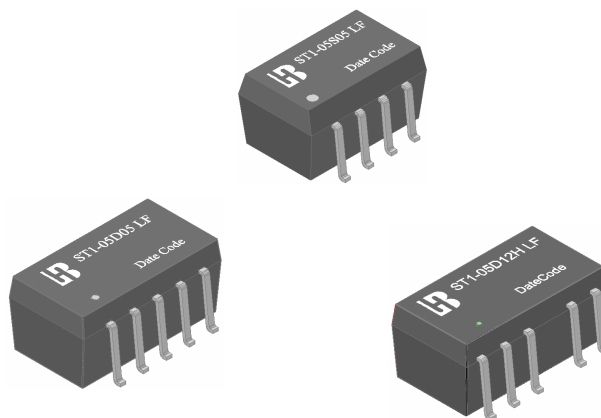


### 1 . Features

- Lead Frame & Injection Technology
- High Efficiency Up To 83%
- Input / Output Isolation : 1K Vdc Or 3K Vdc
- 100% Burn-In
- Input Filter With Internal Capacitor
- Custom Design Available
- Net Weight : 1.6 g / 2.1 g Typica
- RoHS Converter Certified By SGS



### 2 . Model Selection Guide

(Specifications typical at Ta= +25 , Nominal input voltage, Rated output current unless otherwise noted)

Model No.	Input Voltage (Vdc)	Output Voltage (Vdc)	Output Current (mA) Max	Input Current @No Load (mA) Typ.	Input Current @Max. Load (mA) Typ.	Output Ripple (mV) Max.	Load Regulation (%) Max.	Efficiency (%)Typ.
<b>1) Single Output Series</b>								
ST1-05S3R3 LF	5	3.3	200	22	171	60	12	77
ST1-05S05 LF		5	200	25	246	60	8	81
ST1-05S09 LF		9	110	23	254	70	8	78
ST1-05S12 LF		12	84	25	252	100	8	80
ST1-05S15 LF		15	67	28	248	120	8	81
ST1-12S3R3 LF	12	3.3	200	12	73	60	12	75
ST1-12S05 LF		5	200	15	100	60	8	81
ST1-12S09 LF		9	110	15	105	70	8	78
ST1-12S12 LF		12	84	15	103	100	6	81
ST1-12S15 LF		15	67	14	100	120	6	83
ST1-24S3R3 LF	24	3.3	200	6	44	60	8	67
ST1-24S05 LF		5	200	7	63	60	5	71
ST1-24S09 LF		9	110	6	60	70	5	73
ST1-24S12 LF		12	84	8	58	100	5	76
ST1-24S15 LF		15	67	8	58	120	5	77



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### 2) Dual Output Series

ST1-05D05 LF	5	5	± 100	28	281	60	8	71
ST1-05D09 LF		9	± 56	24	256	70	8	78
ST1-05D12 LF		12	± 42	24	258	100	8	78
ST1-05D15 LF		15	± 34	26	252	120	8	81
ST1-12D05 LF	12	5	± 100	15	114	60	8	73
ST1-12D09 LF		9	± 56	15	106	70	8	79
ST1-12D12 LF		12	± 42	15	104	100	6	81
ST1-12D15 LF		15	± 34	15	102	120	6	83
ST1-24D3R3 LF	24	3.3	± 100	6	45	60	8	66
ST1-24D05 LF		5	± 100	7	58	60	5	76
ST1-24D09 LF		9	± 56	8	57	70	5	78
ST1-24D12 LF		12	± 42	7	56	100	5	80
ST1-24D15 LF		15	± 34	10	60	120	5	75

#### Notes :

1. Load regulation is for output current change from 20% to 100% Max .Load.

### 3 . Absolute Maximum Ratings

(Exceeding these values may damage the module. These are not continuous operating ratings)

Parameter	Condition	Min.	Typ.	Max.	Unit
Input Absolute Voltage Range	5V Input Model	- 0.7	5	7.5	Vdc
	12V Input Model	- 0.7	12	15	
	24V Input Model	- 0.7	24	30	
Max. Output Power		---	---	1.0	W
Output Short Circuit Duration		---	---	1.0	Second
Operation Temperature (Ambient Temperature)	Output Full Load	- 40	---	+ 85	
Storage Temperature		- 55	---	+ 125	
Lead Temperature 1.5 mm From Case For 10 Seconds		---	---	+ 300	
Peak Airflow Temperature With CECC 00802 Profile		---	---	+ 280	



