _F	Forward Voltage, I _F = 10 mA	V		1.15	1.4
	I _R	Reverse Current, V _R = 5 V	μA			5
	C _t	Junction Capacitance, V = 0, f = 1.0 MHz	pF		30	
Transistor	I _{CEO}	Collector to Emitter Dark Current, V _{CE} = 300 V, I _F = 0	nA			400
Coupled	CTR	Current Transfer Ratio, I _F = 1 mA, V _{CE} = 2 V	%	1500	4000	
	V _{CE(sat)}	Collector Saturation Voltage, I _F = 1 mA, I _C = 2 mA	V			1.0
	R ₁₋₂	Isolation Resistance, V _{IN-OUT} = 1.0 k V _{DC}	Ω	10 ¹¹		
	C ₁₋₂	Isolation Capacitance, V = 0, f = 1.0 MHz	pF		0.4	
	t _r	Rise Time ¹ , V _{CC} = 5 V, I _C = 10 mA, R _L = 100 Ω	μs		100	
	t _f	Fall Time ¹ , V _{CC} = 5 V, I _C = 10 mA, R _L = 100 Ω	μs		100	

Note:

1. Test Circuit for Switching Time

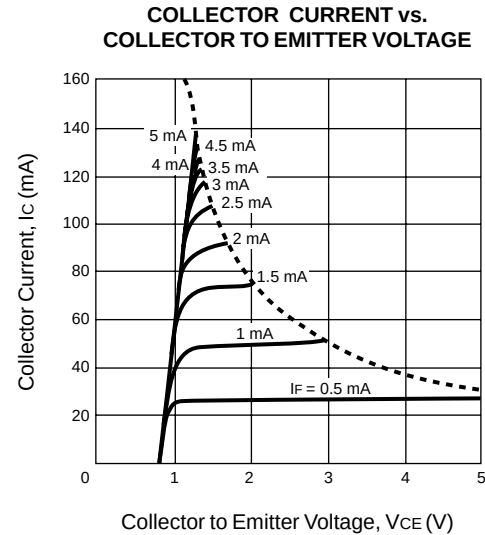
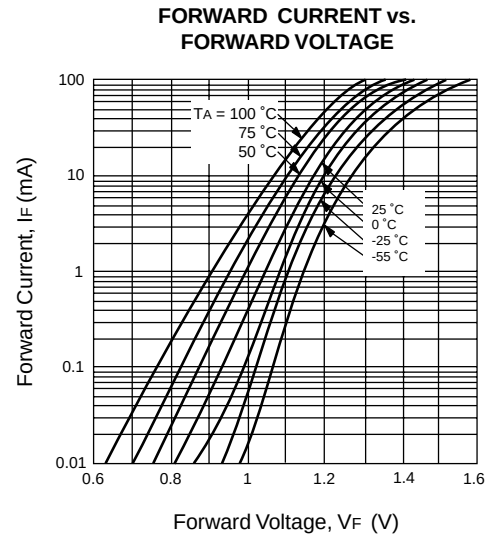
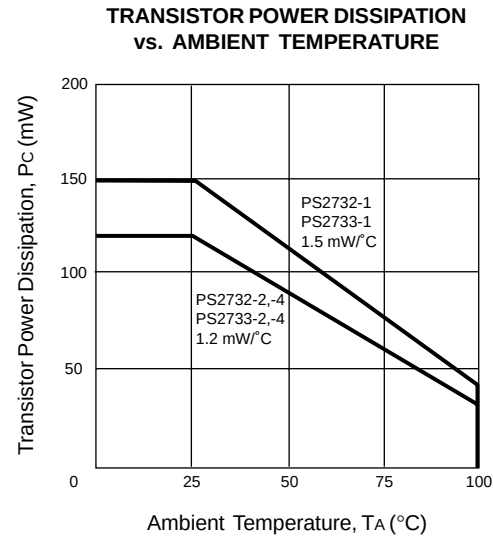
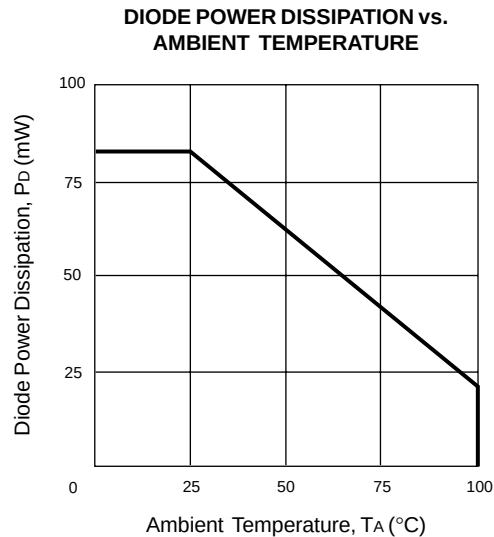


ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

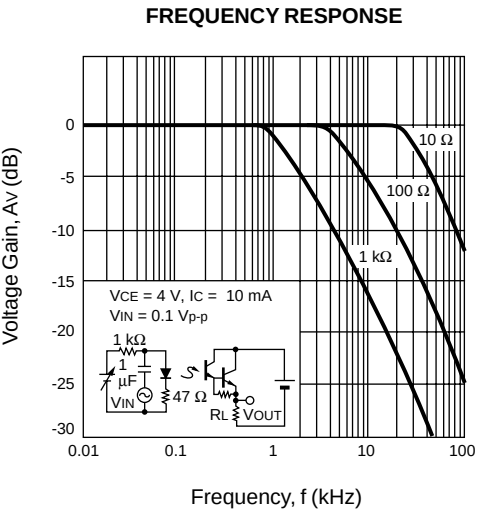
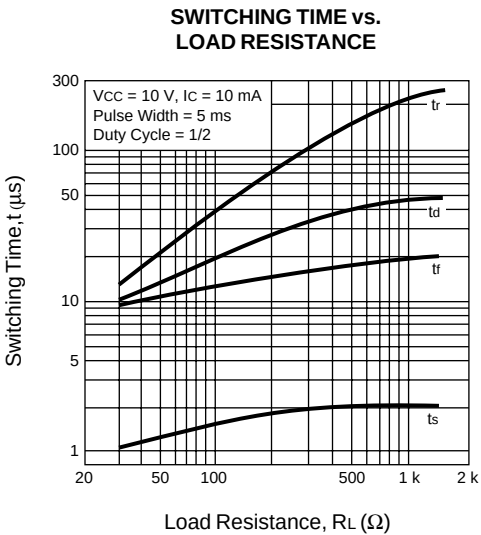
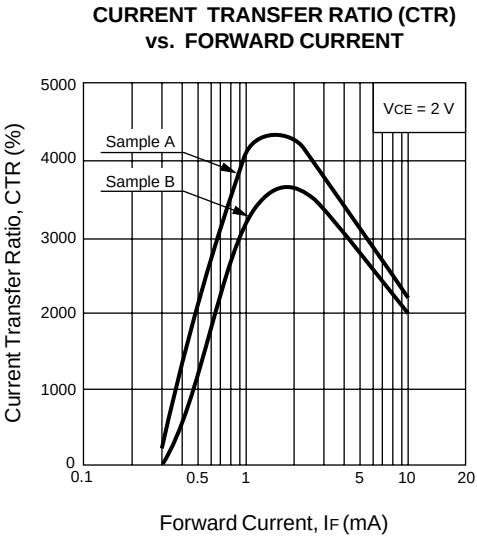
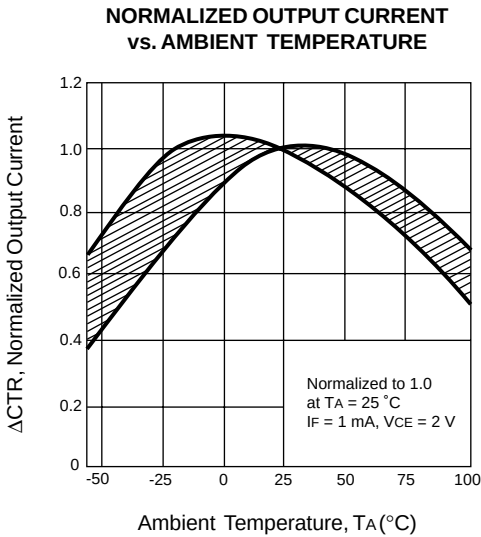
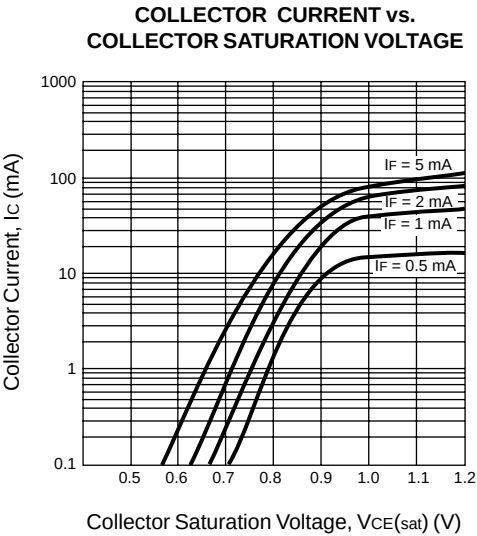
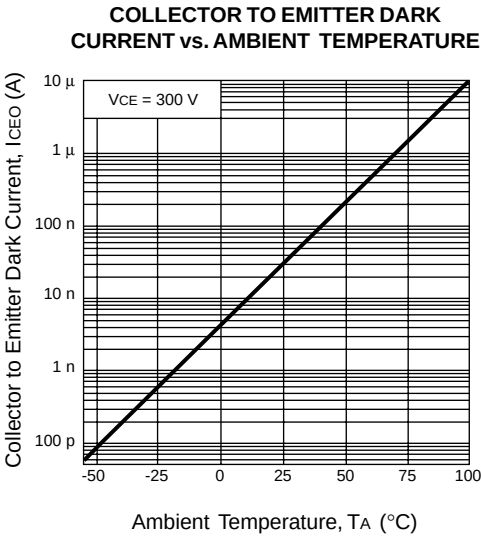
SYMBOLS	PARAMETERS	UNITS	RATINGS	
			PS2732-1 PS2733-1	PS2732-2, -4 PS2733-2, -4
Diode				
V _R	Reverse Voltage	V	6	6
I _F	Forward Current	mA	50	50
P _D	Power Dissipation	mW/Ch	80	80
I _F (PEAK)	Peak Forward Current (P _W = 100 μs, Duty Cycle 1%)	A	1	1
Transistor				
V _{CEO}	Collector to Emitter Voltage (I _C = I _{MA} , I _B = 0)	V	300/350	300/350
V _{EBO}	Emitter to Base Breakdown Volt (I _E = 100μA, I _B = 0)	V	6	6
I _C	Collector Current	mA/Ch	150	150
P _C	Power Dissipation	mW/Ch	150	120
Coupled				
BV	Isolation Voltage ²	V _{r.m.s.}	2500	
T _{OP}	Operating Temperature	°C	-55 to +100	
T _{STG}	Storage Temperature	°C	-55 to +150	

