

NEC

HIGH ISOLATION VOLTAGE HIGH COLLECTOR TO EMITTER VOLTAGE SOP MULTI OPTOCOUPLER

PS2832-1,-4
PS2833-1,-4

FEATURES

- **HIGH COLLECTOR TO EMITTER VOLTAGE**
 $V_{CE0} = 300\text{ V}$: PS2832-1,-4
 $V_{CE0} = 350\text{ V}$: PS2833-1,-4
- **SMALL THIN PACKAGE**
4, 16-pin SOP, pin pitch 1.27 mm
- **HIGH ISOLATION VOLTAGE**
 $BV = 2500\text{ Vr.m.s.}$
- **HIGH CURRENT TRANSFER RATIO**
 $CTR = 2000\% \text{ TYP}$
- **TAPING PRODUCT NUMBER**
PS2832-1-F3, F4, PS2833-1-F3, F4
PS2832-4-F3, F4, PS2833-4-F3, F4

DESCRIPTION

PS2832-1,-4 and PS2833-1,-4 are optically coupled isolators containing a GaAs light emitting diode and an NPN silicon darlington-connected phototransistor. The package is an SSOP (Super Small Out-Line Package) type for high density mounting applications.

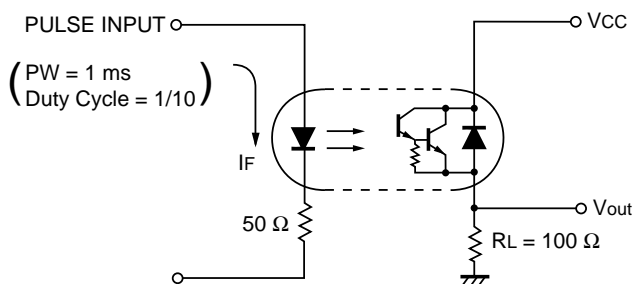
APPLICATIONS

- HYBRID IC
- TELEPHONE / TELEGRAPH RECEIVER
- FAX

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

		PART NUMBER	PS2832-1, -4, PS2833-1, -4			
	SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
Diode	V_F	Forward Voltage, $I_F = 10\text{ mA}$	V		1.2	1.4
	I_R	Reverse Current, $V_R = 5\text{ V}$	μA			5
	C	Terminal Capacitance, $V = 0, f = 1.0\text{ MHz}$	pF		15	
Tran-sistor	I_{CE0}	Collector to Emitter Current $I_F = 0\text{ mA}, V_{CE} = 300\text{ V}$	nA			400
Coupled	CTR	Current Transfer Ratio, (I_C/I_F) $I_F = 1\text{ mA}, V_{CE} = 2\text{ V}$	%	400	2000	4500
	$V_{CE(sat)}$	Collector Saturation Voltage, $I_F = 1\text{ mA}, I_C = 2\text{ mA}$	V			1.0
	Ri-o	Isolation Resistance, $V_{in-out} = 1.0\text{ kVDC}$	Ω	10^{11}		
	CI-o	Isolation Capacitance, $V = 0, f = 1.0\text{ MHz}$	pF		0.4	
	t_r	Rise Time ¹ , $V_{CC} = 5\text{ V}, I_C = 10\text{ mA}, R_L = 100\ \Omega$	μs		20	
t_f	Fall Time ¹ , $V_{CC} = 5\text{ V}, I_C = 10\text{ mA}, R_L = 100\ \Omega$	μs		5		

