

# PC727

## Low Input Current Drive Type Photocoupler

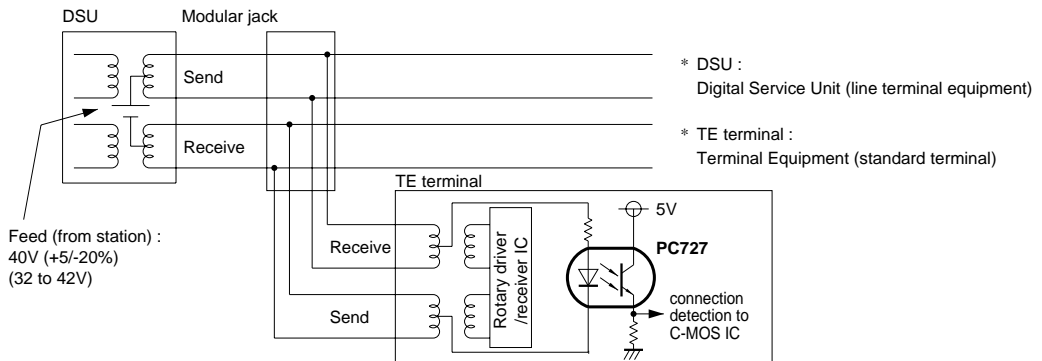
### ■ Features

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

### ■ Applications

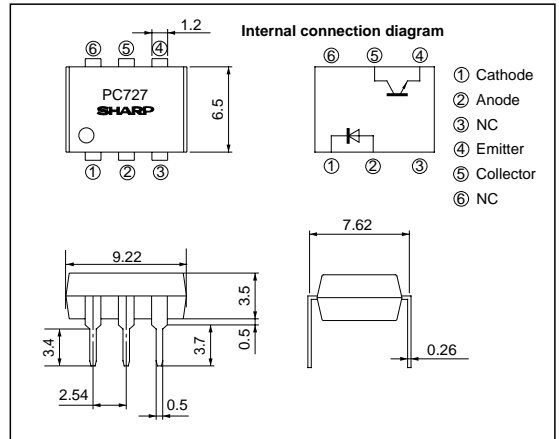
1. ISDNs
2. Telephone sets

Example of ISDN terminal configuration



### ■ Outline Dimensions

(Unit : mm)



### ■ Absolute Maximum Ratings

( $T_a$  = 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  $T_a$  = -30 to +100°C

\*2 Pulse width  $\leq$  100  $\mu$ s.  
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

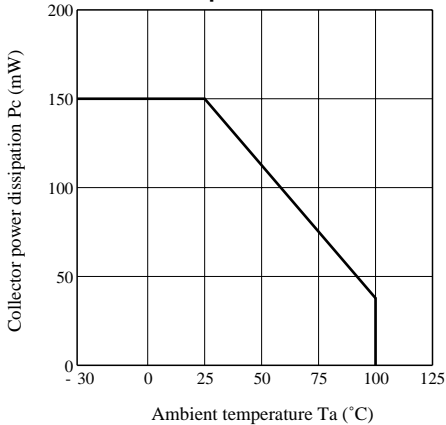
**Electro-optical Characteristics**

(Ta=25°C)

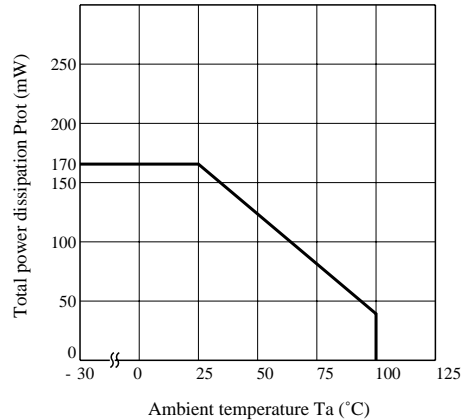
Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 50 μA	-	1.2	-	V
			I <sub>F</sub> = 5mA	-	1.4	1.6	
	Peak forward voltage	V <sub>FM</sub>	I <sub>FM</sub> = 300mA	-	-	2	V
	Reverse current	I <sub>R</sub>	V <sub>R</sub> = 4V	-	-	10	μA
Terminal capacitance		C <sub>t</sub>	V = 0, f = 1kHz	-	80	-	pF
Output	*6 Dark current	I <sub>CEO</sub>	V <sub>CE</sub> = 10V, I <sub>F</sub> = 0	-	-	3	μA
	Collector-emitter breakdown voltage	BV <sub>CEO</sub>	I <sub>c</sub> = 0.1mA, I <sub>F</sub> = 0	35	-	-	V
	Emitter-collector breakdown voltage	BV <sub>ECO</sub>	I <sub>E</sub> = 0.01mA, I <sub>F</sub> = 0	6	-	-	V
Transfer characteristics	*6 Collector current	I <sub>c</sub>	I <sub>F</sub> = 50 μA, V <sub>CE</sub> = 5V	30	-	-	μA
	Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>F</sub> = 100 μA, I <sub>c</sub> = 50 μA	-	-	1	V
	Insulation resistance	R <sub>ISO</sub>	DC500V, 40to 60% RH	5 x 10 <sup>10</sup>	1 x 10 <sup>11</sup>	-	Ω
	Cut-off frequency	f <sub>c</sub>	V = 0, f = 1MHz	-	0.6	-	pF
	Response time (rise)	t <sub>r</sub>	V <sub>CE</sub> = 2V, I <sub>c</sub> = 2mA	-	20	-	μs
Response time (fall)	t <sub>f</sub>	R <sub>L</sub> = 100Ω	-	25	-		

\*6 Ta = - 25 to + 60°C

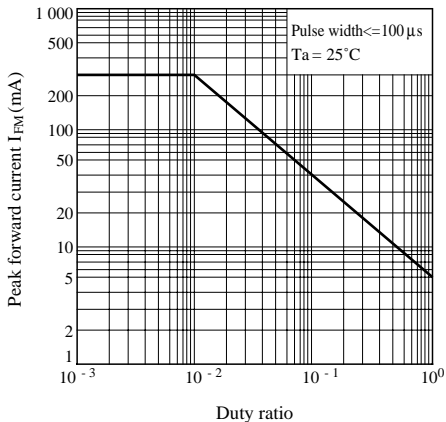
**Fig. 1 Collector Power Dissipation vs. Ambient Temperature**



**Fig. 2 Total Power Dissipation vs. Ambient Temperature**



**Fig. 3 Peak Forward Current vs. Duty Ratio**



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