

**WORLD'S SMALLEST CLASS,
FOUR CHANNEL, 12 PIN
ULTRA SMALL SOP OPTOCOUPLER**

PS2845-4A

FEATURES

- **COMMON LEAD:**
anode, cathode, collector common
- **HIGH CURRENT TRANSFER RATIO:**
CTR = 200 % TYP @ $I_F = 1 \text{ mA}$
- **ULTRA SMALL THIN PACKAGE:**
12-pin ultra small SOP, Pin Pitch = 0.8 mm
- **HIGH ISOLATION VOLTAGE:**
 $BV = 2000 \text{ Vr.m.s.}$
- **AVAILABLE IN TAPE AND REEL**

DESCRIPTION

The PS2845-4A is an optically coupled isolator containing a GaAs light emitting diode and an NPN silicon phototransistor. This product includes four channels in a single package for high-density mounting applications.

The PS2845-4A is the world's smallest class of optocouplers and realizes about 50% reduction in mounting area compared with the PS280X and PS281X series.

APPLICATIONS

- **PROGRAMMABLE LOGIC CONTROLLERS (PLCs)**

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

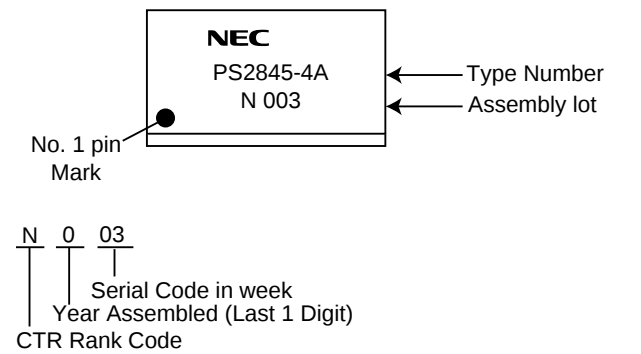
PART NUMBER				PS2845-4A			
SYMBOLS		PARAMETERS		UNITS	MIN	TYP	MAX
Diode	V _F	Forward Voltage, I _F = ±1 mA		V	0.9	1.1	1.2
	C _t	Terminal Capacitance, V = 0 V, f = 1 MHz		pF		15	
Transistor	I _{CEO}	Collector to Emitter Current, I _F = 0 mA, V _{CE} = 70 V		nA			100
Coupled	CTR	Current Transfer Ratio (I _c /I _F)		%			
		I _F = ±1 mA, V _{CE} = 0.4 V			100		
		I _F = ±1 mA, V _{CE} = 5 V			150		600
	V _{CE (sat)}	Collector Saturation Voltage, I _F = ±1 mA, I _c = 0.2 mA		V		0.13	0.3
	R _{i-o}	Isolation Resistance, V _{i-o} = 1.0 KV _{DC}		Ω	10 ¹¹		
	C _{i-o}	Isolation Capacitance, V = 0 V, f = 1 MHz		pF		0.4	
	t _{ON}	Turn-on Time	V _{CC} = 5 V, I _F = ±1 mA, R _L = 5 kΩ	μs		20	
	t _{OFF}	Turn-off Time				110	

ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

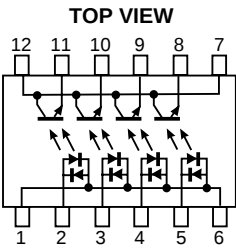
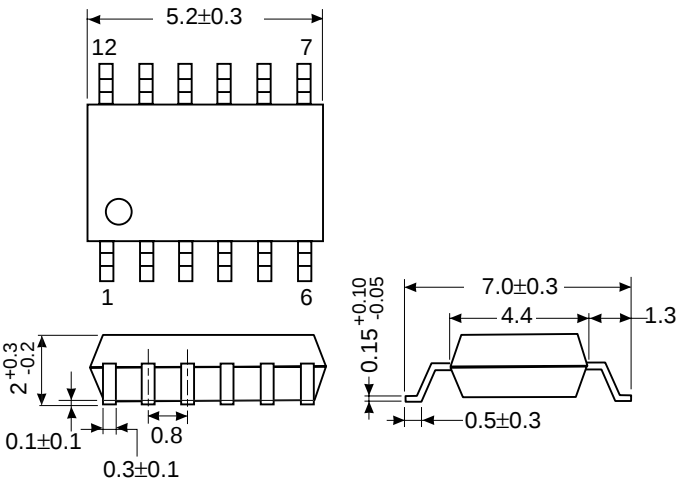
SYMBOLS	PARAMETERS	UNITS	RATINGS
Diode			
I _F	Forward Current (DC)	mA	±50
ΔP _D /°C	Power Dissipation Derating	mW/°C	0.3
P _D	Power Dissipation	mW/ch	30
I _{FP}	Peak Forward Current ²	A	±0.5
Transistor			
V _{CEO}	Collector to Emitter Voltage	V	70
V _{ECO}	Emitter to Collector Voltage	V	5
I _C	Collector Current	mA/ch	20
ΔP _C /°C	Power Dissipation Derating	mW/°C	0.4
P _D	Power Dissipation	mW/ch	40
Coupled			
BV	Isolation Voltage ³	Vr.m.s.	2000
T _A	Operating Ambient Temp.	°C	-55 to +100
T _{STG}	Storage Temperature	°C	-55 to +125

- Notes:
- 1. Operation in excess of any one of these parameters may result in permanent damage.
 - 2. PW = 100 μs, Duty Cycle 1%.
 - 3. AC voltage for 1 minute at T_A = 25 °C, RH = 60 % between input and output.

MARKING EXAMPLE



OUTLINE DIMENSIONS (Units in mm)



PIN CONNECTIONS

Channel	Anode, Cathode	Cathode, Anode	Emitter	Collector
1 ch	1, 6 common	2	11	7, 12 common
2 ch	1, 6 common	3	10	7, 12 common
3 ch	1, 6 common	4	9	7, 12 common
4 ch	1, 6 common	5	8	7, 12 common