1. Test Circuit for Switching Time



PS2832-1, -4, PS2833-1, -4

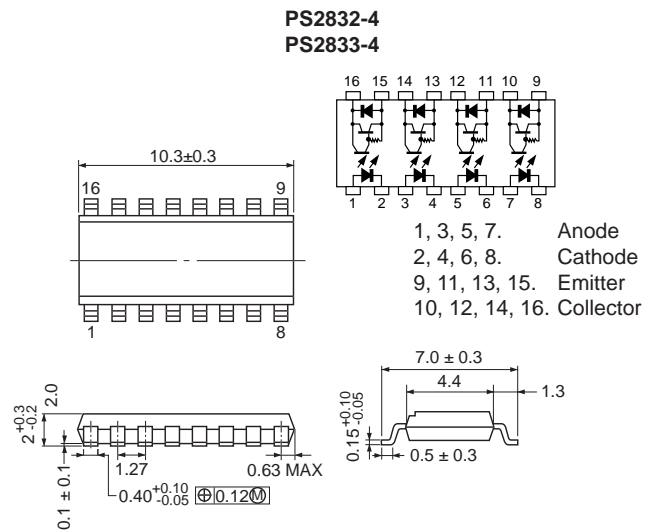
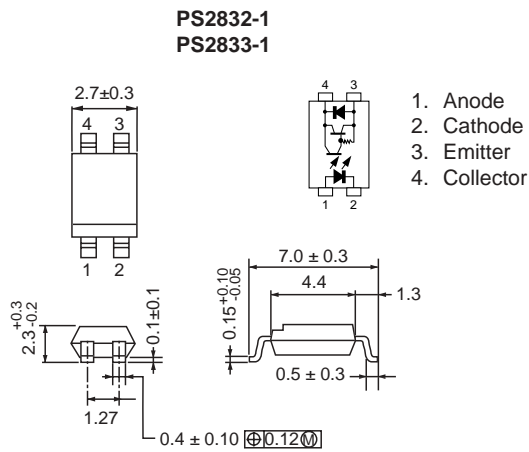
ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS			
			PS2832-1	PS2833-1	PS2832-4	PS2833-4
Diode						
I _F	Forward Current (DC)	mA	50			
V _R	Reverse Voltage	V	6			
ΔP _D /°C	Power Dissipation Derating	mW/°C	0.6		0.8	
P _D	Power Dissipation	mW/Ch	60		80	
I _{F(Peak)}	Peak Forward Current PW = 100 μs, Duty Cycle 1%	A	1			
Transistor						
V _{CEO}	Collector to Emitter Voltage	V	300	350	300	350
V _{ECO}	Emitter to Collector Voltage	V	0.3			
I _C	Collector Current	mA/Ch	60			
ΔP _C /°C	Power Dissipation Derating	mW/°C	1.2			
P _C	Power Dissipation	mW/Ch	120			
Coupled						
BV	Isolation Voltage ²	V _{r.m.s.}	2500			
T _A	Operating Ambient Temp.	°C	-55 to +100			
T _{STG}	Storage Temperature	°C	-55 to +150			

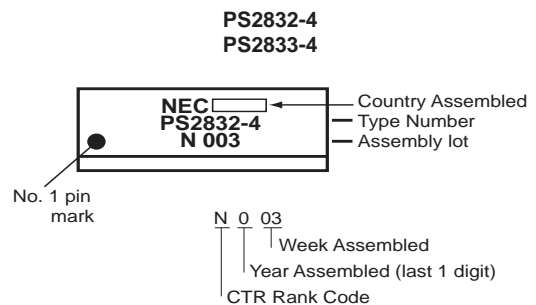
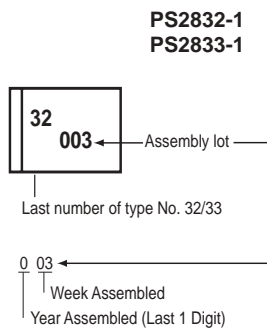
Notes:

