



Features:

1. Current transfer ratio (CTR: MIN. 50% at $I_F=5\text{mA}$, $V_{CE}=5\text{V}$)
2. High input-output isolation voltage ($V_{ISO}=5,000\text{Vrms}$)
3. Response time (t_r : TYP. $4\mu\text{s}$ at $V_{CE}=2\text{V}$, $I_C=2\text{mA}$, $R_L=100\ \Omega$)
4. Package type:
 - PS817 : dual-in-line package
 - PS817S : surface mounting packag

escription

1. The PS817 series are optically coupled isolators containing a GaAs light emitting diode and an NPN silicon phototransistor
2. The lead pitch is 2.54mm

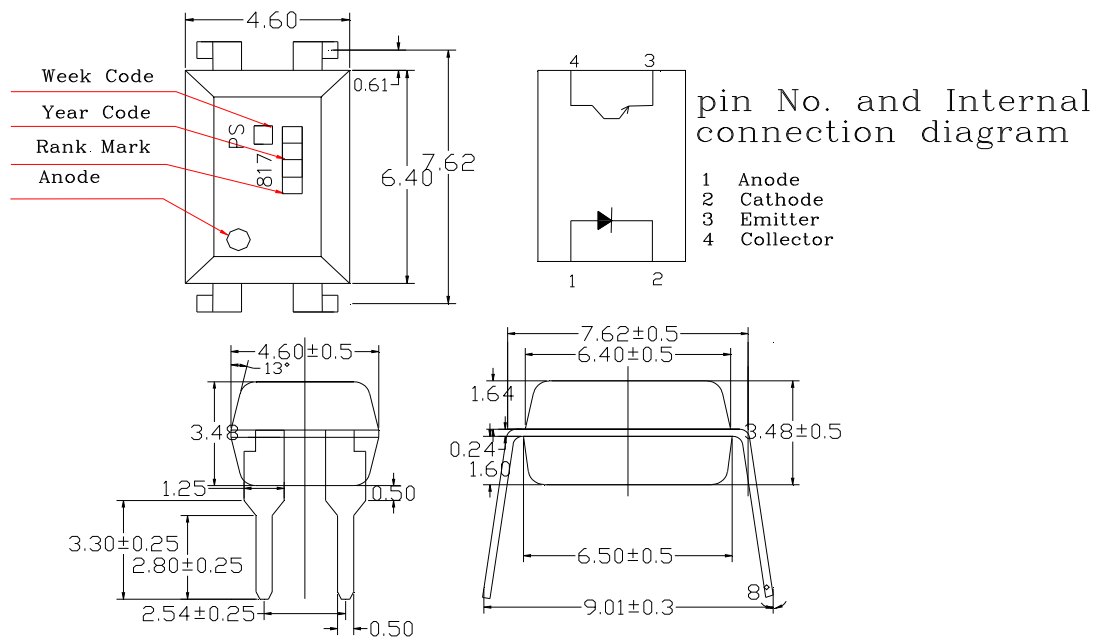
Applications:

1. Computer terminals.
2. System appliances, measuring instruments.
3. Registers, copiers, automatic vending machines.
4. Electric home appliances, such as fan heaters, etc.
5. Signal transmission between circuits of different potentials and impedances.