- Notes:
1. Operation in excess of any one of these parameters may result in permanent damage.
 2. AC voltage for 1 minute at T_A = 25 °C, RH = 60 % between input and output.

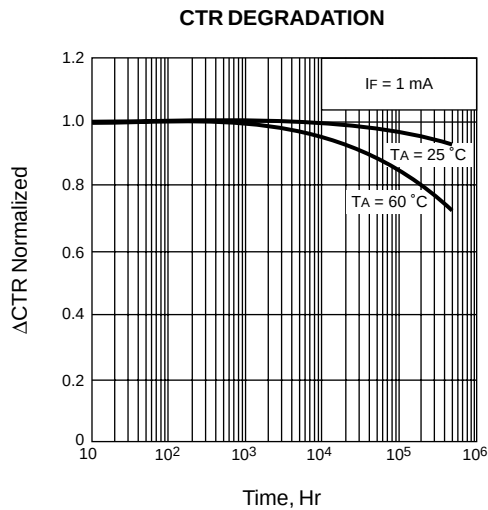
TYPICAL PERFORMANCE CURVES (T_A = 25 °C)



TYPICAL PERFORMANCE CURVES (TA = 25 °C)



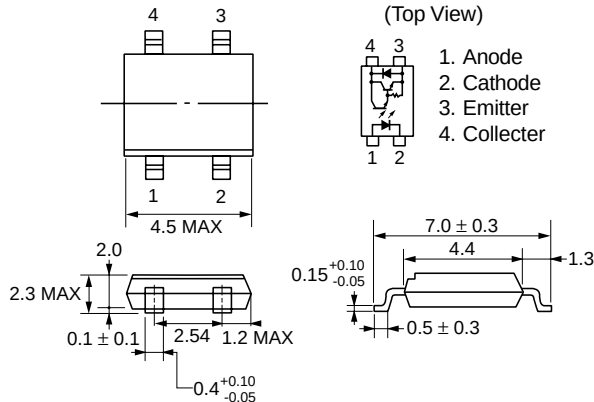
TYPICAL PERFORMANCE CURVES (T_A = 25 °C)



OUTLINE DIMENSIONS (Units in mm)

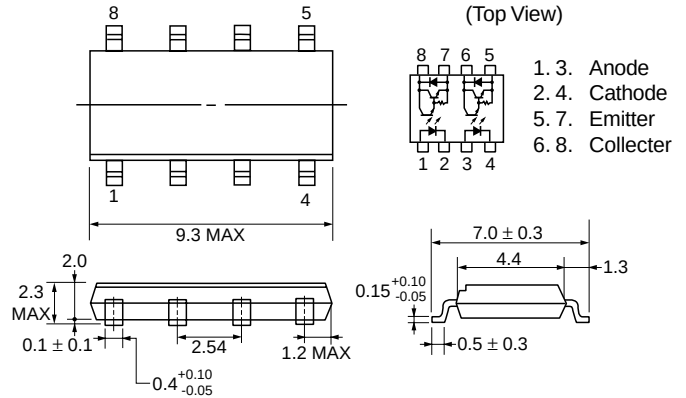
PS2732-1, PS2733-1

PIN CONNECTION (Top View)



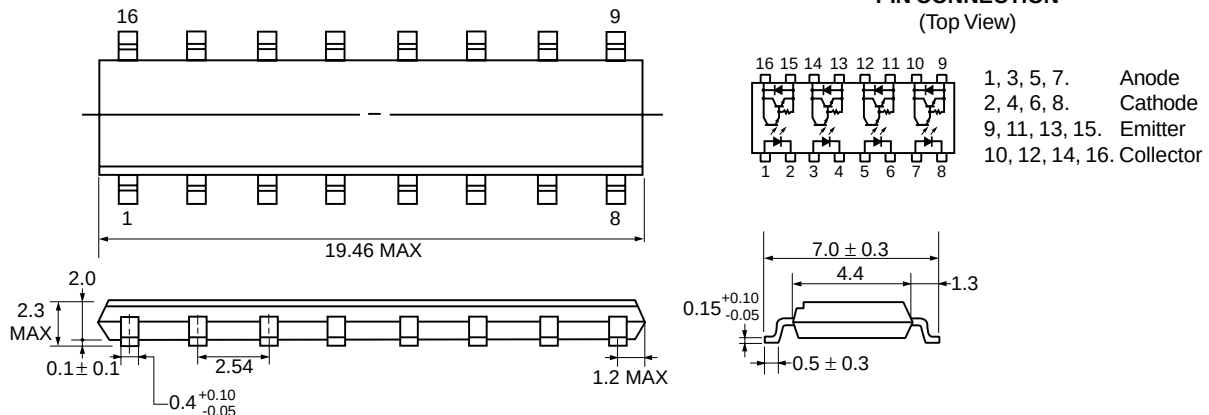
PS2732-2, PS2733-2

PIN CONNECTION (Top View)



PS2732-4, PS2733-4

PIN CONNECTION (Top View)



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