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

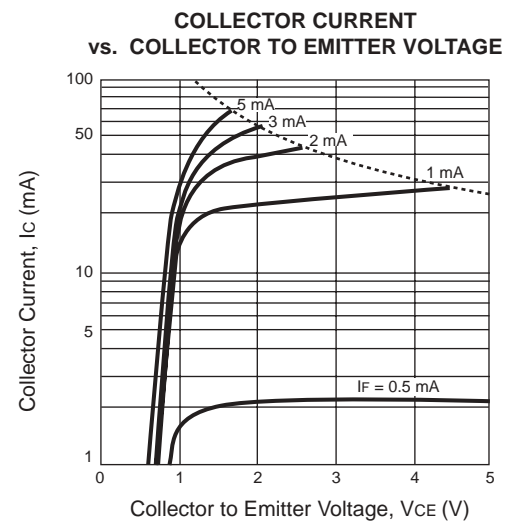
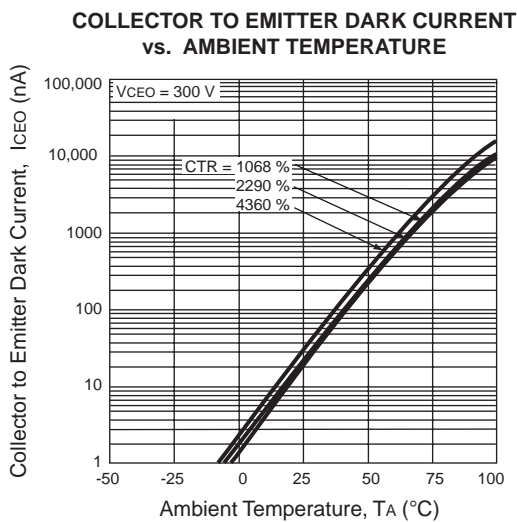
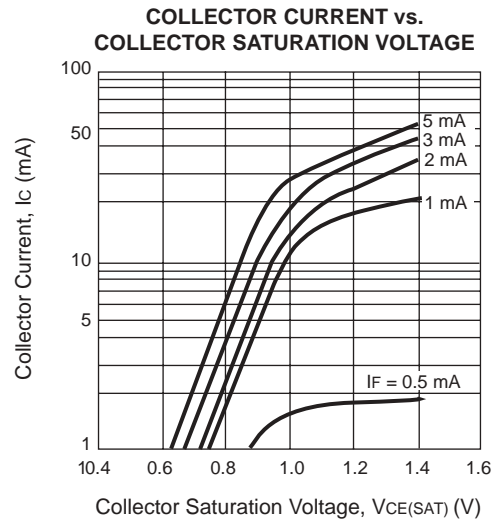
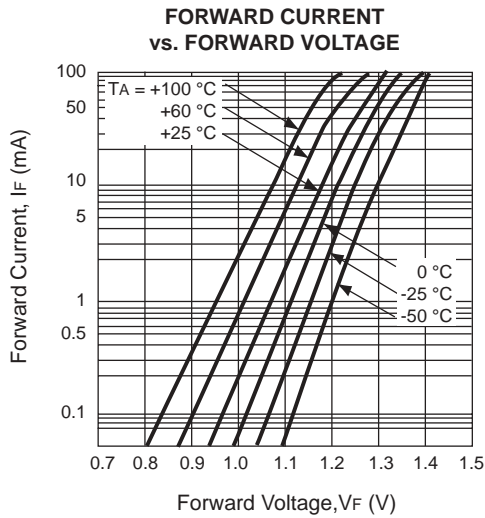
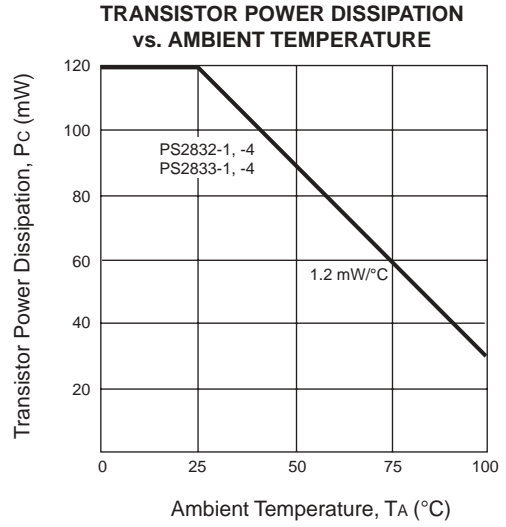
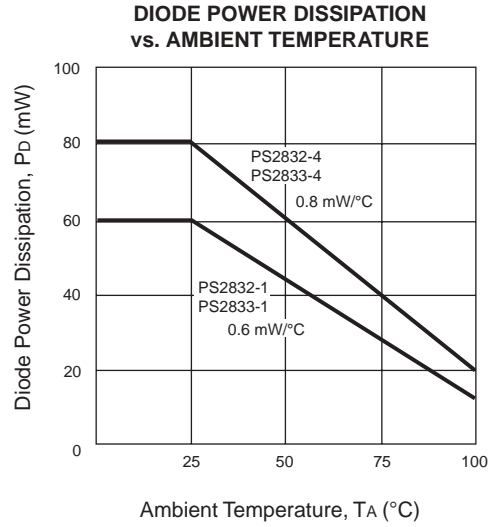
OUTLINE DIMENSIONS (Units in mm)