### 4 . Nominal Input/Output Electrical Specifications

(Specifications typical at Ta= +25 ,Nominal input voltage, Rated output current unless otherwise noted)

Parameter	Condition	Min.	Typ.	Max.	Unit
Input Voltage Range	5V Input Model	4.5	5	5.5	Vdc
	12V Input Model	10.8	12	13.2	
	24V Input Model	21.6	24	26.4	
Output Voltage Accuracy	Nominal Input	---	± 1.0	± 3.0	%
Output Voltage Balance	Dual Output Same Load	---	---	± 1.0	%
Switching Frequency	Nominal Input	70	100	150	KHz
Temperature Coefficient		---	± 0.01	± 0.02	%/
Isolation Voltage	60 Second	1000	---	---	Vdc
	60 Second	3000	---	---	
Isolation Resistance	500Vdc	1000	---	---	M
Isolation Capacitance	5V Input Model	18	30	35	pF
	12V Input Model	16	33	39	
	24V Input Model	18	35	43	
Max. Line Regulation (Per1.0% change in input change)	---	---	---	1.2	%

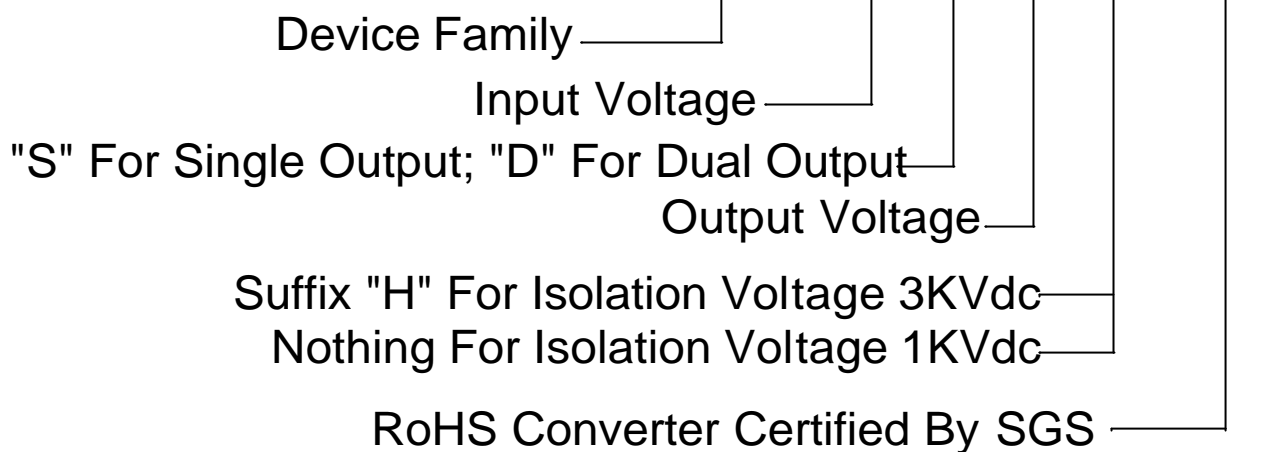
### 5 . General Specification

Parameter	Specification	Condition
Isolation Voltage	1000/3000 Vdc	Test Duration 60 Seconds / 0.5 mA
Isolation Resistance	1000 M Min.	@ 500 Vdc
Operating Temperature (1)	- 40 ~ + 85	@ Ambient Temperature With Natural Convection
Operating Temperature (2)	- 40 ~ + 95	@ Case Surface Temperature
Storage Temperature	- 55 ~ + 125	---
Humidity	Up To 90 %	---
Cooling	Free Air Convection	---



