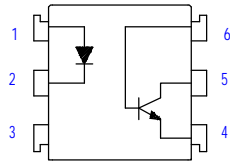


### Schematic:



For dimensions and pin-outs, see the last page of this document.

### Features:

1. Current transfer ratio  
(CTR min 100% at  $I_F=10\text{mA}$   $V_{ce}=5\text{V}$ )
2. High isolation voltage between input and output  
(Viso = 5300Vrms, 7500Vpk).

### Ordering:

Suffix to Standard Part Number

V = VDECompliant

G = 10mm Lead Spread

S = Surface Mount Lead-form

T = Tape & Reel

### Equivalents:

This part equals/exceeds all specifications of:

- 4N25, 26, 27, 28, 35, 36, 37, 38, 38A
- CNY17-1, 2, 3, 4, 5
- CNY75A, B, C
- H11A1, 2, 3, 4, 5
- H11AV1, 2, 3
- MCT2, 2E, 270, 277, 2200, 2201, 2202
- SFH609-1, 2, 3
- TIL111, 114, 116, 117

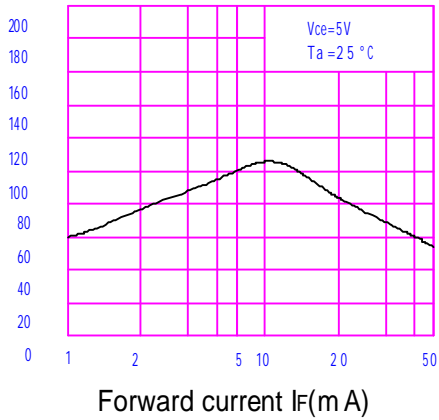
### Absolute Maximum Ratings:

Parameter		Symbol	Rating	Unit
Input	Peak forward current	$I_{FM}$	1	A
	Reverse voltage	$V_R$	6	V
	Power dissipation	$P_D$	70	mW
	Collector-emitter voltage	$V_{CEO}$	80	V
Output	Emitter-collector voltage	$V_{ECO}$	6	V
	Collector-base voltage	$V_{CBO}$	60	V
	Emitter-base voltage	$V_{EBO}$	6	V
	Collector current	$I_C$	50	mA
	Collector power dissipation	$P_C$	150	mW
	Total power dissipation	$P_{tot}$	200	mW
Isolation voltage 1 minute		$V_{iso}$	5300	Vrms
		$V_{iso}$	7500	Vpk
Operating temperature		$T_{opr}$	-55 to +100	°C
Storage temperature		$T_{stg}$	-55 to +125	°C
Soldering Temperature 10 seconds		$T_{sol}$	260	°C

### Electrical Characteristics:

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V <sub>F</sub>	$I_F=20\text{mA}$	-	1.2	1.4	V
	Peak forward voltage	V <sub>FM</sub>	$I_{FM}=0.5\text{A}$	-	-	3.5	V
	Reverse current	I <sub>R</sub>	$V_R=4\text{V}$	-	-	10	µA
	Terminal capacitance	C <sub>t</sub>	$V=0, f=1\text{kHz}$	-	30	-	pF
Output	Collector dark current	I <sub>CEO</sub>	$V_{CE}=20\text{V}$	-	-	0.1	µA
Transfer characteristics	Current transfer ratio	CTR	$I_F=10\text{mA}, V_{CE}=5\text{V}$	100	-	320	%
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F=20\text{mA}, I_C=1\text{mA}$	-	0.1	0.3	V
	Isolation resistance	R <sub>iso</sub>	DC500V	$5 \times 10^{10}$	$10^{11}$	-	ohm
	Floating capacitance	C <sub>f</sub>	$V=0, f=1\text{MHz}$	-	0.6	1.0	Pf
	Cut-off frequency	f <sub>c</sub>	$V_{cc}=5\text{V}, I_C=2\text{mA}, R_L=100\text{ohm}$	-	80	-	kHz
	Response time (Rise)	t <sub>r</sub>	$V_{ce}=2\text{V}, I_C=2\text{mA}, R_L=100\text{ohm}$	-	5	20	µs
Response time (Fall)	t <sub>f</sub>		-	4	20	µs	

Fig. 1 Current Transfer Ratio Vs. Forward Current



Classification table of current transfer ratio is shown below.

