● Features

1. Current transfer ratio: 50-600%(at condition IF=5mA, VCE=5V)
2. High isolation voltage between input and output (V_{ISO}=3750Vrms)
3. Compact 4 pin SSOP
4. Pb free and RoHS compliant
5. CQC approval
   UL approval
   VDE approval
   CE approval

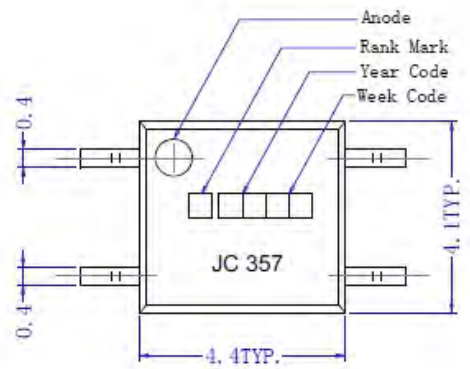
● Description

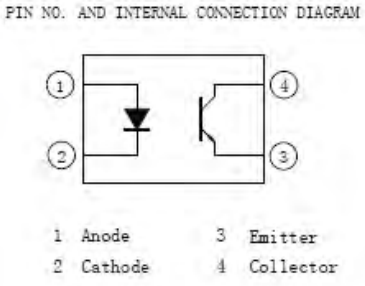
The JC357 device consist of an infrared emitting diode, optically coupled to a phototransistor detector encapsulated with green compound.
Length of lead pin: 2.54mm

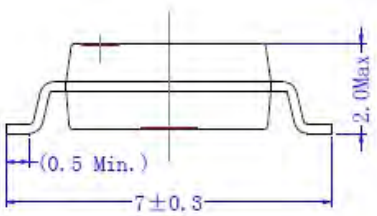
● Applications:

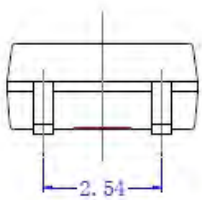
DC-DC converters
Programmable controllers
Telecommunication equipments
Single transmission between circuits of different potentials and impedances

● Dimension:









● Electrical Characteristics (Ta=25℃ unless specified other wise)

Parameter		Symbol	Condition	Min	Typ.	Max	Unit
Input	Forward Voltage	V_F	I_F=20mA	---	1.2	1.4	V
	Reverse Current	I_R	V_R=4V	---	---	10	uA
	Input Capacitance	C_t	V=0, f=1KHz	---	30	250	pF
Output	Collector-Emitter dark current	I_{CEO}	V_{CE}=20V, I_F=0	---	---	100	nA
	Collector-Emitter breakdown voltage	BV_{CEO}	I_C=0.1mA I_F=0	80	---	---	V
	Emitter-Collector breakdown voltage	BV_{ECO}	I_E=10μA I_F=0	7	---	---	V
	Collector current	I_c	I_F=5mA V_{CE}=5V	4	---	30	mA
	*2 Current transfer ratio	CTR		80	---	600	%
	Saturation voltage	$V_{CE(sat)}$	I_F=20mA I_C= 1mA	---	0.1	0.2	V
	Isolation resistor	R_{iso}	DC 500V 40~60%R.H.	5×10^{10}	---	---	Ω
	Capacitance	C_f	V=0, f=1MHz	---	0.6	1	pF
	cut-off frequency	f_c	V_{CE}=5V, I_C=2mA R_L=100Ω, -3dB	---	80	---	kHz
	Rise time	t_r	V_{CE}=2V, I_C=2mA R_L=100Ω	---	4	18	us
	Fall time	t_f		---	3	18	us

*1 : $CTR=I_C/I_F\times100\%$

● CTR range

BIN range	Min(%)	Max(%)
A	80	160
B	130	260
C	200	400
D	300	600
A or B or C or D	80	600

Test condition at:IF=5mA,VCE=5V,Ta=25℃.

● Absolute Maximum Ratings(Ta=25℃)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	Reverse voltage	V_R	6	V
	Power dissipation	P_D	70	mW
Output	Collector-Emitter breakdown voltage	V_{CEO}	80	V
	Emitter-Collector breakdown 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}	3750	Vrms
Operating temperature		T_{opr}	-55 to + 110	℃
Storage temperature		T_{stg}	-55 to + 125	
*2 Soldering temperature		Tsol	260	

Notes:

1. AC for one minute, R.H.=40~60%.
   Test methods:
   1);In this test, pins 1&2 are shorted together, and pins 3&4 are shorted together.
   2);For 10 seconds.