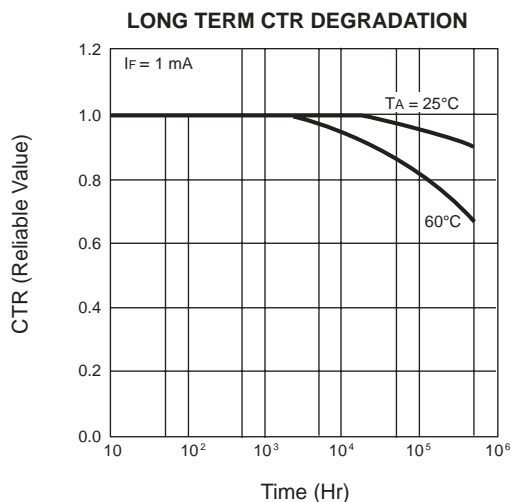
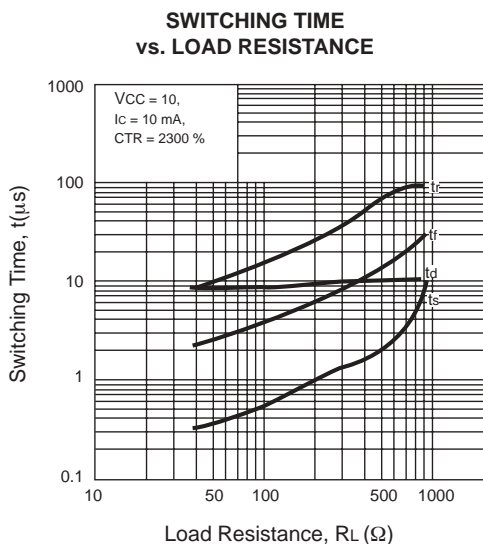
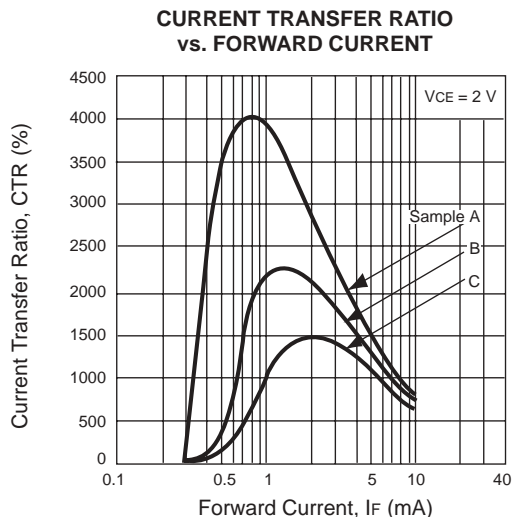
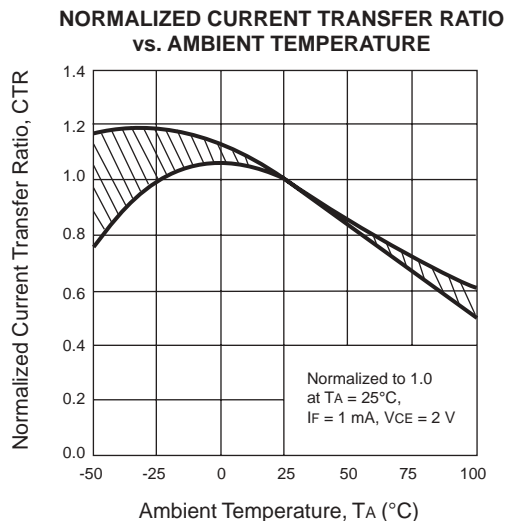
MARKING