CTR CLASSIFICATIONS:		
MODEL #	CTR %	
	IF = 10mA	IF = 1mA
A / 1	40 – 80	13
B / 2	63 – 125	22
C / 3	100 – 200	34
D / 4	160 – 320	56
E / 5	200 – 400	68

Fig.2 Collector Power Dissipation vs. Ambient Temperature

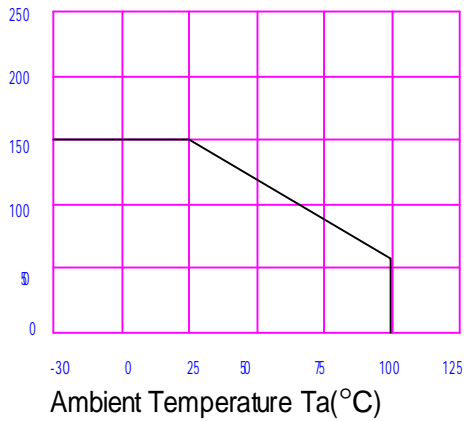


Fig.3 Collector Dark Current vs. Ambient Temperature

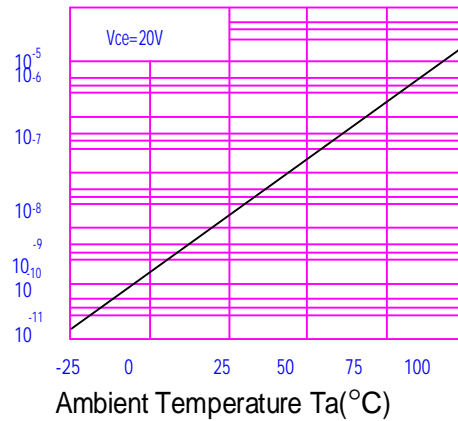


Fig.4 Forward Current vs. Ambient Temperature

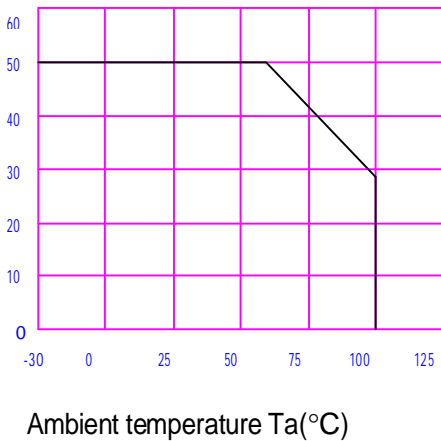


Fig.5 Forward Current vs. Forward Voltage

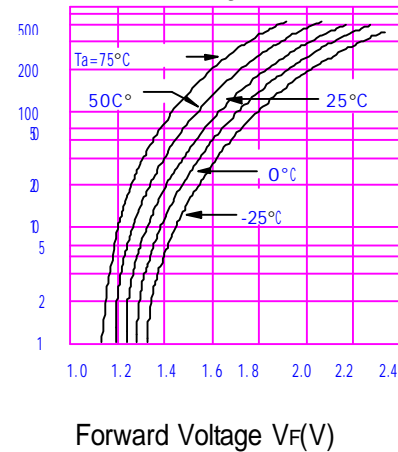
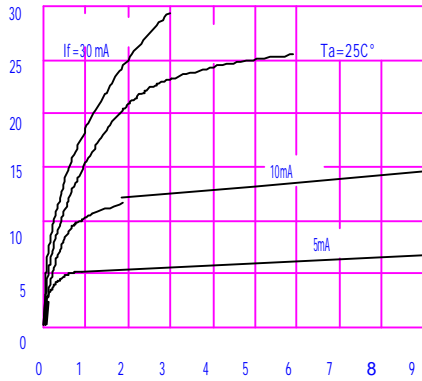


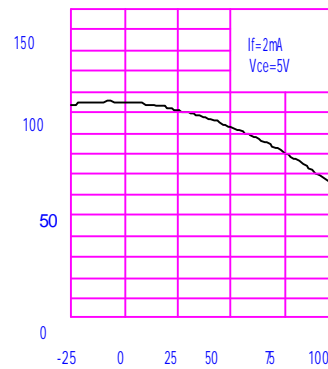
Fig.6 Collector Current vs.