● Typicalperformancecurves:

Figure 1. Forward Current vs Forward Voltage

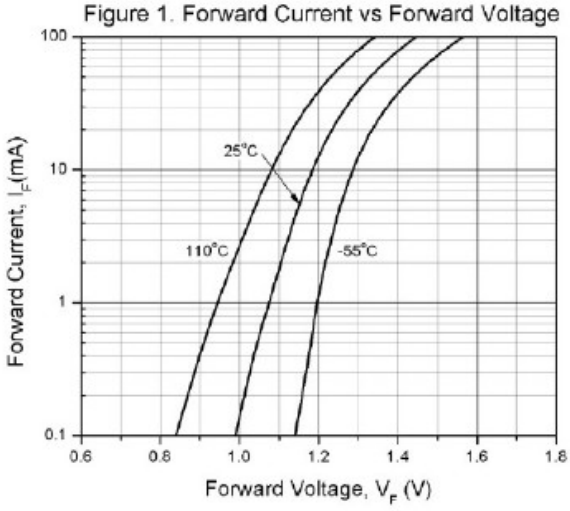
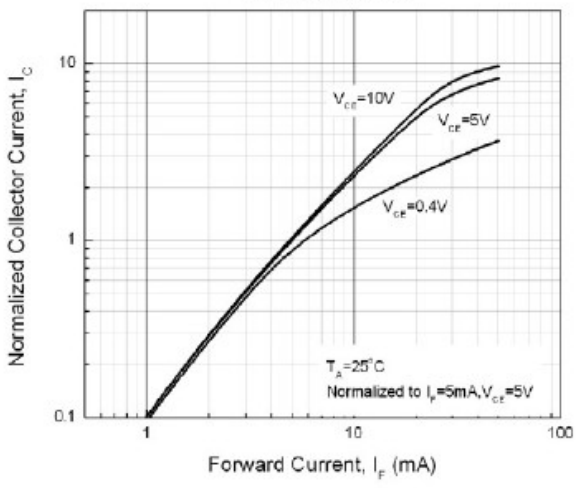


Figure 2. Normalized Collector Current vs Forward Current



- Typical performance curves:

