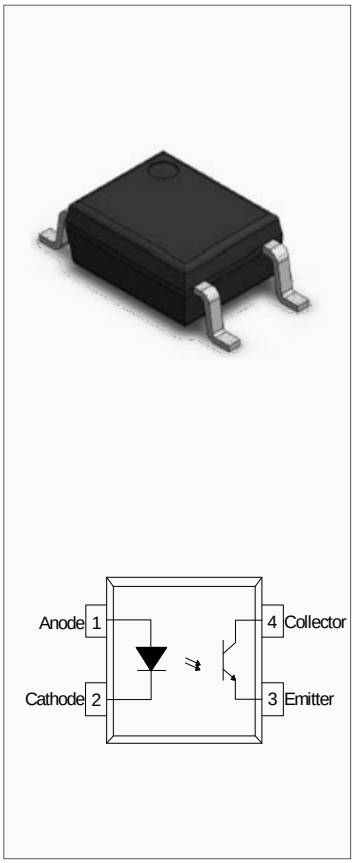
DESCRIPTION:

The products are transistor opto-couplers in a plastic SOP4 package. The device combines an AlGaAs infrared emitting diodeas 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.



MAIN FEATURES

High isolation 3750 VRMS
Operating temperature range -55°C to 125°C
RoHS & REACH Compliance
HBM: H3A; MM: M4; CDM:C3
CQC approved
VDE approved
UL approved
AECQ101 approved

ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

Input	Forward Current	I_F	50	mA
	Peak Forward Current	I_{FP}	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	Vrms
Operating Temperature		T_{opr}	-55~+125	
Junction Temperature		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%

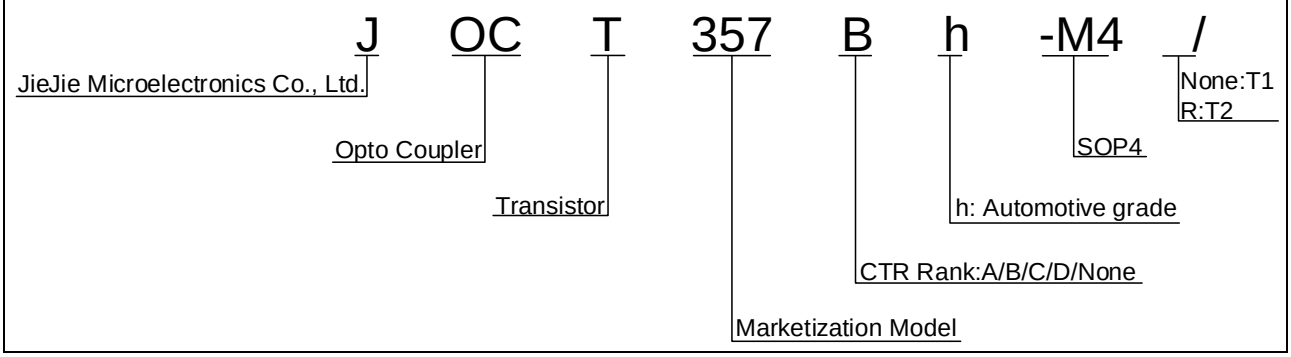
ELECTRICAL CHARACTERISTICS (Temperature=25°C)

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°C)

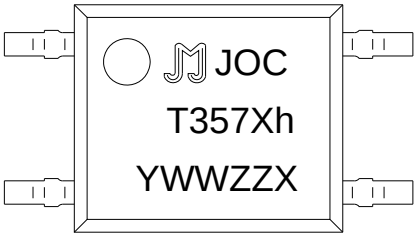
None	80	600
A	80	160
B	130	260
C	200	400
D	300	600
E	400	600
Q	100	200

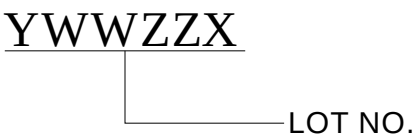
ORDERING INFORMATION



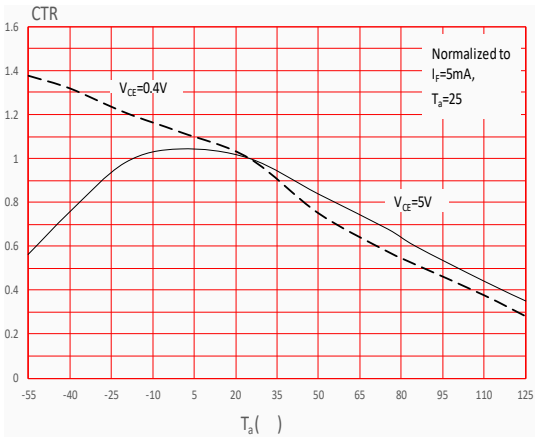
Packing Quantity	
Option	**Quantity**
None/R	3000 Units/Reel