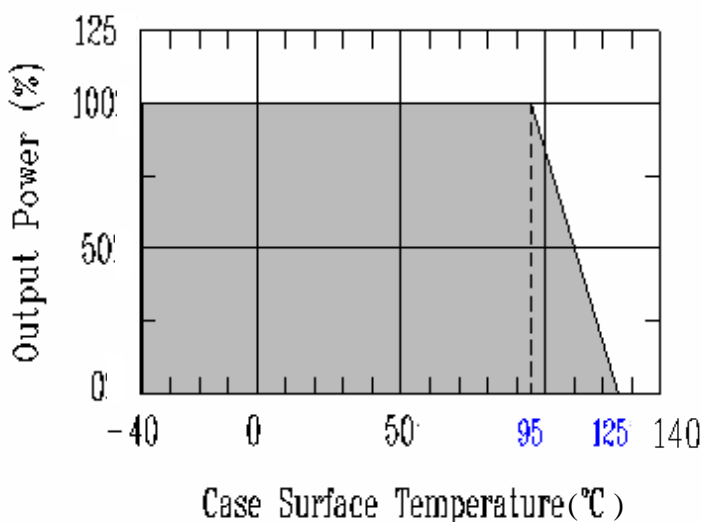
## 6 . Ordering Information

# ST1-xxSyyH LF



## 7 . Power Derating Curve

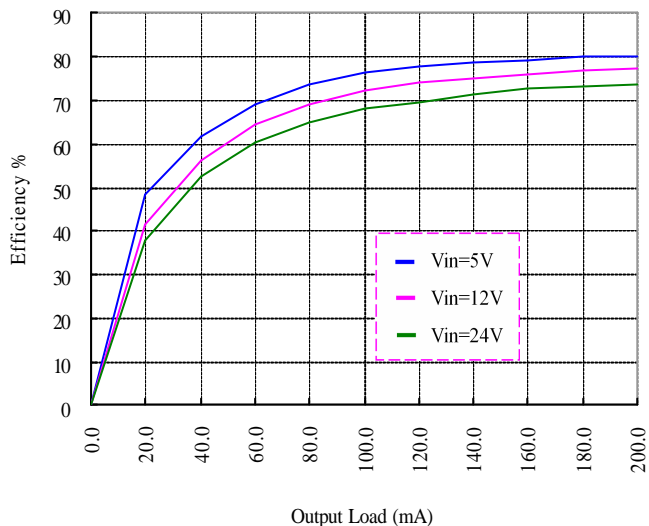
Temperature derating graph



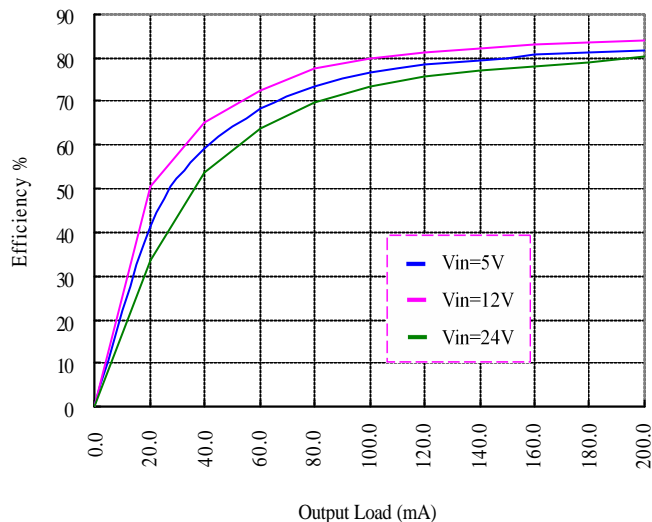
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### 8 . Efficiency & Output Load Chart