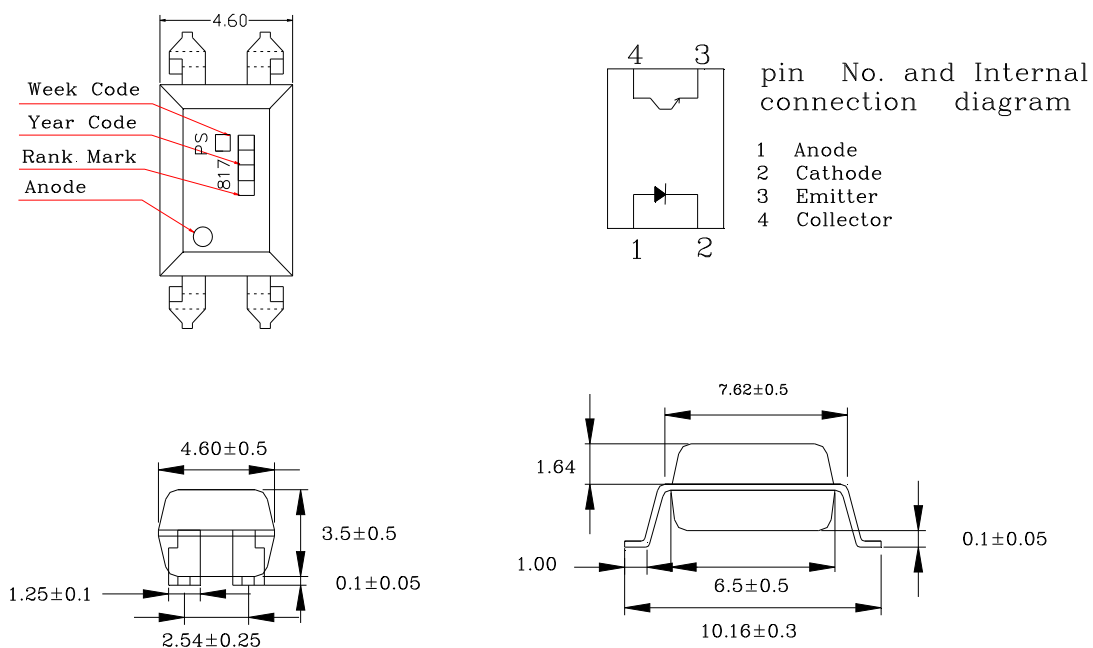


Outline Dimensions

Typical DIP Type



S Type




Absolute Maximum Ratings (Ta=25 °C)

Parameter		Symbol	Rating	Unit
INPUT	Forward Current	I_F	50	mA
	Reverse Voltage	V_R	6	V
	Power Dissipation	P	70	mW
OUTPUT	Collector-Emitter Voltage	V_{CEO}	80	V
	Emitter- Collector Voltage	V_{ECO}	7	
	Collector Current	I_C	50	mA
	Collector Power Dissipation	P_C	150	mW
Total Power Dissipation		P_{tot}	200	mW
*1 Isolation Voltage		V_{iso}	5,000	Vrms
Operating Temperature		T_{opr}	-55 to + 110	°C
Storage Temperature		T_{stg}	-55 to + 125	
*2 Soldering Temperature		T_{sol}	260	

*1. AC for 1 minute, R.H. =40~60%

Isolation voltage shall be measured using the following method.

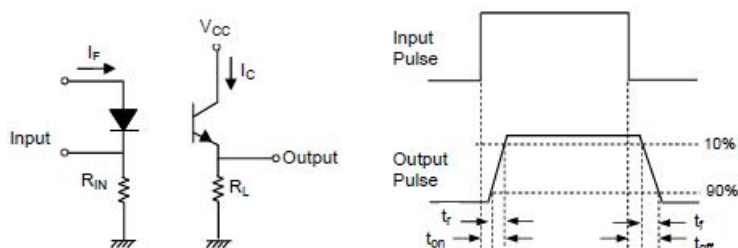
(1) Short between anode and cathode on the primary side and between collector and emitter on the secondary side.

(2) The waveform of applied voltage shall be a sine wave.

*2. For 10 Seconds

Electro-Optical Characteristics (Ta=25)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX	Unit
INPUT	Forward Voltage	V_F	$I_F=10\text{mA}$	1.0	---	1.3	V
	Reverse Current	I_R	$V_R=5\text{V}$	---	---	10	μA
	Terminal Capacitance	C_t	$V=0, f=1\text{KHz}$	---	30	250	pF
OUTPUT	Collector Dark Current	I_{CEO}	$V_{CE}=5\text{V}, I_F=0$	---	---	20	nA
			$V_{CE}=24\text{V}, I_F=0$	---	---	100	nA
	Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=0.1\text{mA}$ $I_F=0$	80	---	---	V
	Emitter-Collector Breakdown Voltage	BV_{ECO}	$I_E=0.1\text{mA}$ $I_F=0$	7	---	---	V
	Collector Current	I_c	$I_F=5\text{mA}, V_{CE}=5\text{V}$	2.5	---	30	mA
	*2 Current Transfer Ratio	CTR	$I_F=5\text{mA}, V_{CE}=5\text{V}$	300	---	600	%
			$I_F=2\text{mA}, V_{CE}=5\text{V}$	200	---	500	%
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_F=1\text{mA}$ $I_C=1\text{mA}$	---	---	0.4	V
	Isolation Resistance	R_{iso}	DC500V 40~60%R.H.	1×10^{12}	---	---	Ω
	Floating Capacitance	C_f	$V=0, f=1\text{MHz}$	---	0.6	1	pF
	Cut-Off Frequency	f_c	$V_{CE}=5\text{V},$ $I_C=2\text{mA}$ $R_L=100\Omega, -3\text{dB}$	---	80	---	kHz
	Response Time(Rise)	t_r	$V_{CE}=10\text{V},$ $I_C=2\text{mA}$ $R_L=100\Omega$	---	---	12	μs
	Response Time(Fall)	t_f		---	---	12	μs
		t_{on}		---	---	12	μs
		t_{off}		---	---	12	μs