MARKING

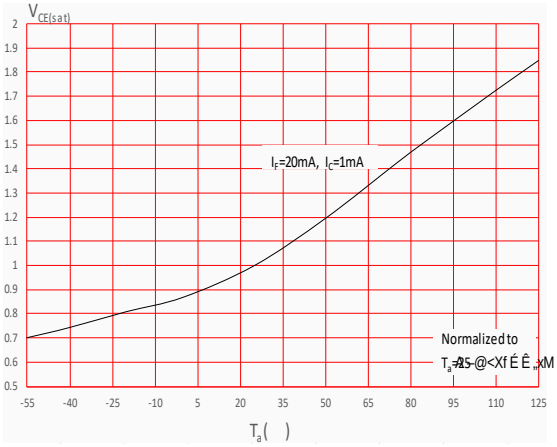




Normalized Current Transfer Ratio vs. Ambient Temperature

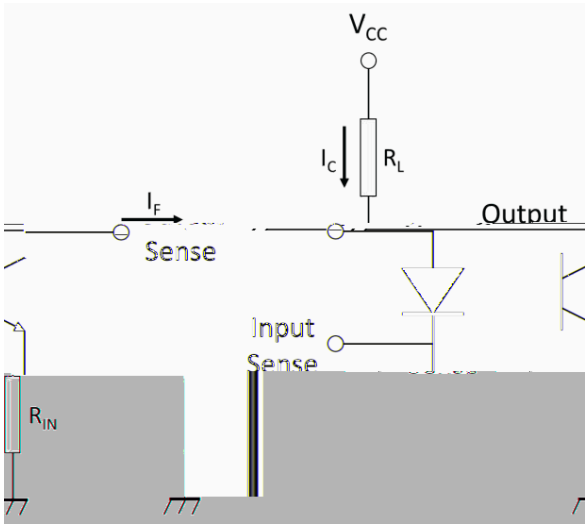


Normalized Collector-emitter Saturation Voltage vs. Ambient Temperature

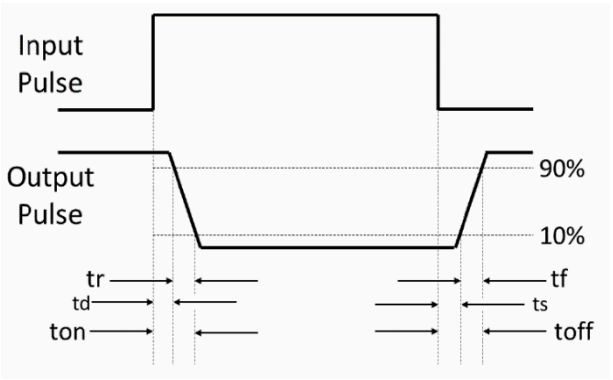


Test Circuits

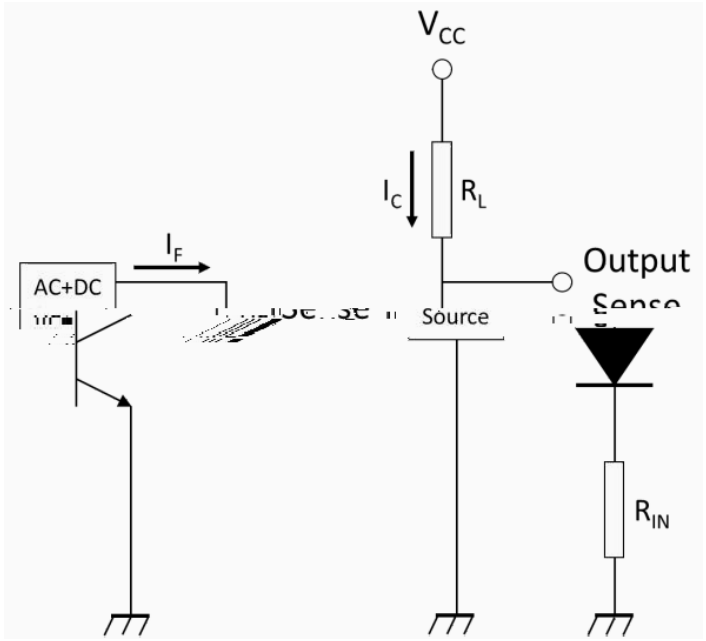
Test Circuits of Response Time



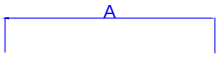
Curves of Response Time



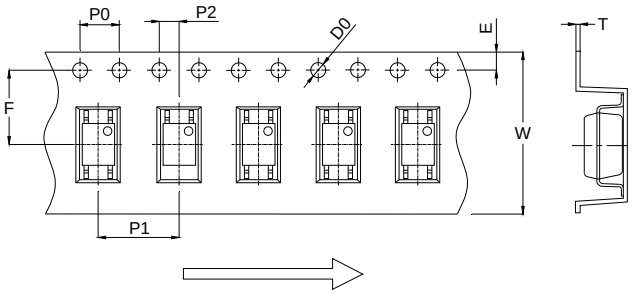
Test Circuits of Frequency Response



Package Dimension (Unit: mm)