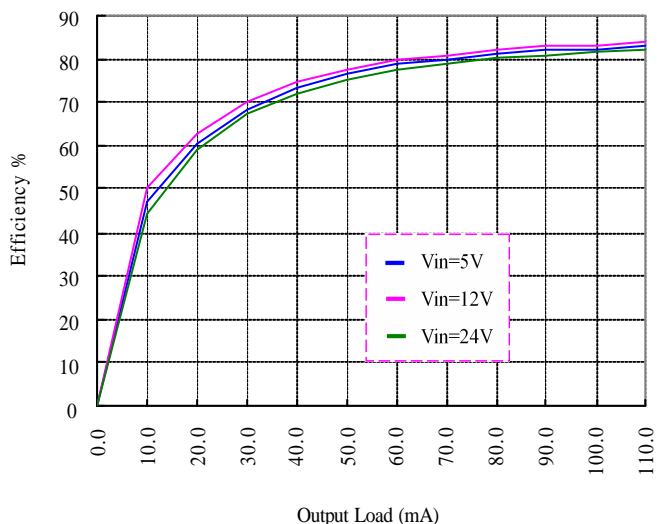
**Vout= 3.3 Vdc**



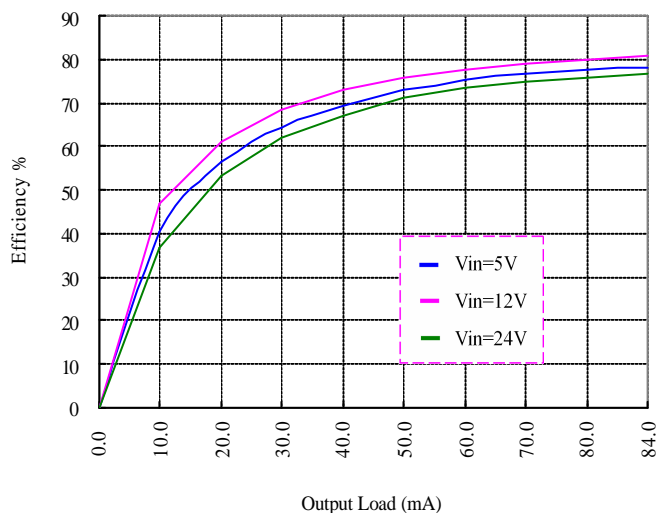
**Vout= 5 Vdc**



**Vout= 9 Vdc**

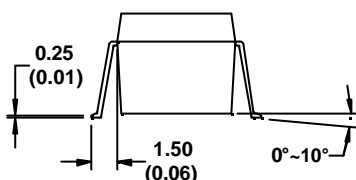
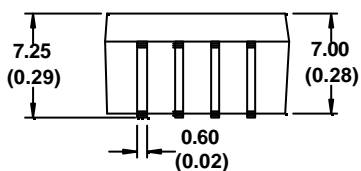
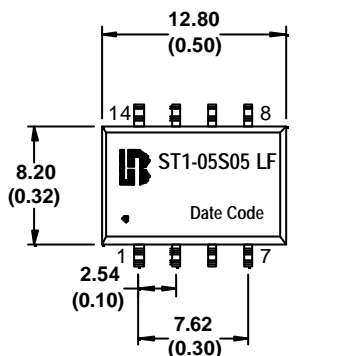


**Vout= 12 Vdc**



### 9 . Mechanical Dimension

#### Single Output Series(For Isolation Voltage 1KVdc)



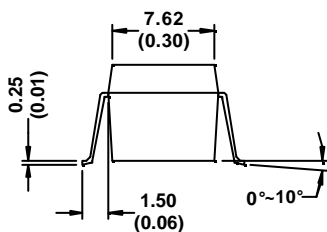
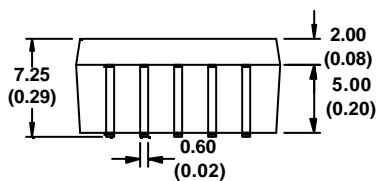
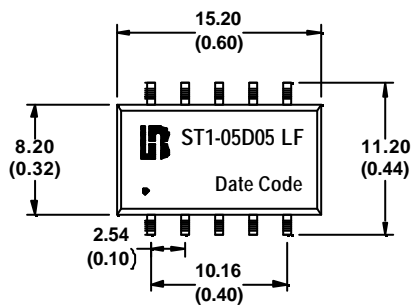
Pin	1K Vdc - Dual		Pin
1	-Vin	NA	18
3	+Vin	NA	16
5	NA	NA	14
7	Common	+Vo	12
9	-Vo	NA	10

Note : NA = not available for electrical connection.

