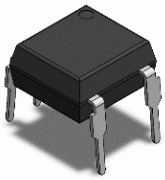
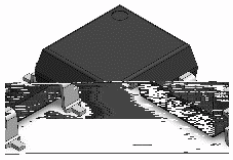
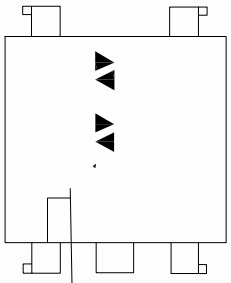
DESCRIPTION:

The products are 5-pin solid-state relay opto-couplers. The device combines an AlGaAs infrared emitting diode as the emitter which is optically coupled to a monolithic silicon random-phase photo triac to drive a power triac in a plastic DIP5 package with different lead forming options. The products are widely used in solenoid/valve controls, lighting controls, motor controls, temperature controls, static AC power switches, solid state relays, interfacing microprocessors to 265 V_{AC} peripherals.







MAIN FEATURES:

High isolation 5000 Vrms
DC input with triac output
Operating temperature range - 40°C to 110 °C
REACH & RoHS compliance
HBM: H3B; MM: M4; CDM: C3
CQC approved
VDE approved
UL 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	Repetitive peak off-state voltage	V_{DRM}	600	V
	Repetitive peak reverse voltage	V_{RRM}	600	V
	Critical rate of rise of on-state current	dI/dt	100	A/μs
	On-state RMS Current (T_a≤43)	$I_{T(RMS)}$	0.6	A
	Non repetitive surge peak on-state current (full cycle , t_p=20ms)	I_{TSM}	6	A
	junction to case (AC)	$R_{th(j-c)}$	65	/W

Isolation Voltage	V_{iso}	5000	Vrms
Operating Temperature	T_{opr}	-40~110	
Junction Temperature	T_j	125	
Storage Temperature	T_{stg}	-40~125	
Soldering Temperature	T_{sol}	260	
Peak pulse voltage (T_j=25 ; non-repetitive,off-state)	V_{pp}	3	kV

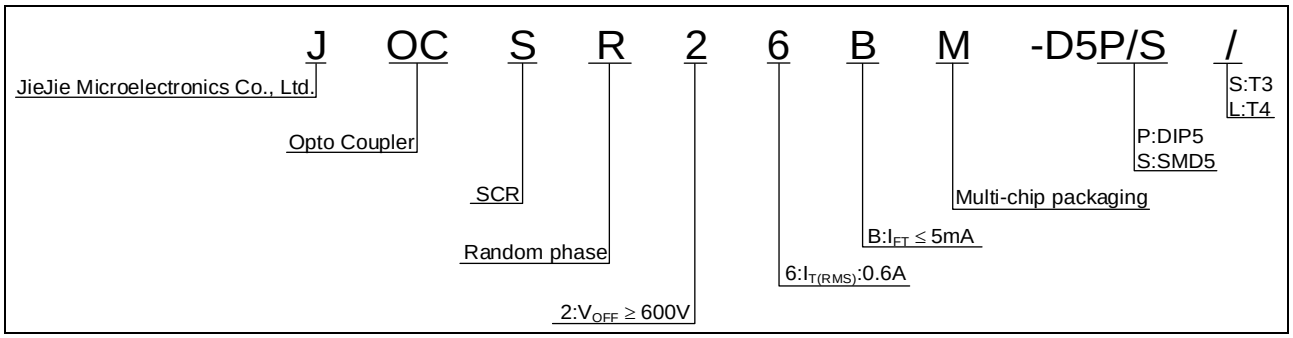
NOTE1:

NOTE2:

ELECTRICAL CHARACTERISTICS (Temperature=25°C)