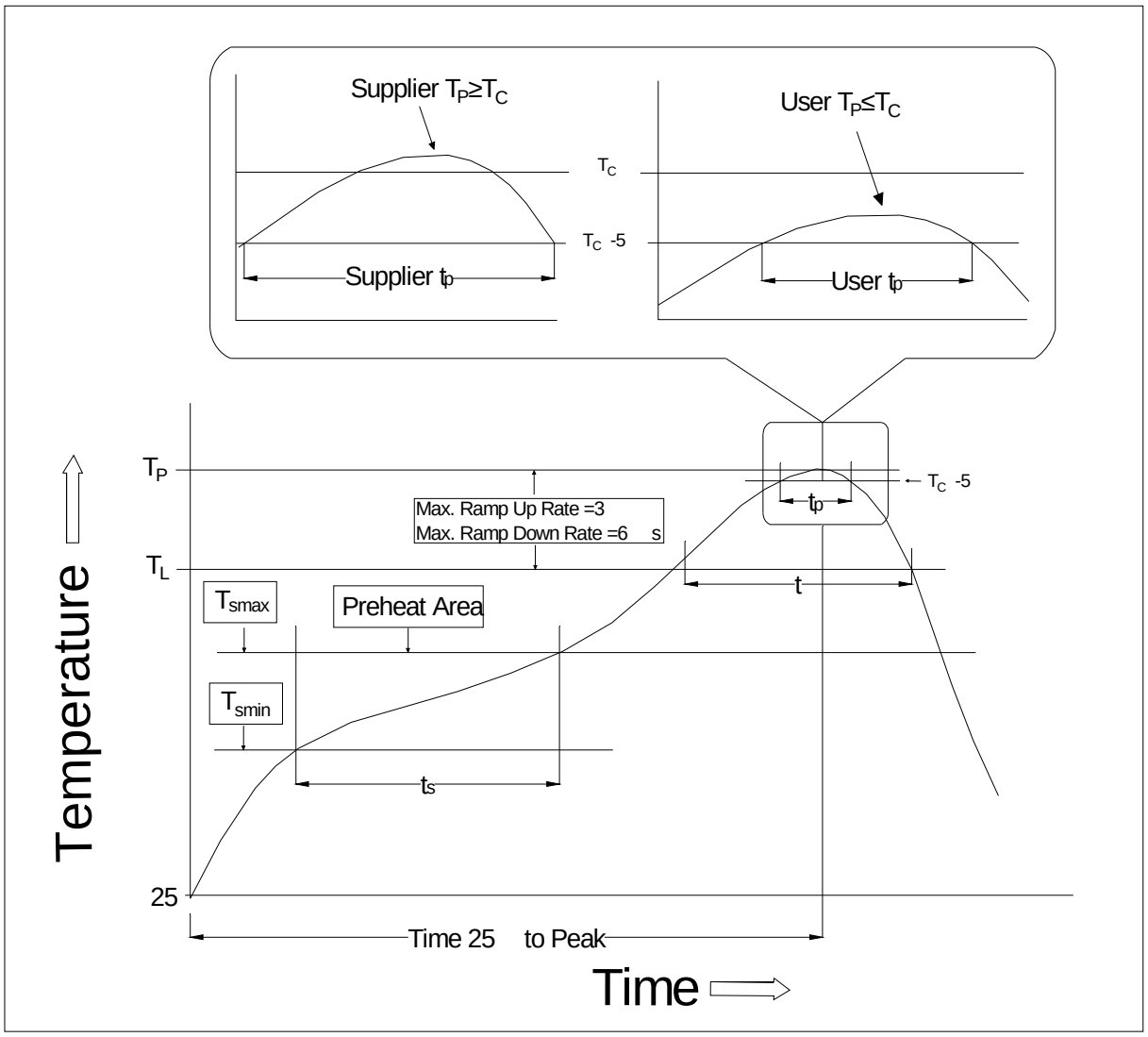


CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0			1.60			0.063
P0	3 Ṙ		È		ξ سم	
P1						
P2						
E						
F						
T						
W						

REFLOW INFORMATION



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
Time (tP) within 5 of 260	20 seconds	30 seconds
Ramp-down Rate (TP to TL)	6 /second max.	6 /second max.
Time 25 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