

**JOCT357Xh-M4 Series**

Rev.A.1.0

The products are transistor opto-couplers in a plastic SOP4 package. The device combines an AlGaAs infrared emitting diode as the emitter which is optically coupled to a silicon planar phototransistor detector. With the robust coplanar double mold structure, the device provides the most stable isolation feature. The products are widely used in switch mode power supplies, programmable controllers, household appliances and office equipment.

High isolation 3750 VRMS

Operating temperature range -40°C to 125°C

RoHS & REACH Compliance

HBM: H3A; MM: M4; CDM:C3

CQC approved

VDE approved

UL approved

AECQ101 approved

(Temperature=25°C)

Parameter		Symbol	Value	Unit
Input	Forward Current	I _F	50	mA
	Peak Forward Current	I _{FP}	1 ^①	A
	Reverse Voltage	V _R	6	V
	Power Dissipation	P _D	75	mW
Output	Collector-emitter Voltage	V _{CEO}	80	V
	Emitter-collector Voltage	V _{ECO}	7	V
	Collector Current	I _C	50	mA
	Power Dissipation	P _C	150	mW
Total Power Dissipation		P _{tot}	225	mW
Isolation Voltage		V _{iso}	3750 ^②	Vrms
Operating Temperature		T _{opr}	-40~+125	°C
Junction Temperature		T _j	135	°C

Storage Temperature	T _{stg}	-55~+125	°C
Soldering Temperature	T _{sol}	260	°C

: 100μs pulse, 100Hz frequency

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

(Temperature=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V _F	I _F =10mA	-	1.2	1.5	V
	Reverse Current	I _R	V _R =6V	-	-	1	μA
	Terminal Capacitance	C _t	V=0, f=1MHz	-	10	-	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 =0.1mA I _F =0	7	-	-	V
Transfer Characteristics	Current transfer ratio	CTR	I _F =5mA V _{CE} =5V	80	-	600	%
	Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _F =20mA I _C =1mA	-	0.06	0.2	V
	Isolation resistance	R _{IO}	DC500V 40~60%R.H.	10 ¹²	10 ¹⁴	-	Ω
	Floating Capacitance	C _{IO}	V=0, f=1MHz	-	0.4	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	-	3	18	μs
	Fall Time	t _f		-	4	18	μs
	Response Time	t _{on}		-	6	25	μs
		t _{off}		-	5	25	μs

: Rank Table of Current Transfer Ratio (Temperature=25°C)

Grade Sign	Min. (%)	Max. (%)
None	80	600
A	80	160
B	130	260
C	200	400
D	300	600
E	400	600
Q	100	200

J	OC	T	357	B	h	-M4	/
JieJie Microelectronics Co., Ltd.	Opto Coupler	Transistor	Marketization Model	CTR Rank:A/B/C/D/None	h: Automotive grade	SOP4	None:T1 R:T2

