

# 10/100/1000BASE-TX TRANSFORMER MODULES

## Features:

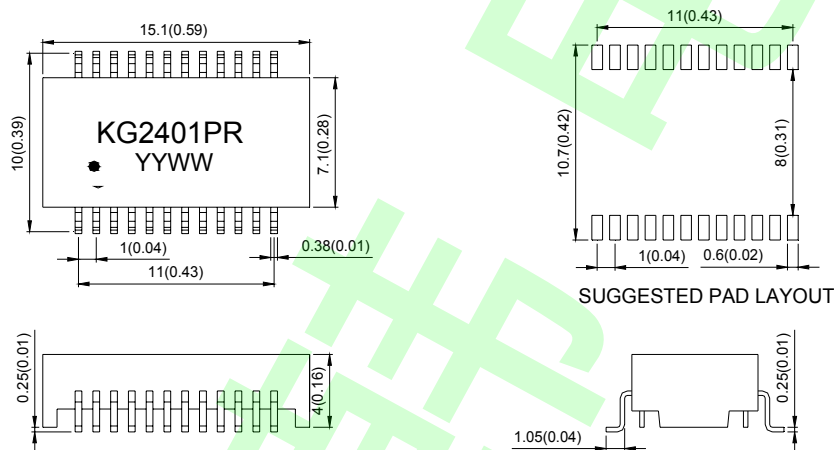
- Suitable for End-span POE applications with 350mA current capability
- IEEE 802.3af/ANSI X3.263 compliant performance.
- Storage temperature range: -40~+80°C,90%RH
- RoHS compliant

## Specifications

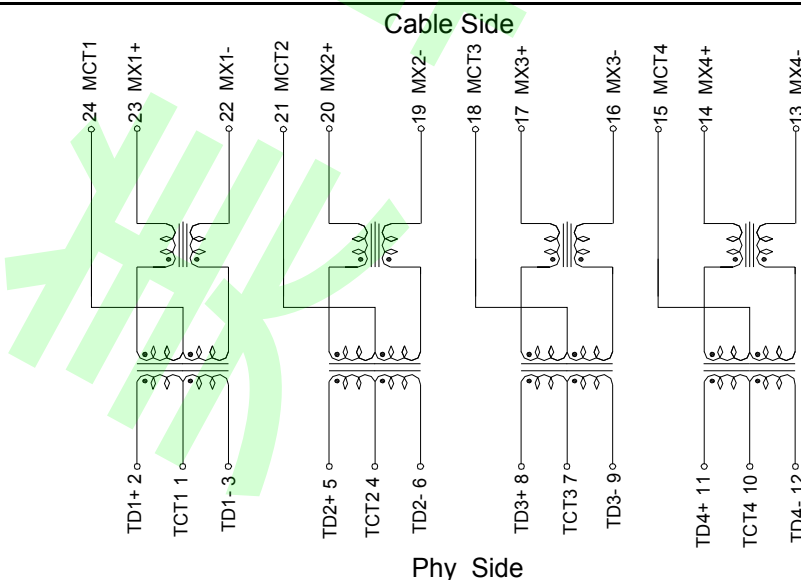
Electrical Specification@25°C Operating Temperature 0 to +70°C							
Part NO	Trun Ratio (±3%)		OCL primary@ 100KHz,0.1Vrms,8mA	Leakage primary@ 100KHz,0.1Vrms	Cww (Pri.:Sec.)	DCR (Ω)	
	TX	RX				Primary	Secondary
KG2401PR	1CT:1CT	1CT:1CT	350uH Min	0.5uH max	35pF Max	0.9 Max	1.2 Max

Electrical Specification@25°C Operating Temperature 0 to +70°C									
Part NO	Insertion loss (dB max) 1-100MHz	Return loss(dB min) MHz				CMRR (dB min .) MHz		Crosstalk (dB min .) MHz	Isolation Voltage (Vrms min)
		1-30	40	50	60-100	1-60	60-100		
KG2401PR	-1.0	-18	-16	-16	-10	-35	-30	-33	1500