Units : mm (inch)

Tolerance : 0.xx ± 0.25(0.xx ± 0.01)

#### Dual Output Series(For Isolation Voltage 1KVdc)



Pin	1K Vdc - Single		Pin
1	-Vin	NA	14
3	+Vin	NA	12
5	NA	NA	10
7	-Vo	+Vo	8

Note : NA = not available for electrical connection

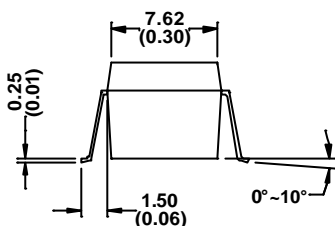
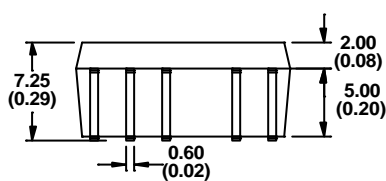
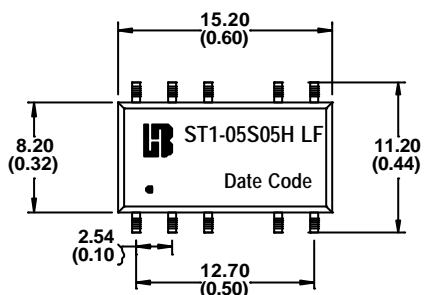
Units : mm (inch)

Tolerance : 0.xx ± 0.25(0.xx ± 0.01)



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### Single Output Series (For Isolation Voltage 3KVdc)

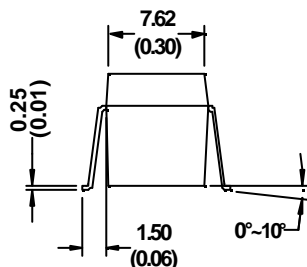
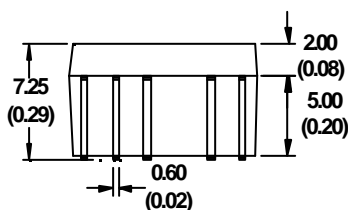
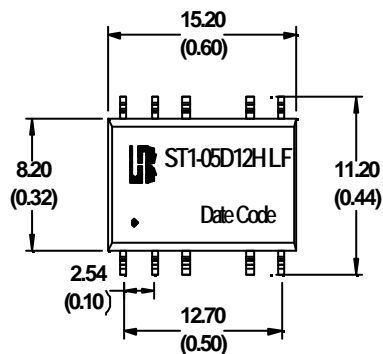


Pin	3K Vdc - Single		Pin
1	-Vin	NA	22
3	+Vin	NA	20
5	NA	NA	18
9	-Vo	+Vo	14
11	NA	NA	12

Units : mm (inch)

Tolerance : 0.xx ± 0.25(0.xx ± 0.01)

### Dual Output Series (For Isolation Voltage 3KVdc)



Pin	3K Vdc - Dual		Pin
1	-Vin	NA	22
3	+Vin	NA	20
5	NA	NA	18
9	Common	+Vo	14
11	-Vo	NA	12

Units : mm (inch)

Tolerance : 0.xx ± 0.25(0.xx ± 0.01)

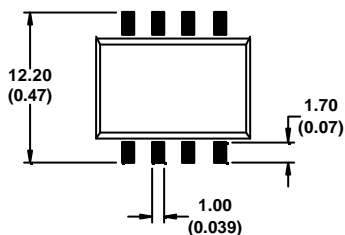
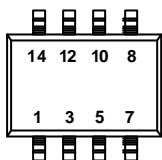


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### 10 . Recommended Footprint Details

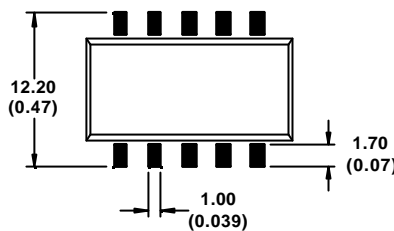
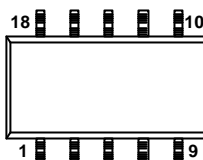
#### Single Package Style

For Isolation Voltage 1KVdc



#### Dual Package Style

For Isolation Voltage 1KVdc

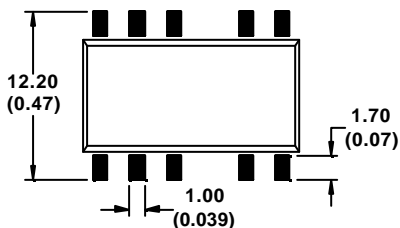
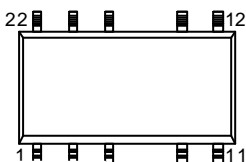


Units : mm (inch)

