JOCT357Xh-M4 Series

Rev.A.1.0

DESCRIPTION:

The products are transistor opto-couplers in a plastic SOP4 package. The device combines an AlGaAs inf diodeas the T Mtter which is optically coupl nar phototransistor detector. WMth the robust coplanar double mol structure, the Tevice provides the most stable isolation feature. The products are widely us switch mode power supplies, program Qble controllers, hous equipment.

MQIN FEATURES

High isolation 3750 VRMS
Operating tem eratue ran Þ l M l' Ţ Ů ₴ ⊁ m A M ž Ǝ ƚ ₴ ⊁
RoHSM& REACH Compliance
HBM: H3A; MM: M4; CDM:C3
CQCMapprovb
VDEMapprovb
UL approvb
AECQ101 approvb

QBSOLUTE MQXIMUM MRATINGS (Tem erature=25°C)

Parameter		Symbol	Value	UnitM
Inpuu	Forward Current	I_F	50	mA
	Peak Forward Current	I_{FP}	1	A
	Reverse Volta Þ l	V_R	6	V
	Power Dissi ation	P_D	75	mW
Ouu ɔ φ φ	Collecu A D l' l ⊀ iu m l D M ϟ olta Þ l	I_{CEO}	V 80	V
	Em tter-collecu A D M ϟ olta Þ l	I_{ECO}	V 7	V
	Collecu A D M ⊁ φ D rent	I_C	50	mA
	Power Dissi ation	P_C	150	mW
Tou p		$P_{u A t}$	225	mW
Isolation Volta Þ l		V_{iso}	3750	Vrms
O erating Tem erature		$T_{o r}$	-40~+125	
Juncu ʊ A ɔ MTem erature		T_j	135	

Storage Temperature	T_{stg}	-55~+125	
Soldering Temperature	T_{sol}	260	

NOTE1: 100μs pulse, 100Hz frequency **NOTE2**: AC for 1minute, R.H.=40~60%

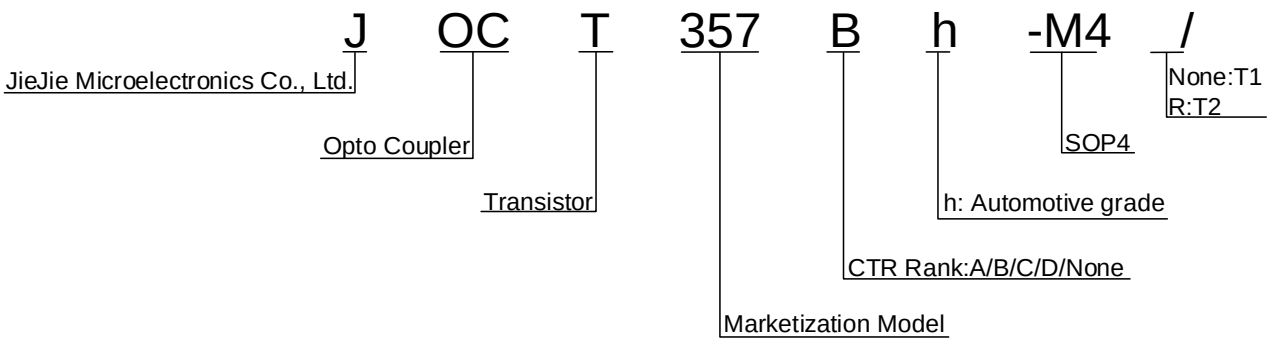
ELECTRICAL CHARACTERISTICS (Temperature=25°C)

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

NOTE1: Rank Table of Current Transfer Ratio (Temperature=25℃)