Dimension:mm(inch)+/-0.25(0.01)

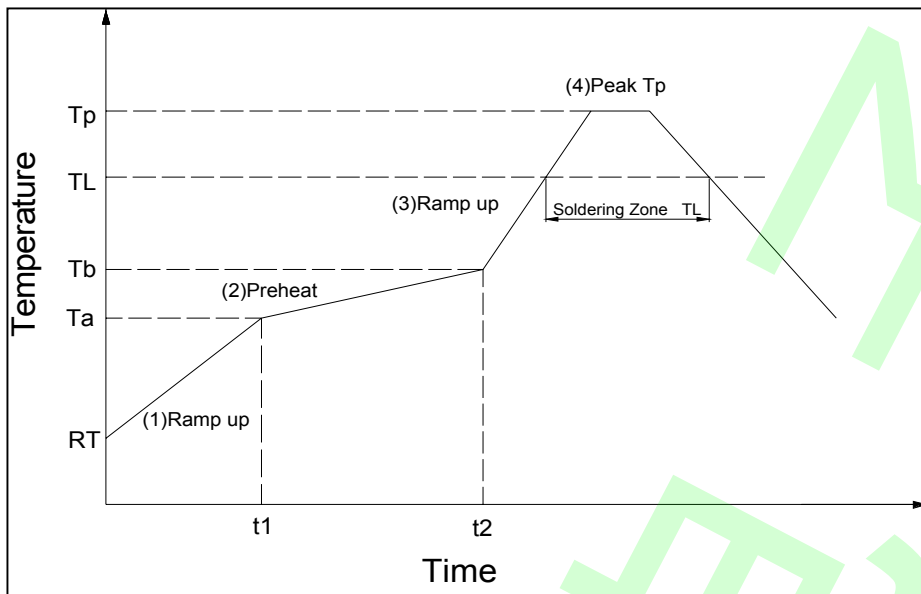


## Schematic



## 5.SUGGEST PROFILE

### IR reflow graph



### IR reflow profile

Form-1 (Reference JEDEC J-STD-020C Table 5-2)

IR reflow profile		Sn-Pb	Pb-free
step#	Profile Feature	Condition/Duration	Condition/Duration
step1	Ramp-up rate	1.5-3°C/sec.	1.5-3°C/sec.
step2	Preheat : 100~150°C(Ta-Tb)	t1-t2 : 60~120 sec.	t1-t2 : 60~180 sec.
step3	Ramp-up rate(T <sub>L</sub> to T <sub>P</sub> )	1.5-3°C/sec.	1.5-3°C/sec.
	Temperature maintained above 183°C(T <sub>L</sub> )	T <sub>L</sub> : 60-150sec.	T <sub>L</sub> : 80-150sec.
step4	Peak temperature(T <sub>P</sub> )	230+5/-10°C	260+0/-5°C
	Time within 5°C of actual peak temperature	30±10 sec.	30±10 sec.
step5	Ramp-down rate	6°C/sec.Max	6°C/sec.Max
Note1	Subject the samples to 3 cycles of the above defined reflow conditions		Subject the samples to 3 cycles of the above defined reflow conditions
Note2	Time 25°C to peak temperature : 6 minutes max.		Time 25°C to peak temperature : 8 minutes max.
Note3	The time between reflows shall be 5 minutes minimum and 60minutes maximum		

### SnPb Eutectic Process- "Package Peak Reflow Temperature"

Form-2 (Reference JEDEC J-STD-020C Table 4-1)

产品厚度	产品体积 < 350mm <sup>3</sup>	产品体积 ≥ 350mm <sup>3</sup>
< 2.5mm	240 +0/-5°C	225 +0/-5°C
≥ 2.5mm	225 +0/-5°C	225 +0/-5°C

### Pb-free Process - "Package Peak Reflow Temperature"

Form-3 (Reference JEDEC J-STD-020C Table 4-2)