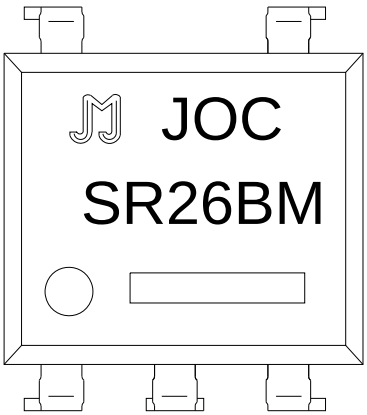
Input	Forward Voltage	V_F	I_F=10mA	-	1.2	1.5	V
	Reverse Current	I_R	V_R=6V	-	-	1	μA
Output	Peak Off-state Current, Either Direction	I_{DRM}	V_{DRM} / V_{RRM} =600V, I_F=0	-	-	5	μA
		I_{RRM}		-	-	5	
	Peak On-state Voltage, Either Direction	V_{TM}	I_{TM}= I_{TM} Rated	-	-	1.7	V
	Critical Rate of Rise of Off-state voltage	dV/dt	V_D=400V, Gate Open I_F=0, T_j=125	1000	-	-	V/μs
	Critical Rate of Rise of Commutating Voltage	(dV/dt)c	(dI/dt)c =1.5A/ms, T_j=125	10	-	-	V/μs
Transfer Characteristics	LED Trigger Current	I_{FT}	Terminal Voltage=6V R_L=100Ω	-	-	5	mA
	Holding Current	I_H	V_D=6V	-	-	25	mA
	Isolation Resistance	R_{ISO}	DC500V 40~60%R.H.	10^{12}	10^{14}	-	Ω
	Response Time	t_{on}	V_D=6V, R_L=100Ω, I_F=20mA	-	20	100	μs

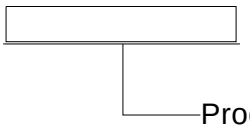
ORDERING INFORMATION



Packing Quantity			
Option	**Quantity**	**Quantity – Inner box**	**Quantity –Outer box**

MARKING

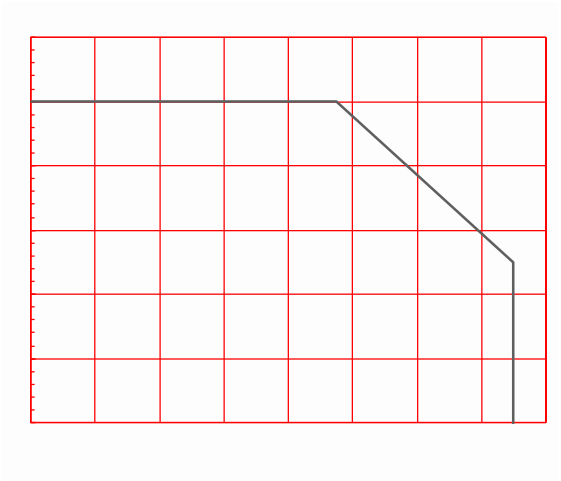




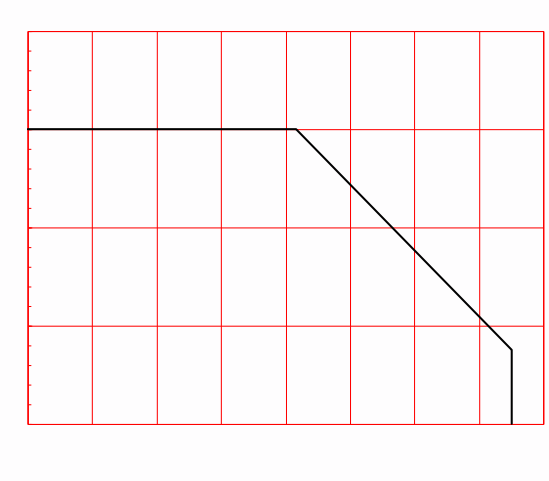
Production Information Code

Characteristics Curves

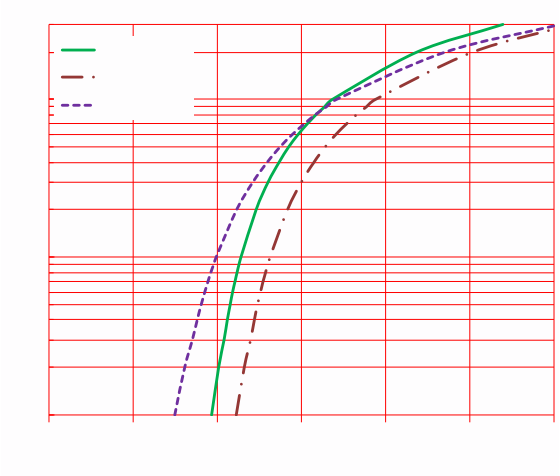
Max. Allowable LED Forward Current vs. Ambient Temperature