Figure 3. Normalized Current Transfer Ratio vs Forward Current

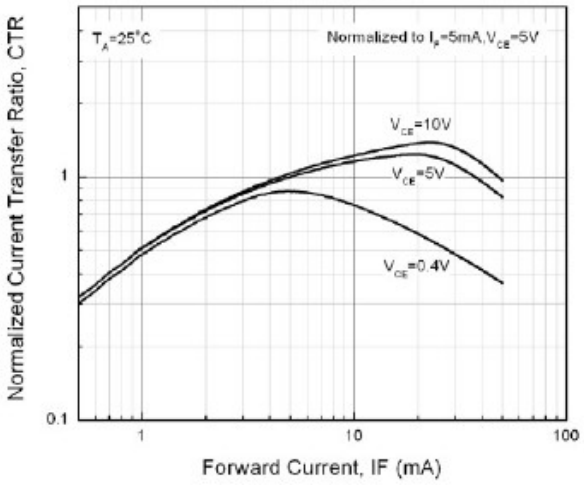


Figure 4. Normalized Collector Current vs Ambient Temperature

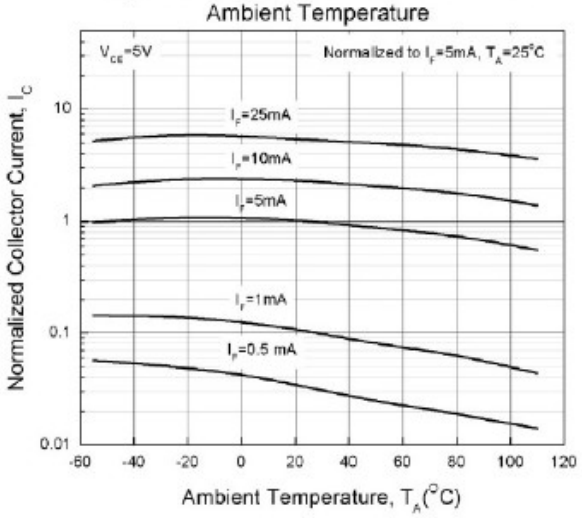


Figure 5. Collector Current vs Collector-Emitter Voltage

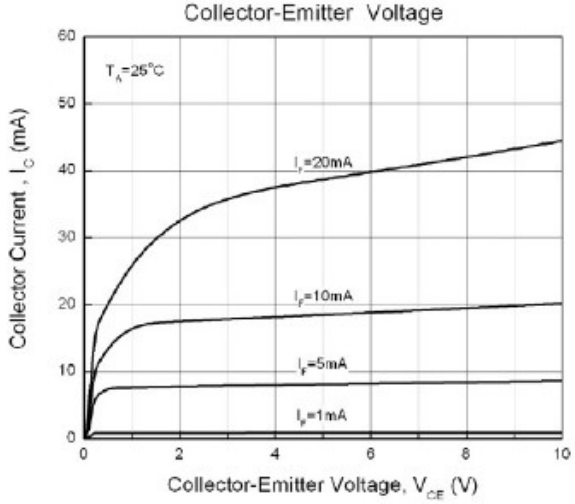


Figure 6. Collector Current vs Collector-Emitter Voltage

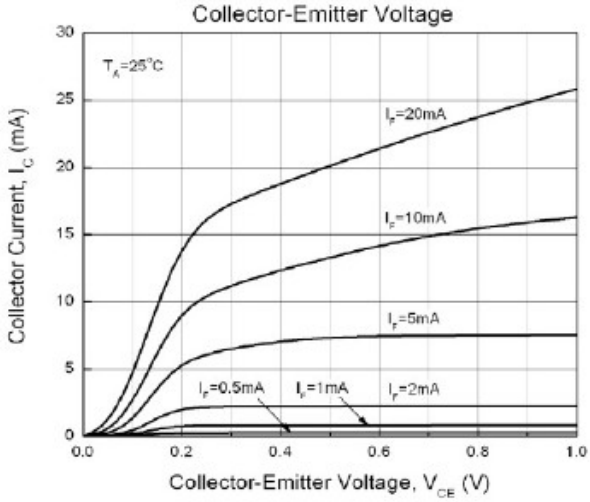


Figure 7. Collector Dark Current vs Ambient Temperature

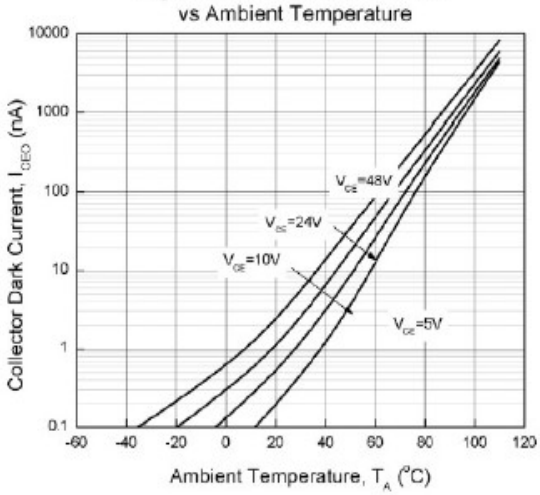
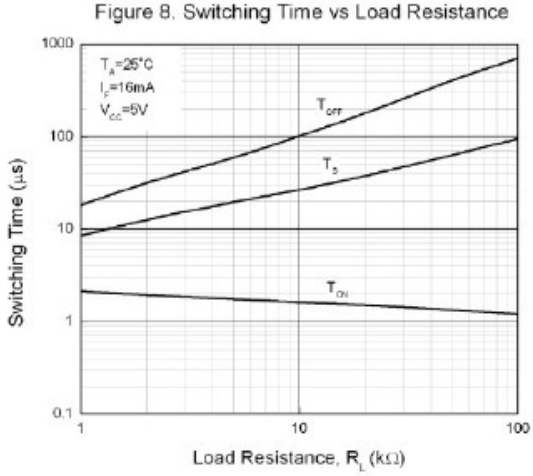
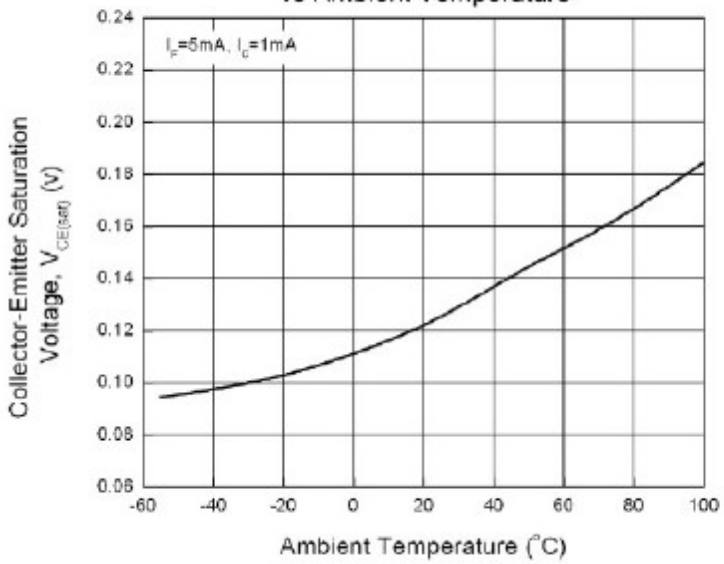