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



TYPICAL PERFORMANCE CURVES (TA = 25°C unless otherwise specified)



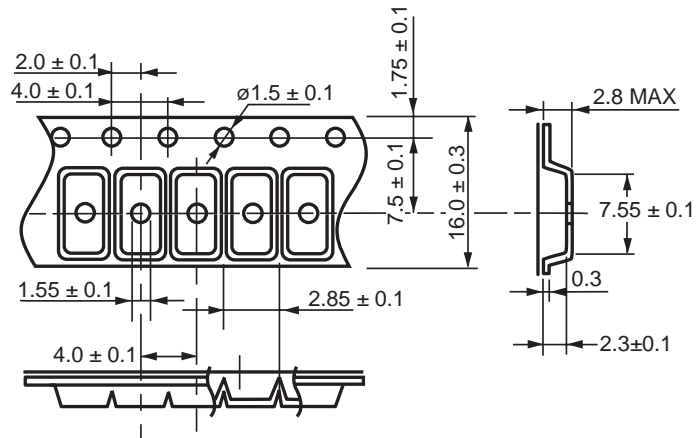
Remark: The graphs indicate nominal characteristics.

ORDERING INFORMATION

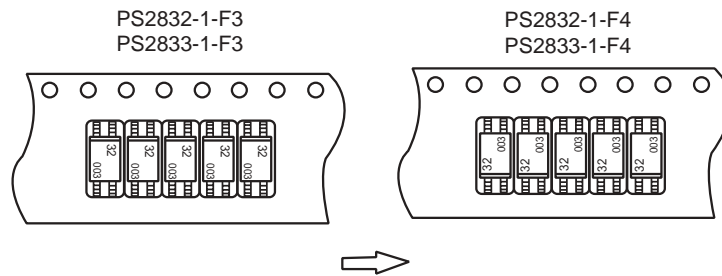
PART NUMBER	PACKAGE	PACKING STYLE	PART NUMBER	PACKAGE	PACKING STYLE
PS2832-1	4 pin SOP	50 pcs (Tape 50 pcs cut)	PS2833-1	4 pin SOP	50 pcs (Tape 50 pcs cut)
PS2832-1-F3		Embossed Tape 3500 pcs/reel	PS2833-1-F3		Embossed Tape 3500 pcs/reel
PS2832-1-F4			PS2833-1-F4		
PS2832-4	16 pin SOP	Magazine case 45 pcs	PS2833-4	16 pin SOP	Magazine case 45 pcs
PS2832-4-F3		Embossed Tape 2500 pcs/reel	PS2833-4-F3		Embossed Tape 2500 pcs/reel
PS2832-4-F4			PS2833-4-F4		
PS2832-1-V	4 pin SOP	50 pcs (Tape 50 pcs cut)	PS2833-1-V	4 pin SOP	50 pcs (Tape 50 pcs cut)
PS2832-1-V-F3		Embossed Tape 3500 pcs/reel	PS2833-1-V-F3		Embossed Tape 3500 pcs/reel
PS2832-1-V-F4			PS2833-1-V-F4		
PS2832-4-V	16 pin SOP	Magazine case 45 pcs	PS2833-4-V	16 pin SOP	Magazine case 45 pcs
PS2832-4-V-F3		Embossed Tape 2500 pcs/reel	PS2833-4-V-F3		Embossed Tape 2500 pcs/reel
PS2832-4-V-F4			PS2833-4-V-F4		

TAPING SPECIFICATIONS (Units in mm)