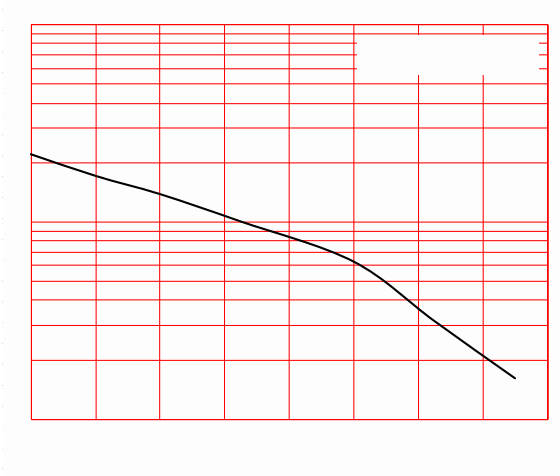
On-state Terminal Current vs. Ambient Temperature



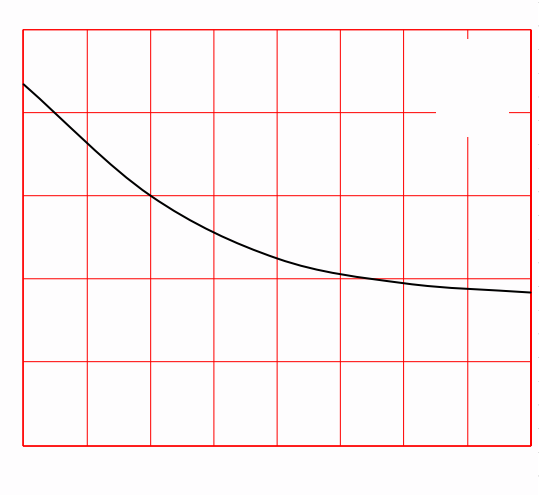
On-state characteristics



Normalized Holding Current vs. Ambient Temperature

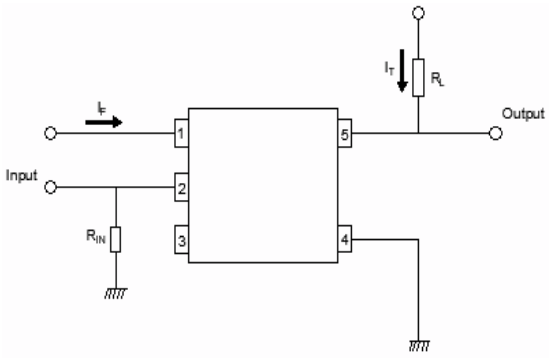


Turn On Time vs. Forward Current

