PC727

Low Input Current Drive Type Photocoupler

■ Features

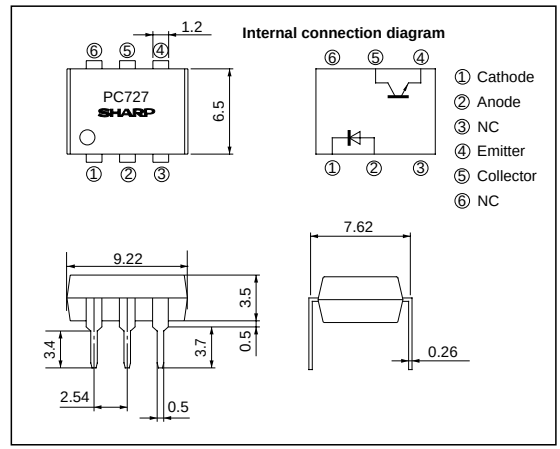
1. Low input current drive type (I_F : 50 μ A)
2. Current transfer ratio (CTR : MIN. 60%)
   Assured within operating temperature range (Ta=-25 to +60˚C)

■ Applications

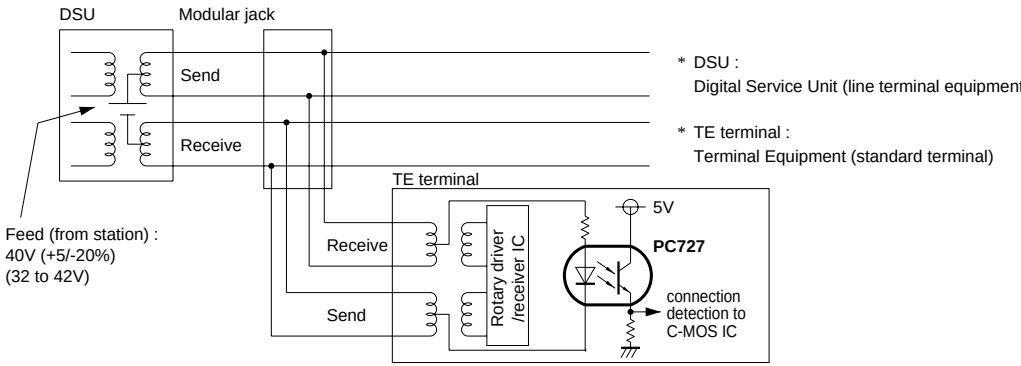
1. ISDNs
2. Telephone sets

■ Outline Dimensions

(Unit : mm)



Example of ISDN terminal configuration



* DSU :
Digital Service Unit (line terminal equipment)

* TE terminal :
Terminal Equipment (standard terminal)

■ Absolute Maximum Ratings

(Ta=25˚C)

Parameter		Symbol	Rating	Unit
Input	*1 Forward current	I_F	5	mA
	*2 Peak forward current	I_{FM}	300	mA
	Reverse voltage	V_R	6	V
	*1 Power dissipation	I_{CEO}	40	mW
Output	Collector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	I_C	50	mA
	*3 Collector power dissipation	P_C	150	mW
*3 Total power dissipation		P_{tot}	170	mW
Operating temperature		T_{opr}	- 30 to + 100	˚C
Storage temperature		T_{stg}	- 55 to + 125	˚C
*4 Isolation voltage		V_{iso}	2 500	Vrms
*5 Soldering temperature		T_{sol}	260	˚C

*1 Ta=-30 to +100˚C
*2 Pulse width <=100 μs,
Duty ratio=0.01 (Refer to Fig. 3)
*3 Decrease in the ambient temperature range of the Absolute Max. Rating : Shown in Figs.1 and 2.
*4 40 to 60% RH, AC for 1 minute
*5 For 10 seconds

■ Electro-optical Characteristics

(Ta=25˚C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	I_F = 50μA	-	1.2	-	V
			I_F = 5mA	-	1.4	1.6	
	Peak forward voltage	V_{FM}	I_{FM} = 300mA	-	-	2	V
	Reverse current	I_R	V_R = 4V	-	-	10	μA
	Terminal capacitance	C_t	V = 0, f = 1kHz	-	80	-	pF
Output	*6Dark current	I_{CEO}	V_{CE} = 10V, I_F = 0	-	-	3	μA
	Collector-emitter breakdown voltage	BV_{CEO}	Ic = 0.1mA, I_F = 0	35	-	-	V
	Emitter-collector breakdown voltage	BV_{ECO}	I_E = 0.01mA, I_F = 0	6	-	-	V
Transfer characteristics	*6Collector current	I_c	I_F = 50μA, V_{CE} = 5V	30	-	-	μA
	Collector-emitter saturation voltage	$V_{CE(sat)}$	I_F = 100μA, I_c = 50μA	-	-	1	V
	Insulation resistance	R_{ISO}	DC500V, 40to 60% RH	5×10^{10}	1×10^{11}	-	Ω
	Cut-off frequency	f_c	V = 0, f = 1MHz	-	0.6	-	pF
	Response time (rise)	t_r	V_{CE} = 2V, I_c = 2mA	-	20	-	μs
	Response time (fall)	t_f	R_L = 100Ω	-	25	-	

*6 Ta = - 25 to + 60˚C

Fig. 1 Collector Power Dissipation vs. Ambient Temperature

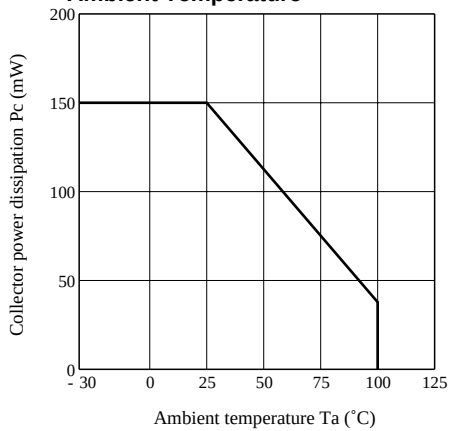


Fig. 2 Total Power Dissipation vs. Ambient Temperature

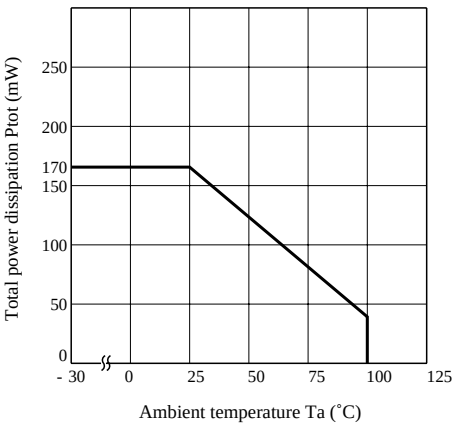
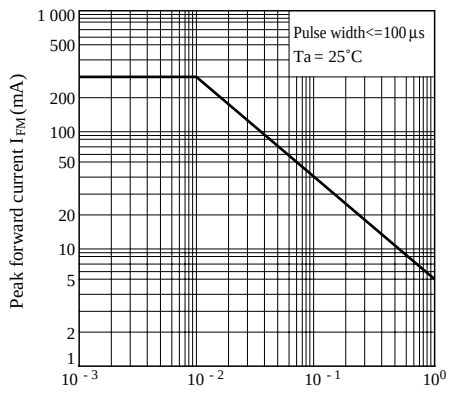


Fig. 3 Peak Forward Current vs. Duty Ratio



● Please refer to the chapter "Precautions for Use."