*1: $CTR = I_c / I_F \times 100\%$ 

Switching Time Test Circuit & Waveforms



Rank Table Of Current Transfer Ratio(CTR)

RANK MARK	Min. (%)	Max. (%)
L	50	100
A	80	160
B	130	260
C	200	400
D	300	600
L or A or B or C or D	50	600

Notes: Conditions: $I_F=5\text{mA}$, $V_{CE}=5\text{V}$, $T_a=25^\circ\text{C}$.



Fig.1 Forward Current
vs. Ambient Temperature

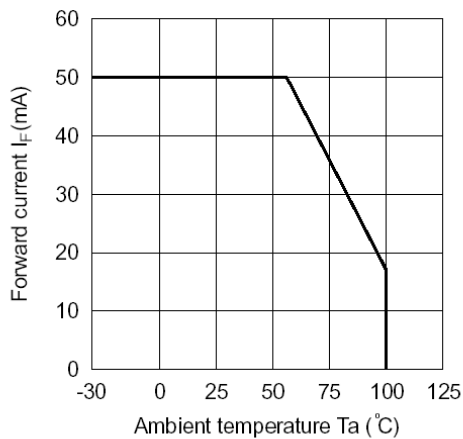


Fig.2 Collector Power Dissipation
vs. Ambient Temperature

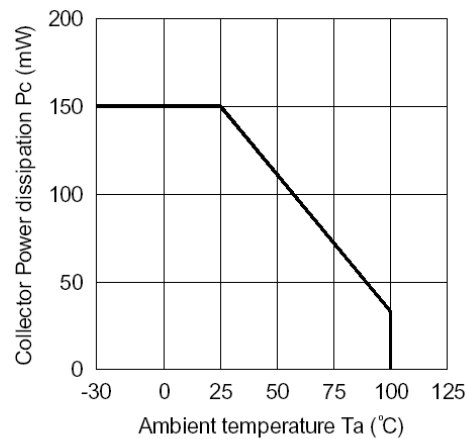


Fig.3 Collector-emitter Saturation
Voltage vs. Forward Current

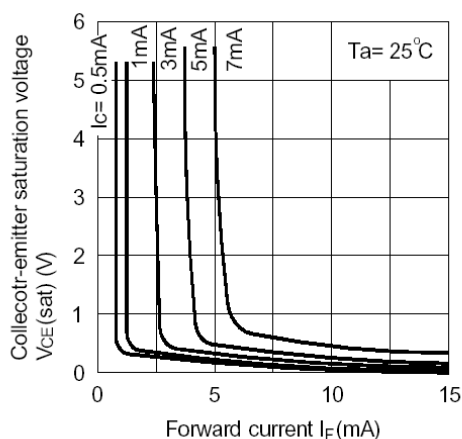


Fig.4 Forward Current vs. Forward
Voltage

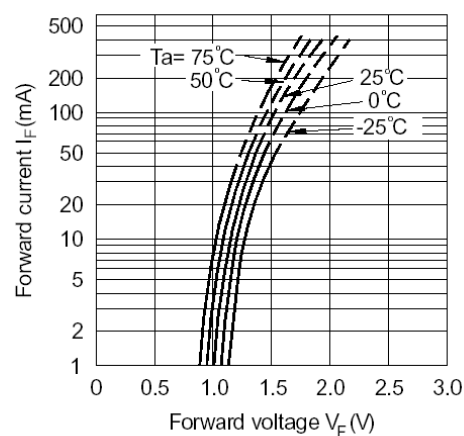


Fig.5 Current Transfer Ratio vs.
Forward Current

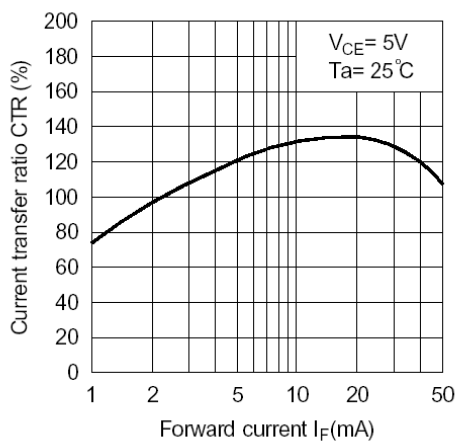
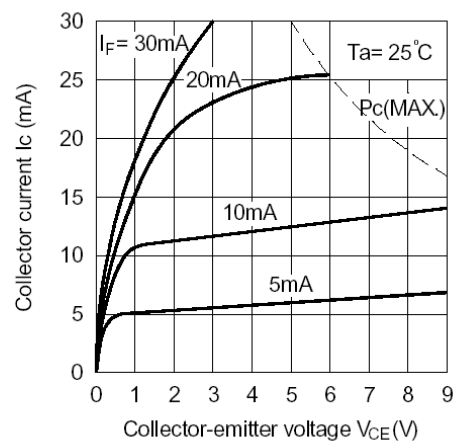