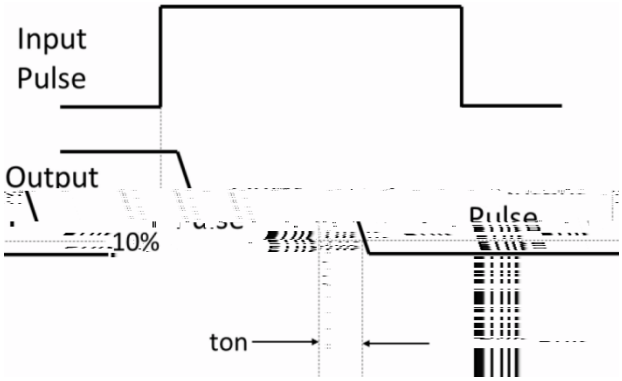


TEST CIRCUITS

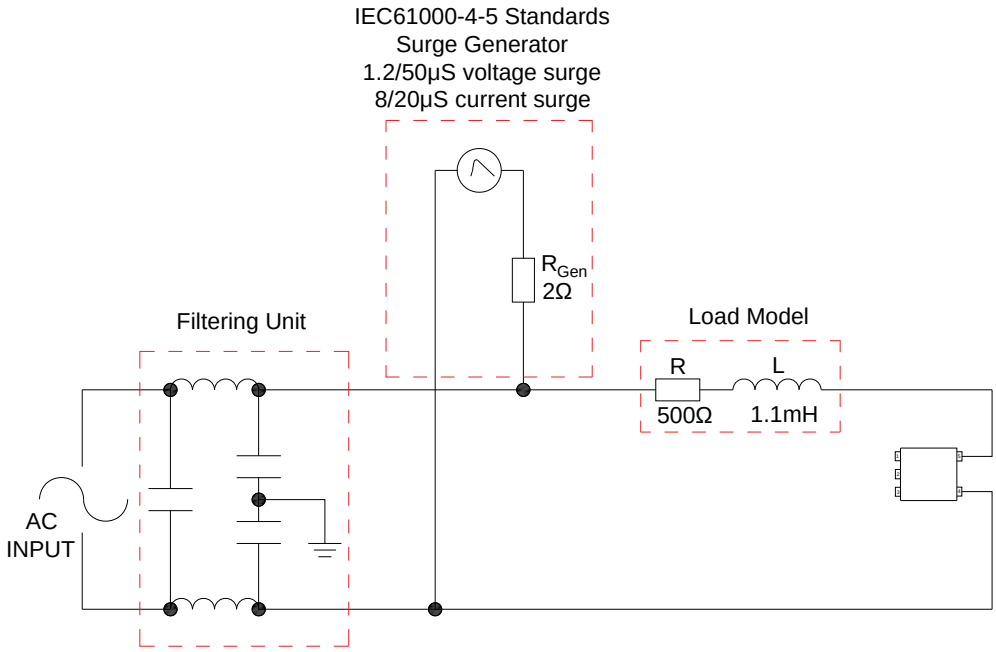
Test Circuits of Turn On Time



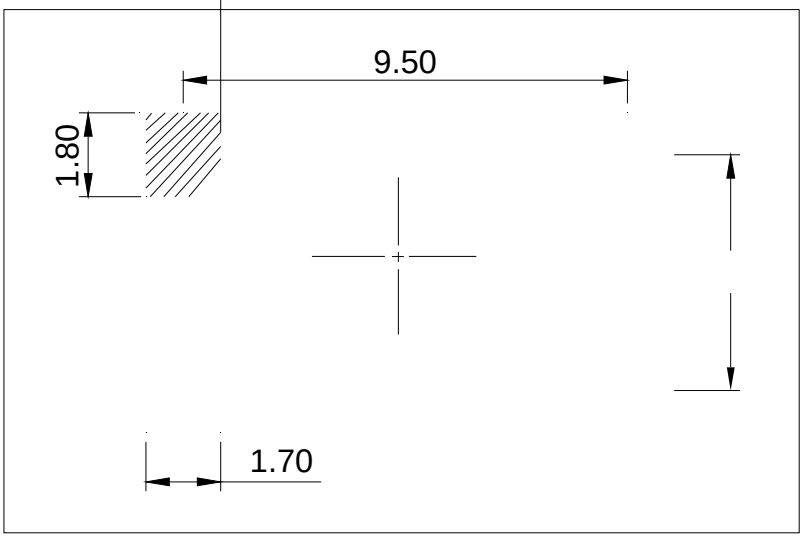
Waveforms of Turn On Time



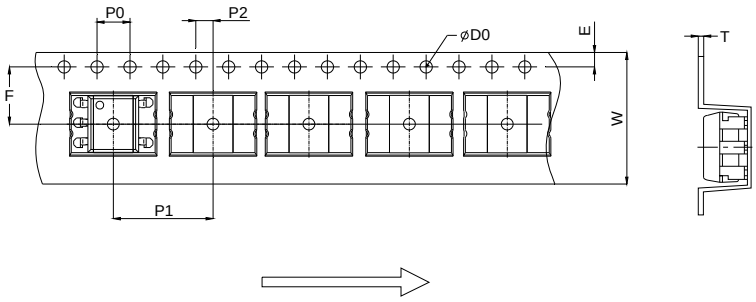
Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)