Tolerance : 0.xx ± 0.25(0.xx ± 0.01)

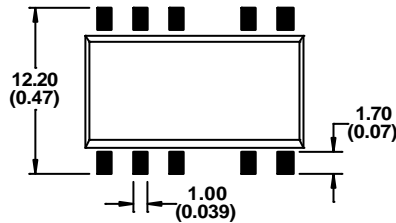
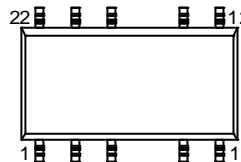
#### Single Package Style

For Isolation Voltage 3KVdc



#### Dual Package Style

For Isolation Voltage 3KVdc



Units : mm (inch)

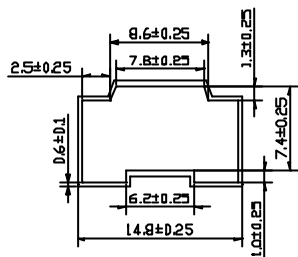
Tolerance : 0.xx ± 0.25(0.xx ± 0.01)



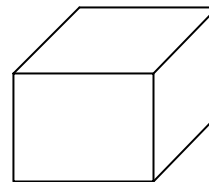
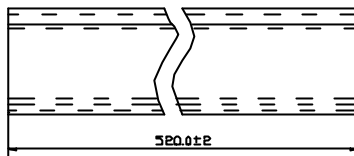
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### 11 . Package

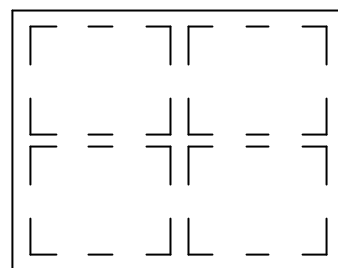
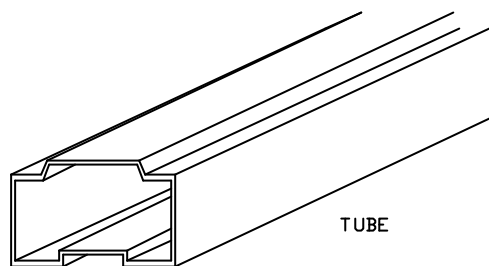
#### Single Output Series For Isolation 1KVdc



TUBE MECHANICAL DIMENSION



INNER CARTON:565\*115\*117

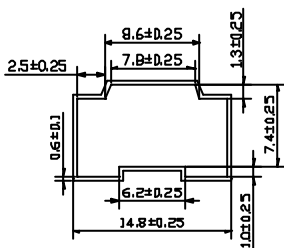


EXPORT CARTON:580\*255\*265

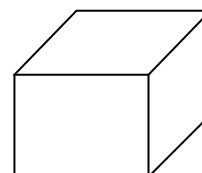
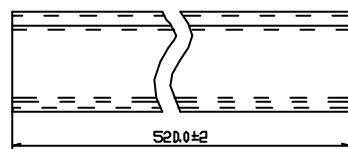
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2. INNER CARTON=77 TUBE=77\*39=3003PCS
3. EXPORT CARTON=4 INNER CARTON=4\*3003=12012PCS

#### Single Output Series For Isolation 3KVdc

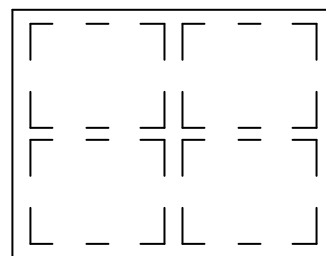
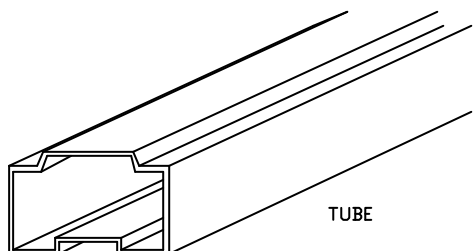
#### Dual Output Series For Isolation 1K、 3KVdc



TUBE MECHANICAL DIMENSION



INNER CARTON:565\*115\*117



EXPORT CARTON:580\*255\*265

1. TUBE=33PCS
2. INNER CARTON=77 TUBE=77\*33=2541PCS
3. EXPORT CARTON=4 INNER CARTON=4\*2541=10164PCS