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

ORDERING INFORMATION



Packing Quantity	
Option	**Quantity**
None/R	3000 Units/Reel

MARKING

JOCT357Xh

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

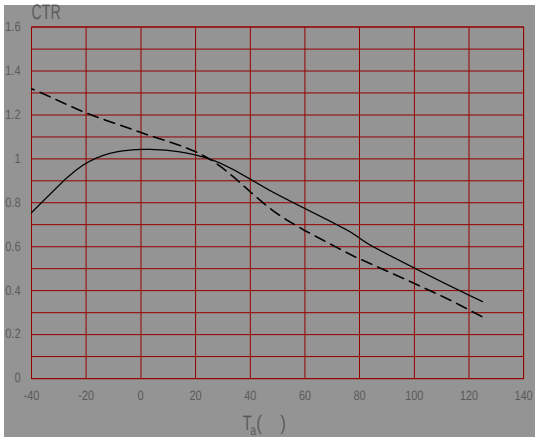


FIG.8: Normalized Collector-emitter Saturation Voltage vs. Ambient Temperature

Test Circuits

FIG.11: Test Circuits of Response Time

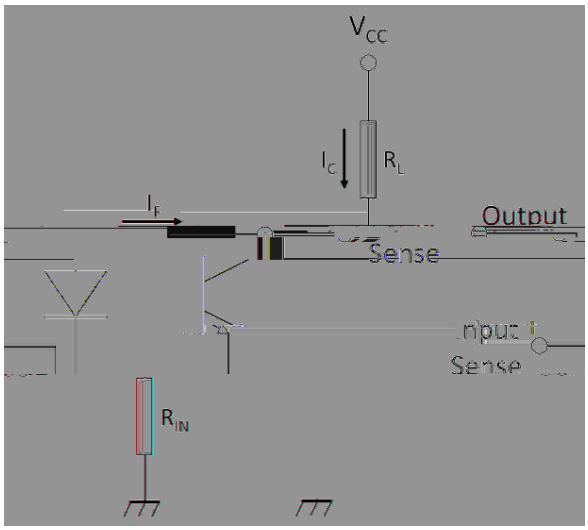


FIG.12: Curves of Response Time

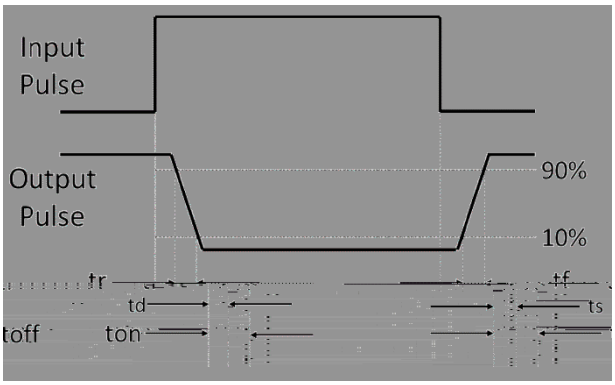
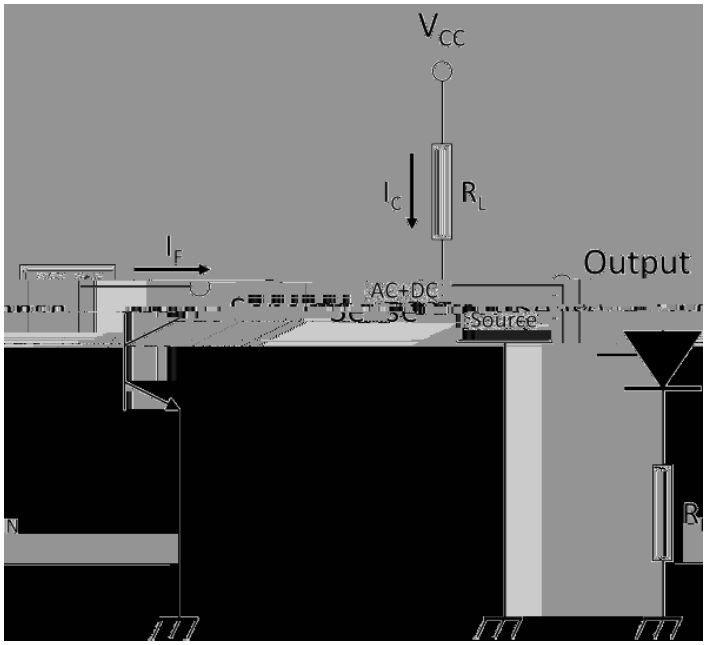
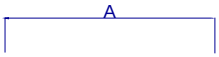