Figure 8. Switching Time vs Load Resistance

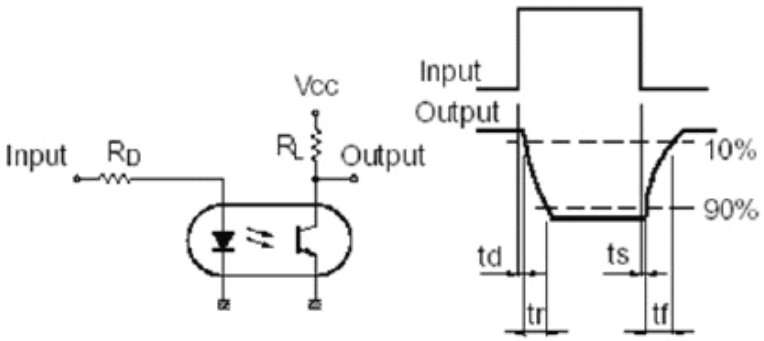


- Typical performance curves:

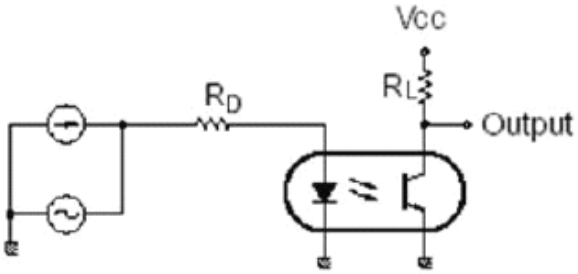
Figure 9. Collector-Emitter Saturation Voltage vs Ambient Temperature



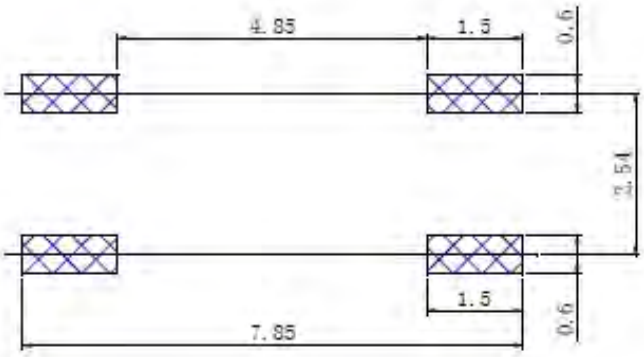
Test Circuit for Response Time



Test Circuit for Frequency Response

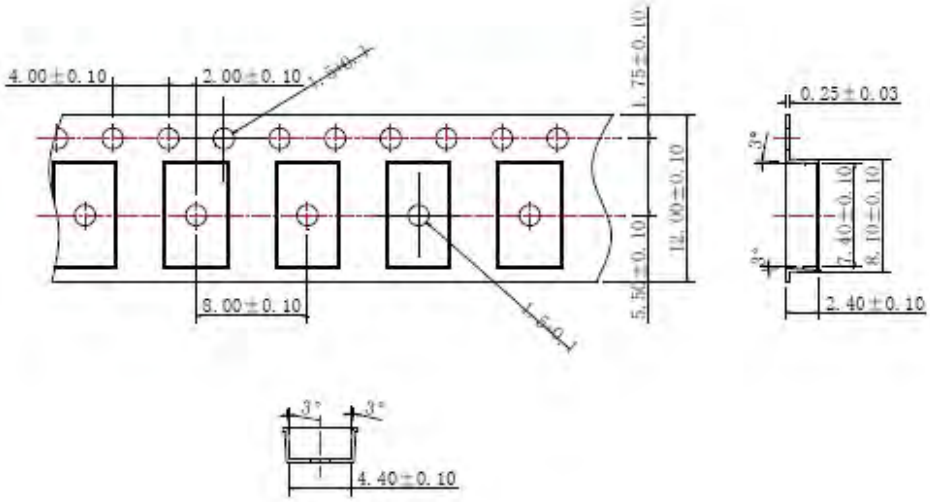


● Installation and dimension recommendation:



● Packaging

A. Tape & Reel Packing Specifications:



B. Tape dimensions: 1KP/Reel