Fig.6 Collector Current vs.
Collector-emitter Voltage



Characteristics Curves

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

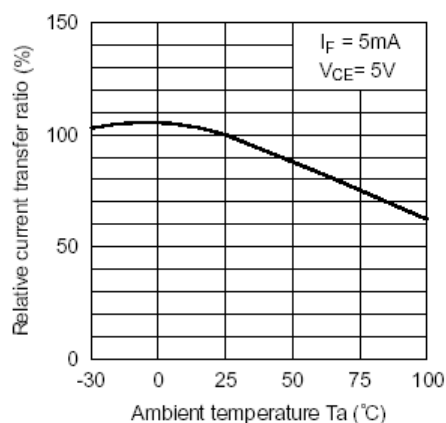


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

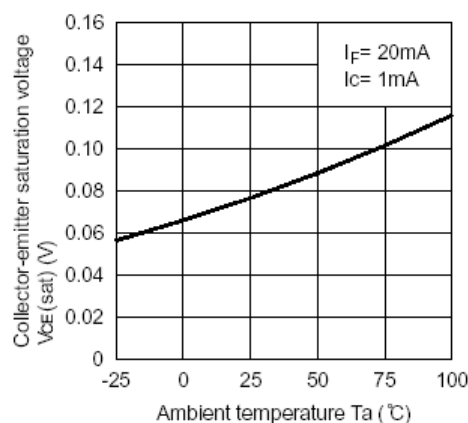


Fig.9 Collector Dark Current vs. Ambient Temperature

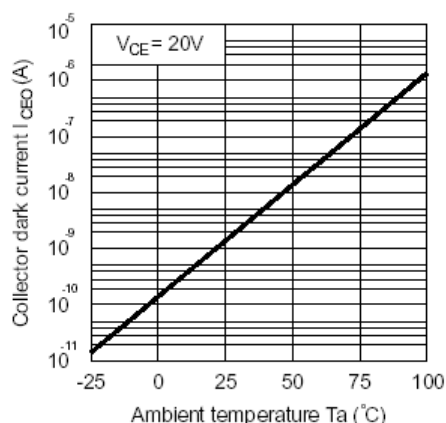


Fig.10 Response Time vs. Load Resistance

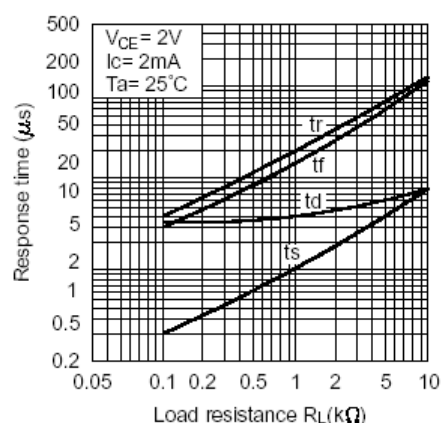