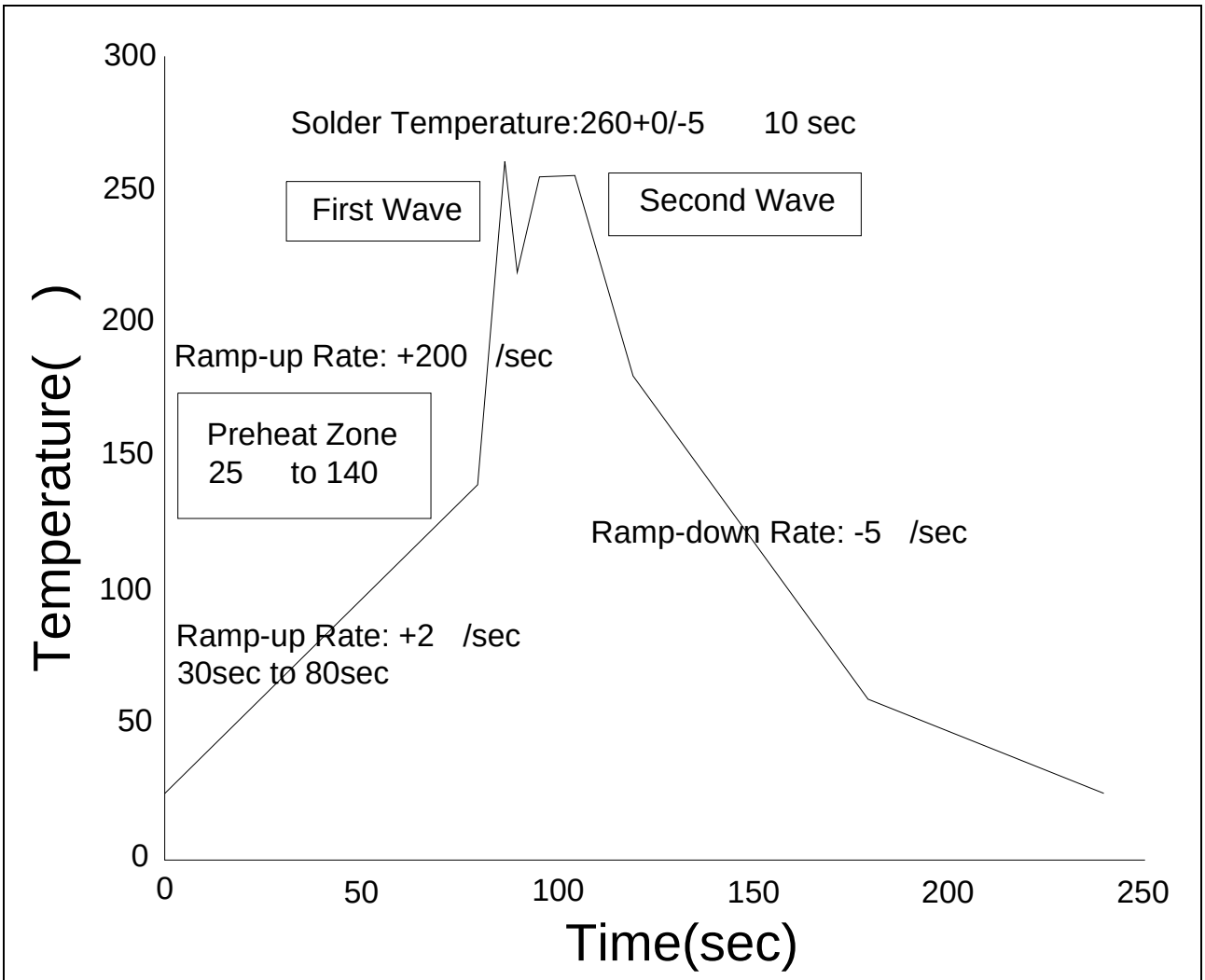


CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)



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	11.90	12.00	12.10	0.469	0.472	0.476
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	7.40	7.50	7.60	0.291	0.295	0.299
T	0.35	0.40	0.45	0.014	0.016	0.018
W	15.70	16.00	16.30	0.618	0.630	0.642

WAVE SOLDERING



HAND SOLDERING BY SOLDERING IRON	
Soldering Temperature	360 ± 5
Soldering Time	3s 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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