FIG.13: Test Circuits of Frequency Response



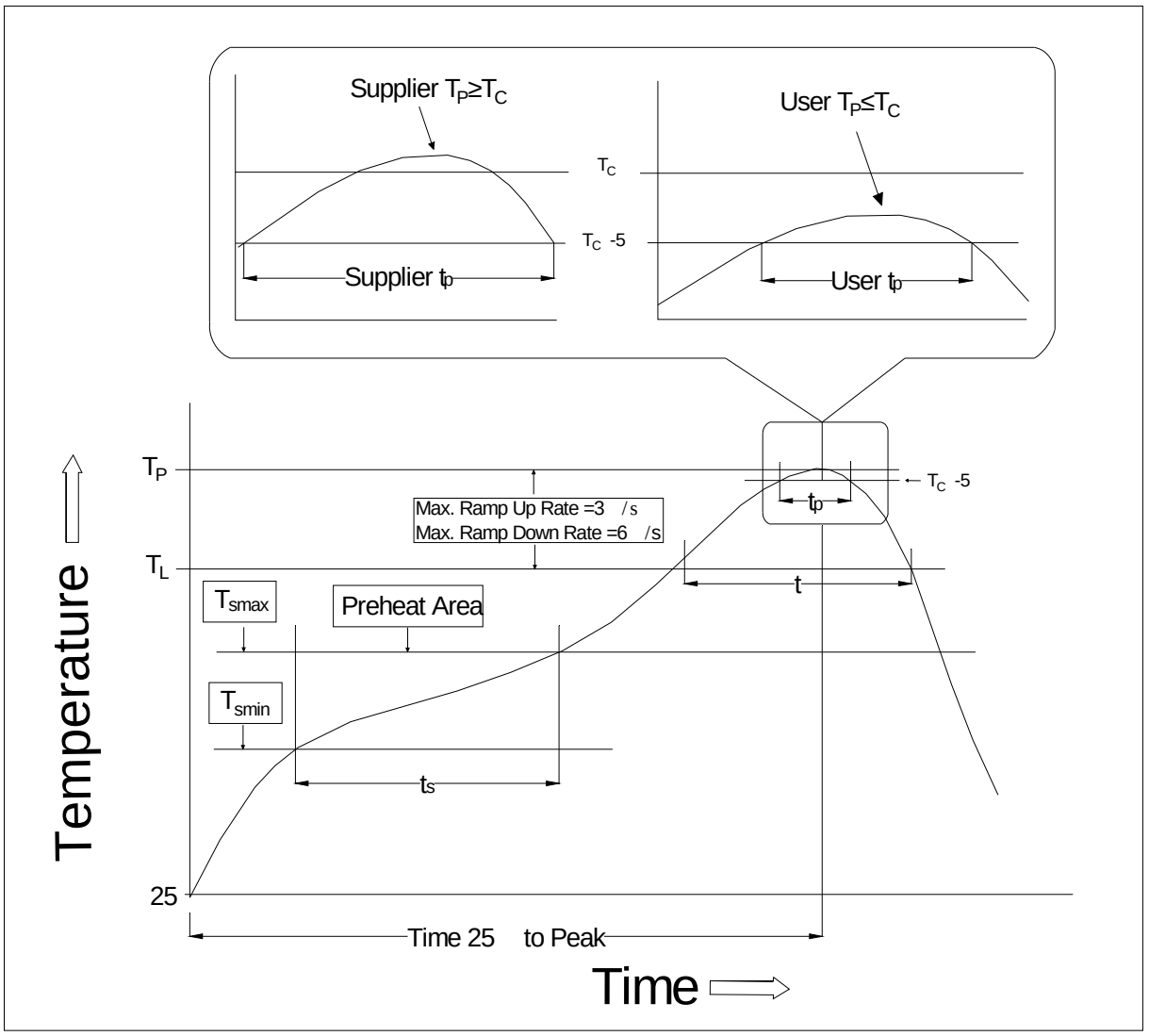
Package Dimension (Unit: mm)



CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option None

REFLOW INFORMATION



Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	100	150
Temperature Max. (Tsmax)	150	200
Time (ts) from (Tsmin to Tsmax)	60-120 seconds	60-120 seconds
Ramp-up Rate (tL to tP)	3 /second max.	3 /second max.
Liquidus Temperature (TL)	183	217
Time (tL) Maintained Above (TL)	60-150 seconds	60-150 seconds
Peak Body Package Temperature	235 +0 /-5	260 +0 /-5

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