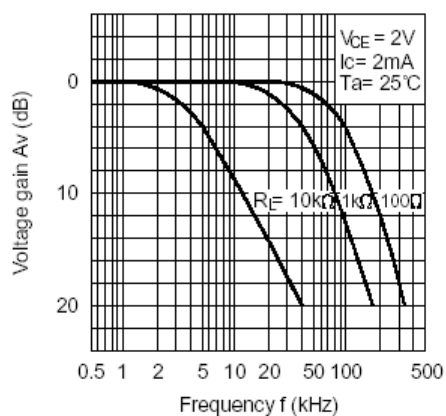
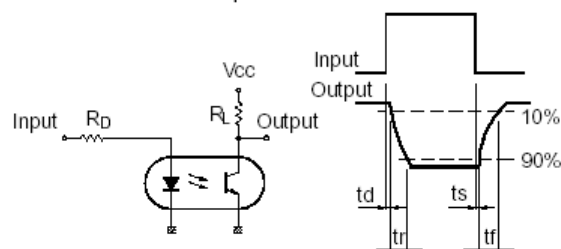


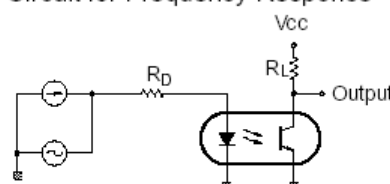
Fig.11 Frequency Response



Test Circuit for Response Time



Test Circuit for Frequency Response

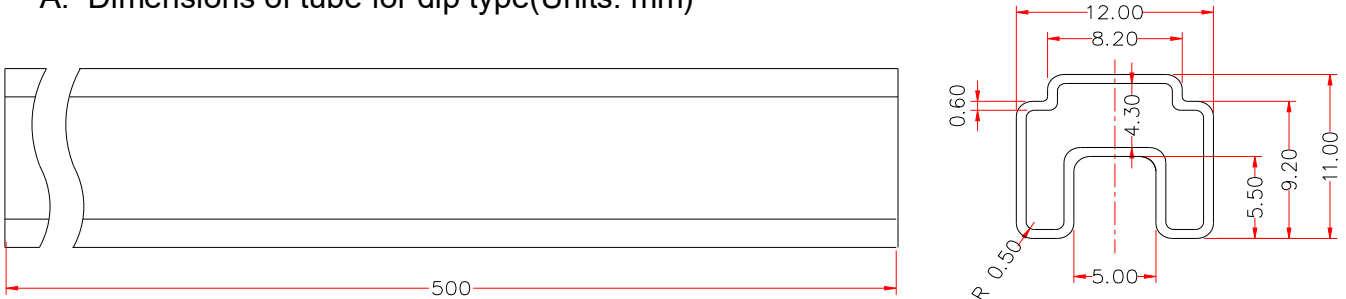




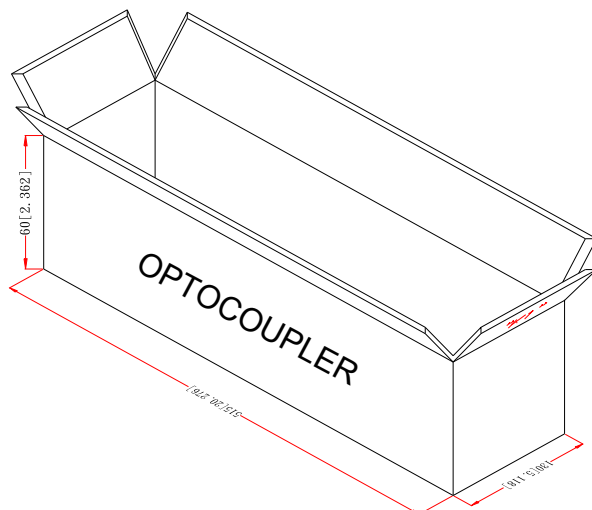
● Packaging

1. Tube Packing(Dip Type)

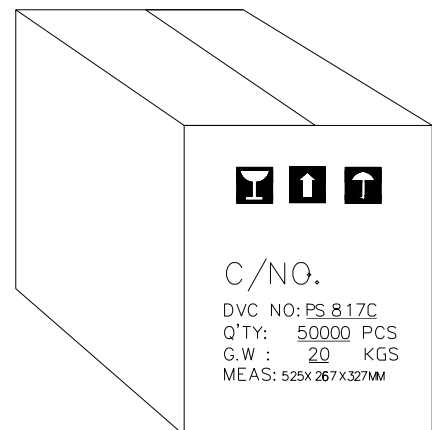
A. Dimensions of tube for dip type(Units: mm)