产品厚度	产品体积 < 350mm <sup>3</sup>	产品体积 350mm <sup>3</sup> -2000mm <sup>3</sup>	产品体积 > 2000mm <sup>3</sup>
< 1.6mm	260 +0/-5°C	260 +0/-5°C	260 +0/-5°C
1.6mm-2.5mm	260 +0/-5°C	250 +0/-5°C	245 +0/-5°C
> 2.5mm	250 +0/-5°C	245 +0/-5°C	245 +0/-5°C



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## 6. Reliability

No.	Test Item	Refer To Standard	Test Condition																					
1	Resistance To Soldering Heat--Convection Reflow	IPC/JEDEC J-STD-020D	1).Peak Temperature: Refer to Specification According to Package Body Thickness And Volume 2).Preheat Temperature and Soak Time: 150~200℃,60~120 Seconds 3).Average Ramp-up Rate: 3℃/Second Max 4).Above 217℃: 60~150 Seconds 5).Peak Temperature-5℃: Over 30 S																					
2	Thermal Shock	IEC68-2-14 Method A	1.Low Temperature:-40℃ 2.High Temperature:125 3.Dwell Time:30 Minutes 4.Transition Time: Less Than 5Minutes 5.Number of Cycles: 10																					
3	High Temperature	IEC68-2-2 Method A	125℃,96Hours																					
4	Low Temperature	IEC68-2-1 Method A	-40℃,96Hours																					
5	Temperature Humidity Cycle	IEC68-2-38	<table border="1"> <thead> <tr> <th>Temp</th> <th>Humidity</th> <th>soak time</th> </tr> </thead> <tbody> <tr> <td>25~65℃</td> <td>93+/-3%RH</td> <td>1.5 hr</td> </tr> <tr> <td>65℃</td> <td>93+/-3%RH</td> <td>4 hr</td> </tr> <tr> <td>65~25℃</td> <td>80~96%RH</td> <td>2.5 hr</td> </tr> <tr> <td>25~65℃</td> <td>93+/-3%RH</td> <td>1.5hr</td> </tr> <tr> <td>65℃</td> <td>93+/-3%RH</td> <td>4hr</td> </tr> <tr> <td>65~25℃</td> <td>80~96%RH</td> <td>2</td> </tr> </tbody> </table>	Temp	Humidity	soak time	25~65℃	93+/-3%RH	1.5 hr	65℃	93+/-3%RH	4 hr	65~25℃	80~96%RH	2.5 hr	25~65℃	93+/-3%RH	1.5hr	65℃	93+/-3%RH	4hr	65~25℃	80~96%RH	2
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6	Vibration	IEC68-2-6	1.Sine Wave 2.Amplitude:0.75mm 3.Frequence:5~500~5Hz 4.Direction: X,Y,Z 5.Number of Sweep Cycles Per Direction:10 6.Duration: 2 Hours Each Direction																					
7	Mechanical Shock	MIL-STD-202	1).Half -Sine Wave 2).Peak Acceleration:50G 3).Duration:11mS 4).Direction: X,Y,Z,-X,-Y,-Z 5).Number of Shock Per Direction:3																					
8	Free Drop	ISO4180	1) Height: Refer to Specification According to Production weight 2).1Corner,3Edges,6Faces .Total Are 10 Times																					
9	Solderability	JESD22-B102D	1).Precondition:150±5℃,16±0.5Hours 2).Flux Type:ROL1 3).Immersion Flux Time: 5~10 Seconds 4).Solder Temperature:245±5℃ 5).Solder Immersion Time:5±0.5 Seconds 6).Solder Immersion/Emersion Speed:25.4±6.4mm/Second																					
10	Accelerated Moisture Resistance---Unbiased Autoclave	JESD22-A102-C	1.Temperature:121℃ 2. Humidity: 100% 3. Vapor Pressure: 29.7 Psia or 205KPa 4.Duration:96 hours																					

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