Collector-emitter Voltage



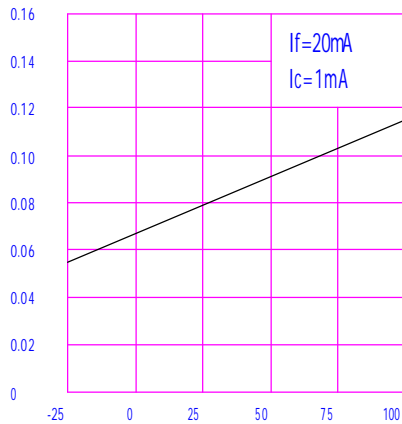
Collector-emitter Voltage  $V_{CE}$  (V)

Fig.7 Relative Current Transfer Ratio



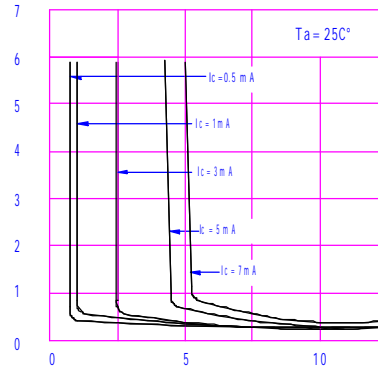
Ambient Temperature  $T_a$  (°C)

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



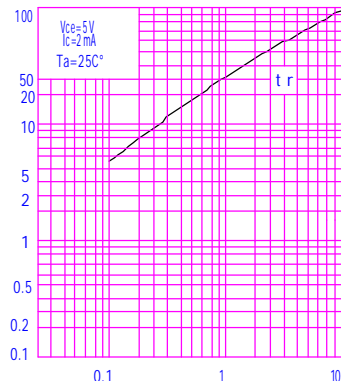
Ambient Temperature  $T_a$  (°C)

Fig.9 Collector-emitter Saturation Voltage vs. Forward Current



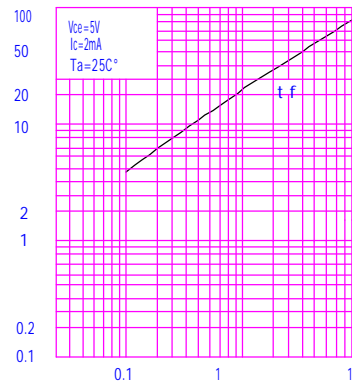
Forward Current  $I$  (mA)

Fig.10 Response Time vs. Load Resistance



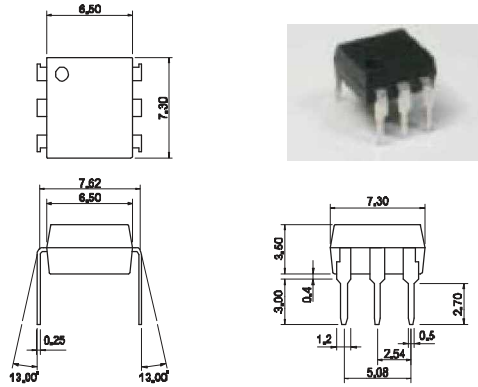
Load Resistance  $R_L$  (Kohm)

Fig.11 Response Time vs. Load Resistance



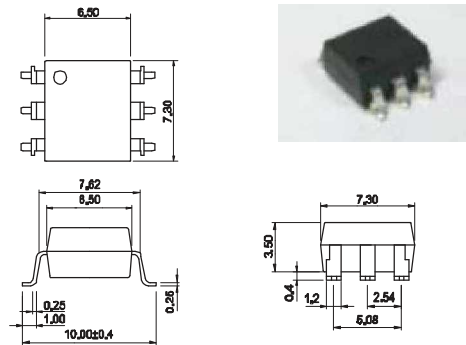
Load Resistance  $R_L$  (Kohm)