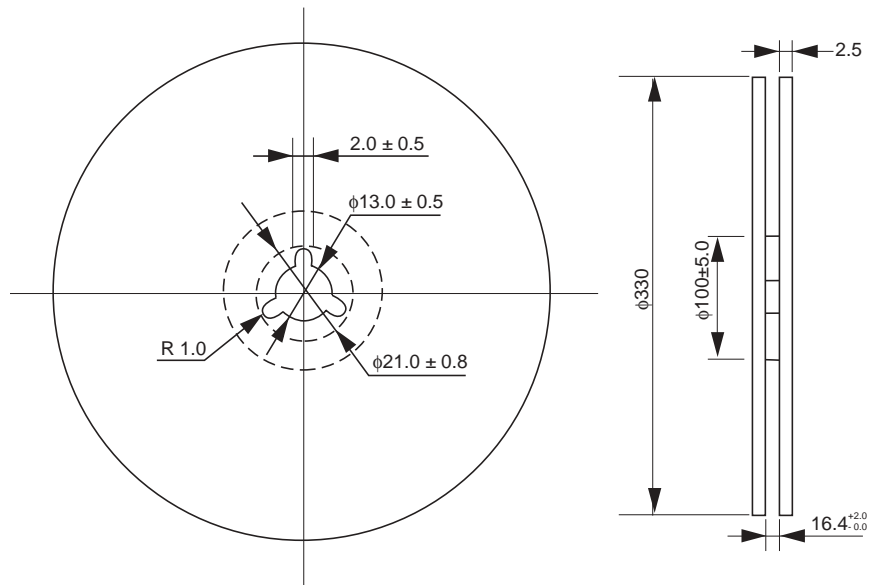
TAPE OUTLINE AND DIMENSIONS



TAPE DIRECTION



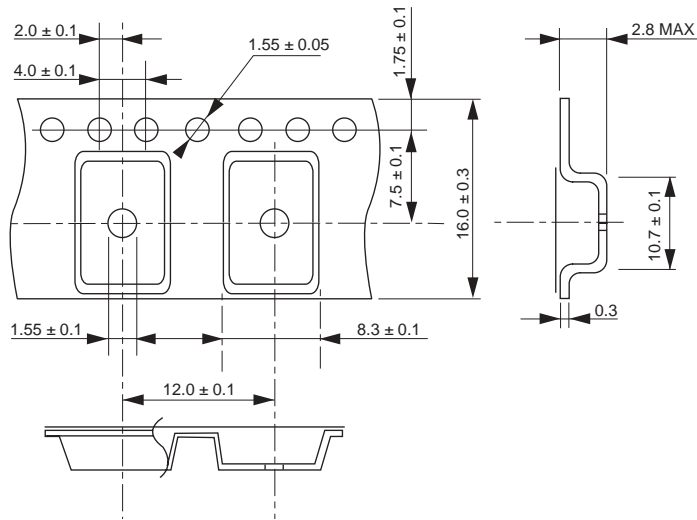
REEL OUTLINE DIMENSIONS



Packing: 3500 pcs/Reel

TAPING SPECIFICATIONS (Units in mm)