B. Inner Carton (Units: mm)



C. Outside Carton(Units: mm)



D. Packing Quantity

100 pcs per Tube;

50 Tube per Inner Carton for Dip Type;

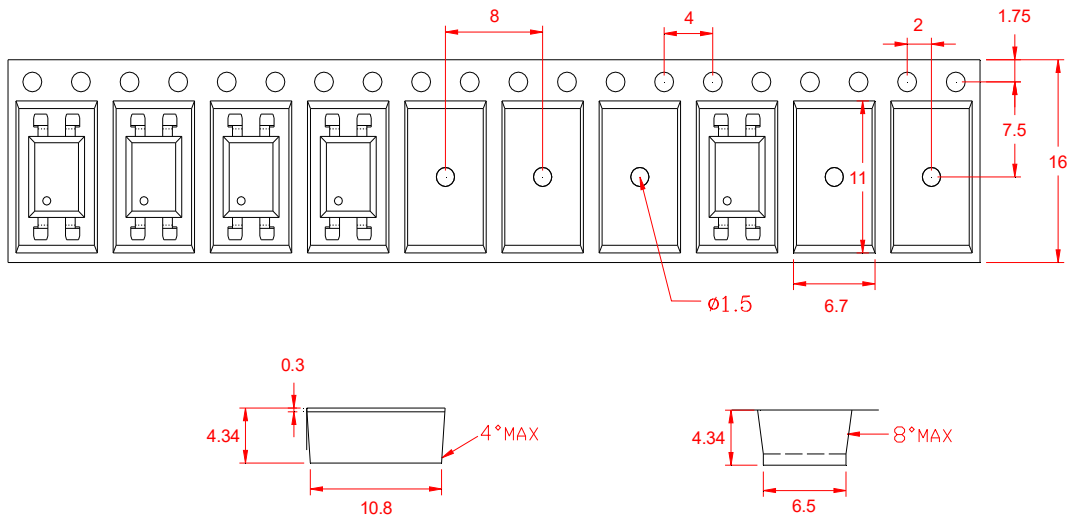
10 Inner Carton per Outside Carton



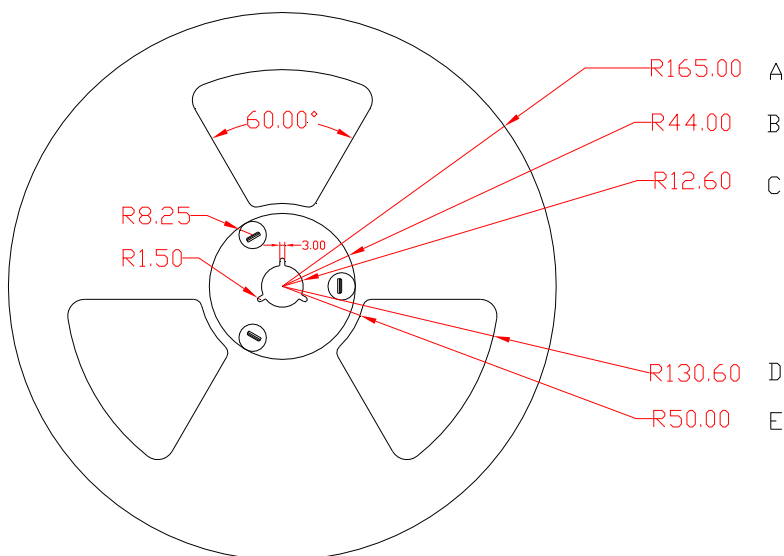
● Packaging

2. Tape & Reel Packing(S Type)

A. Dimensions of Reel



B. Dimensions of Tape



C. Packing Quantity

- 2 Kpcs per Reel;
- 3 Reel per Inner Carton;
- 5 Inner Carton per Outside Carton