Fig.4 : 6-pin DIP type



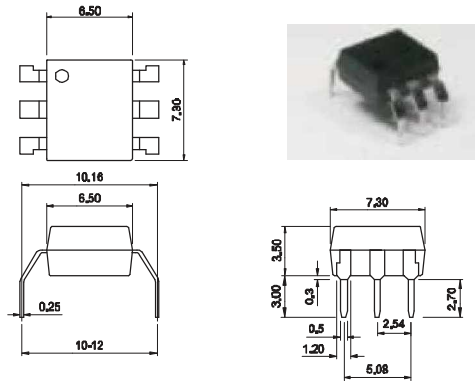
TOLERANCE :  $\pm 0.2\text{mm}$

Fig.5 : 6-pin SMD type



TOLERANCE :  $\pm 0.2\text{mm}$

Fig.6 : 6-pin G type

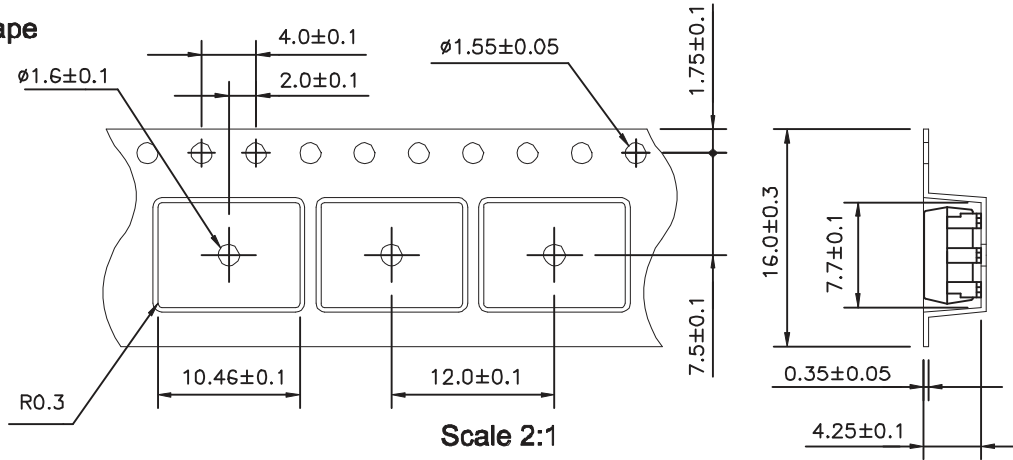


TOLERANCE :  $\pm 0.2\text{mm}$

6-pin SMD Carrier Tape & Reel

Unit:mm

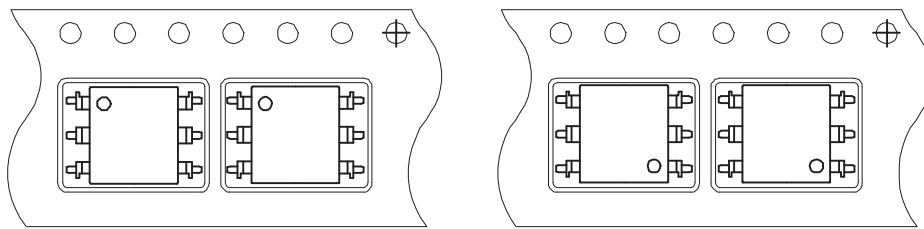
Tape



Scale 2:1

Material : PS

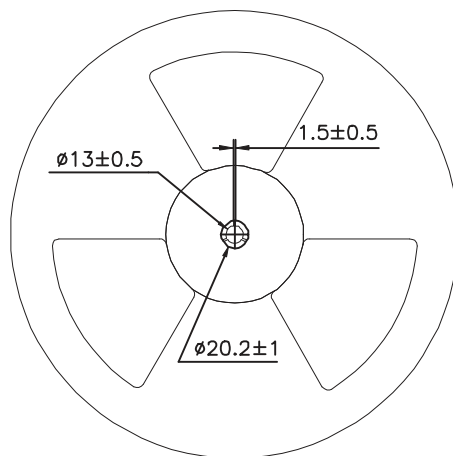
Direction



TL

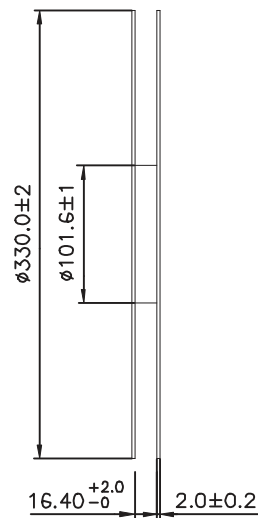
TR

Reel



Scale 1:5

Material : PVC



Packing:1000pcs/reel