None/R	3000 Units/Reel



JOCT357Xh

FIG.7: Normalized Current Transfer Ratio vs. Ambient Temperature

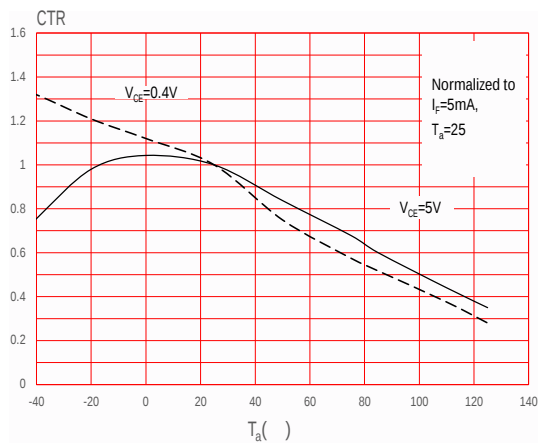


FIG.8: Normalized Collector-emitter Saturation Voltage vs. Ambient Temperature

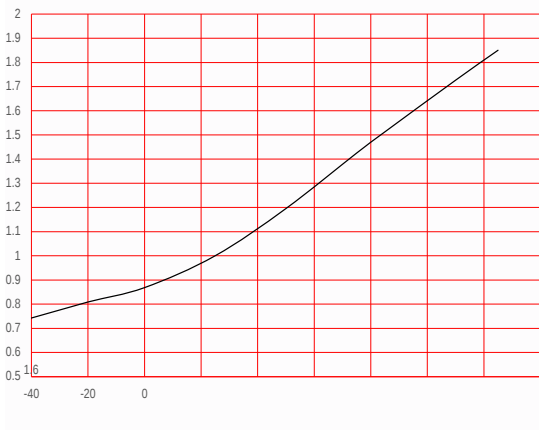


FIG.11: Test Circuits of Response Time

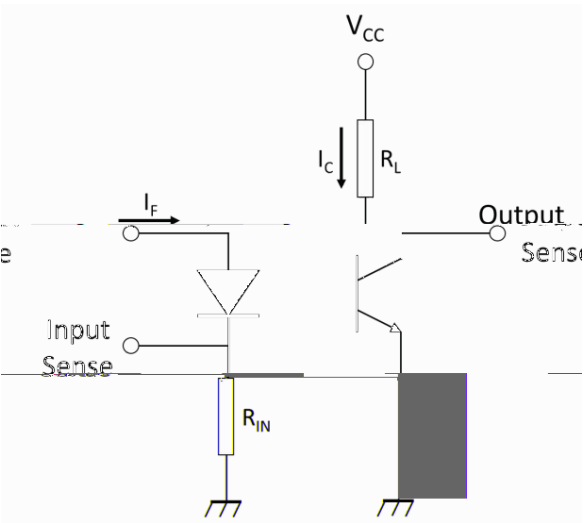


FIG.12: Curves of Response Time

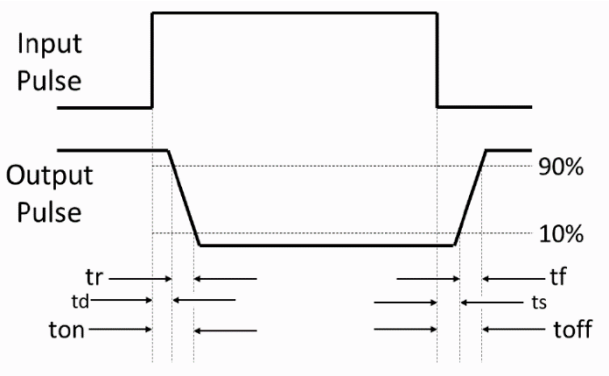
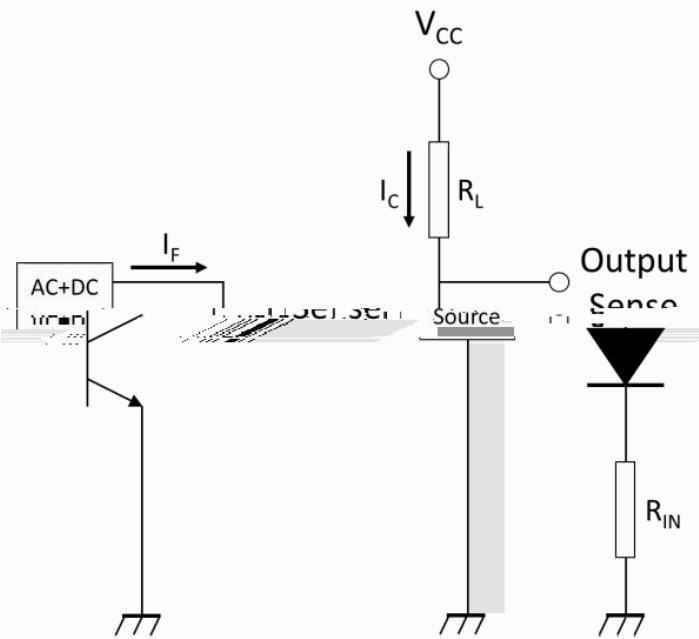
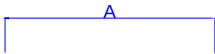
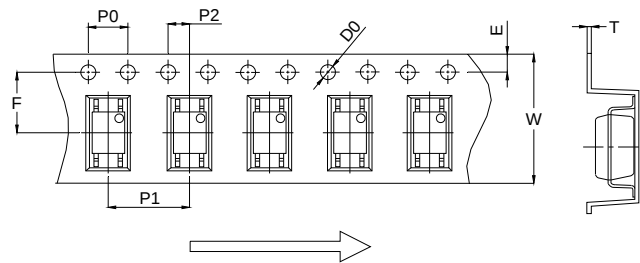