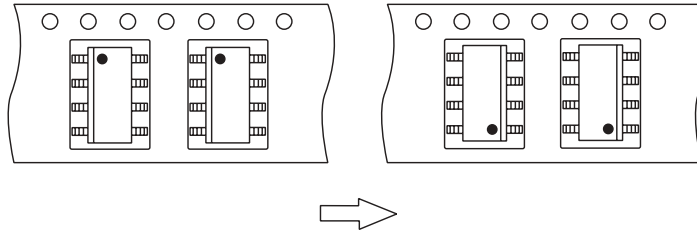
TAPE OUTLINE AND DIMENSIONS



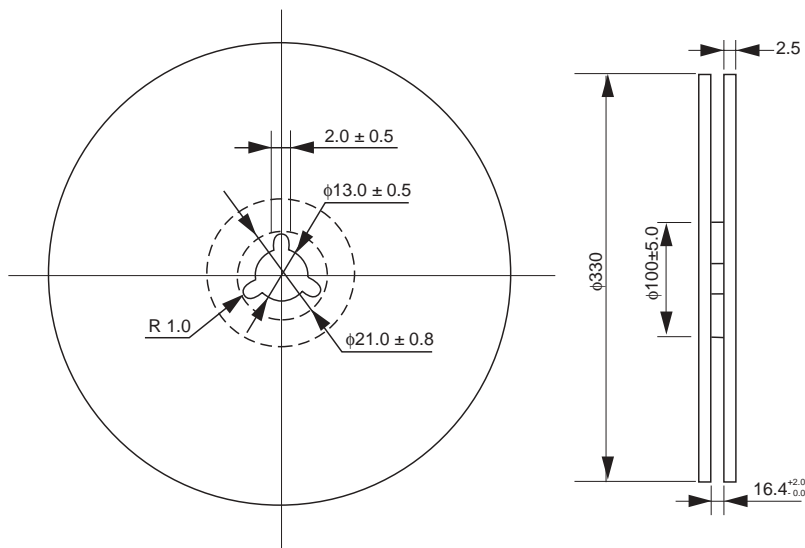
TAPE DIRECTION

PS2832-4-F3
PS2833-4-F3

PS2832-4-F4
PS2833-4-F4



REEL OUTLINE DIMENSIONS

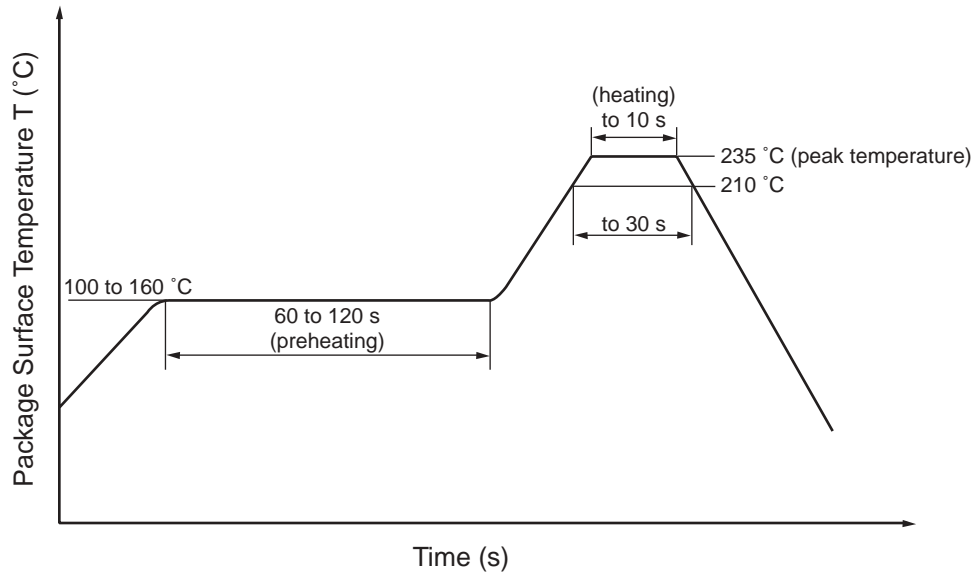


Packing: 2500 ppcs/reel

RECOMMENDED SOLDERING CONDITIONS

(1) Infrared reflow soldering

- Peak reflow temperature 235 °C (package surface temperature)
- Time of temperature higher than 210 °C 30 seconds or less
- Number of reflows Three
- Flux Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt % is recommended).



(2) Dip soldering

- Temperature 260 °C or below (molten solder temperature)
- Time 10 seconds or less
- Number of times One
- Flux Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt % is recommended).

(3) Cautions

- Fluxes Avoid removing the residual flux with chlorine-based cleaning solvent after a reflow process.

CAUTIONS REGARDING NOISE

Be aware that when voltage is applied suddenly between the photocoupler's input and output or between corrector-emitters at start-up, the output side may enter the on state, even if the voltage is within the absolute maximum ratings.

Life Support Applications

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