FIG.13: Test Circuits of Frequency Response



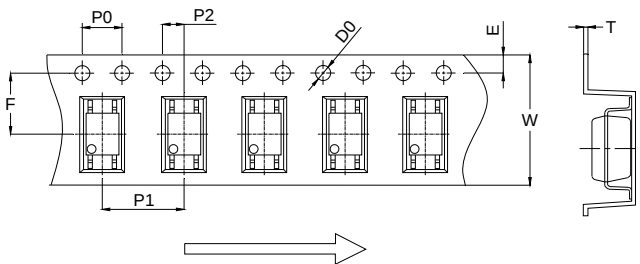


Option None

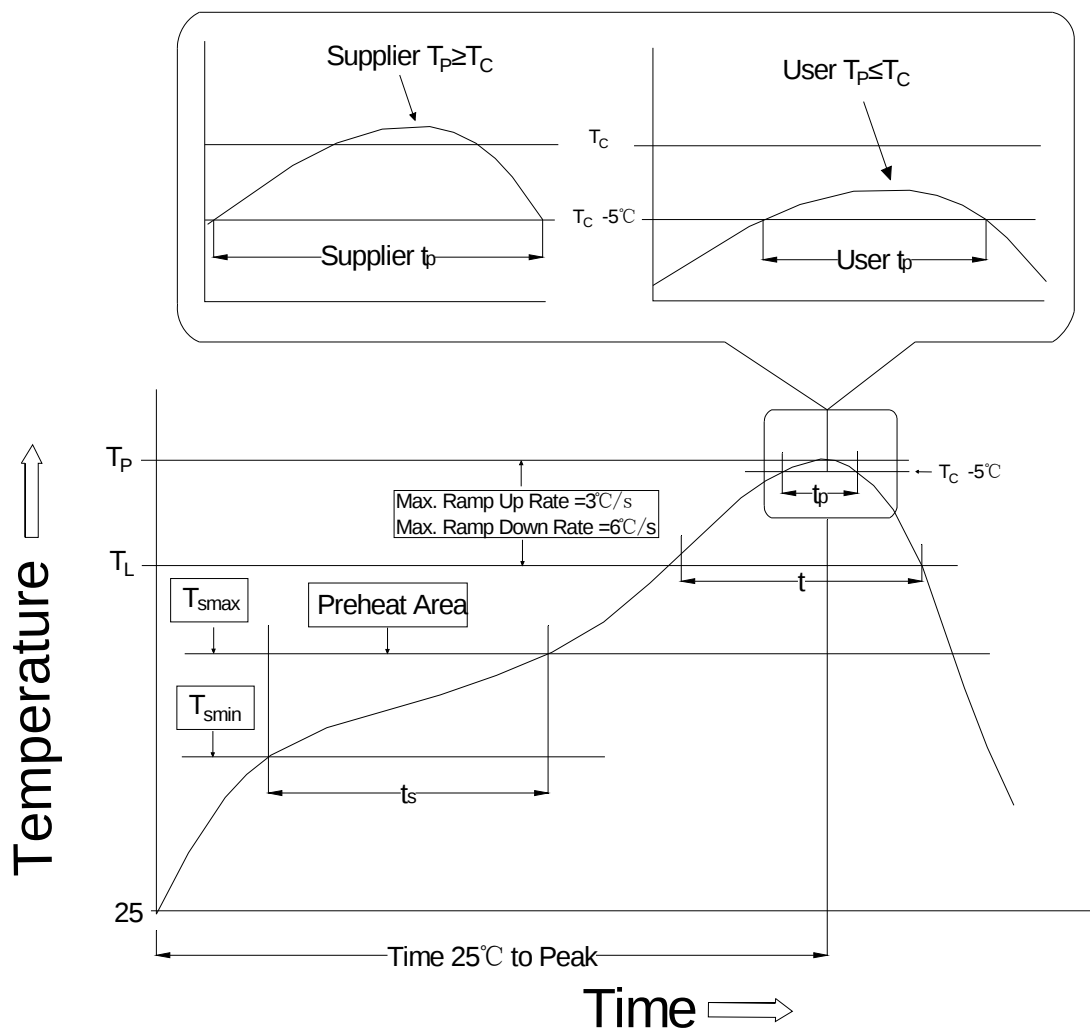


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	4.40	4.50	4.60	0.173	0.177	0.181
T	0.25	0.30	0.35	0.010	0.012	0.014
W	11.90	12.00	12.30	0.469	0.472	0.484

Option R



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	4.40	4.50	4.60	0.173	0.177	0.181
T	0.25	0.30	0.35	0.010	0.012	0.014
W	11.90	12.00	12.30	0.469	0.472	0.484



Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	100	150°C
Temperature Max. (T _{smax})	150	200°C
Time (t _s) from (T _{smin} to T _{smax})	60-120 seconds	60-120 seconds
Ramp-up Rate (t _L to t _P)	3°C/second max.	3°C/second max.
Liquidus Temperature (T _L)	183°C	217°C
Time (t _L) Maintained Above (T _L)	60-150 seconds	60-150 seconds
Peak Body Package Temperature	235°C+0°C/-5°C	260°C+0°C/-5°C
Time (t _P) within 5°C of 260°C	20 seconds	30 seconds
Ramp-down Rate (T _P to T _L)	6°C/second max.	6°C/second max.
Time 25°C to Peak Temperature	6 minutes max.	8 minutes max.

Note:

1. Reflow soldering is recommended at the temperatures and times shown, no more than three times.
2. Avoid direct contact between the epoxy body and any tools or surfaces exceeding its maximum storage temperature.
3. Application of pressure on the epoxy body is prohibited at elevated temperatures. In specific scenarios, any applied force must not exceed 2.5N.
4. Ensure the component has cooled to ambient temperature before proceeding with any subsequent manufacturing steps.
5. The component has a shelf life of one year when stored under standard conditions.
6. Recommend storage Temp.: 0~40°C;
Recommend storage humidity: <60%;
MSL level: MSL 1

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