4NXX Series

Rev.A.1.0

DESCRIPTION:

The 4NXX series combine an AIGaAs infrared emitting diode as the emitter which is optically coupled to a silicon planar phototransistor detector in a plastic DIP6 package with different lead forming options. The products are widely used in sequence controller,telephone/FAX, system appliances, measuring instrument and programmable logic controller.

MAIN FEATURES

High isolation 5000 VRMS
CTR flexibility available see order information
DC input with transistor output
Operating temperature range -55°C to 110°C
RoHS & REACH compliance
CQC approved
VDE approved
UL approved

ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

Parameter	Symbol	Va d-6 e<</Mc 0.057 T9wiamlerC.94v

Operating Temperature	T_{opr}	-55~+110	
Storage Temperature	T_{stg}	-55~+150	
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	-	1.27	1.4	V
				I_F=20mA	-	1.32	1.5	
	Reverse Current	I_R		V_R=6V	-	-	1	μA
	Input Capacitance	C_{in}		V=0, f=1MHz	-	30	-	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
	Collector-Base breakdown voltage	BV_{CBO}		I_C=0.1mA I_F=0	80	-	-	V
	Emitter-Collector breakdown voltage	BV_{ECO}		I_E=0.1mA I_F=0	7	-	-	V
	Emitter-Base breakdown voltage	BV_{EBO}		I_E=0.1mA I_F=0	7	-	-	V
Transfer Characteristics	DC Forward current gain	h_{FE}		V_{CE}=5V, I_C=0.5mA	100	-	600	-
	Current transfer ratio	CTR		I_F=10mA V_{CE}=10V	10	-	-	%
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	4N25,4N26, 4N27,4N28	I_F=10mA V_{CE}=10V	-	-	0.5	V
			4N35,4N36, 4N37	I_F=10mA I_C=0.5mA	-	-	0.3	
			4N38	I_F=10mA I_C=4mA	-	-	1.0	
			4N25,4N26, 4N27,4N28	I_F=10mA I_C=2mA	-	-	0.5	
	Isolation resistance	R_{IO}		DC500V 40~60%R.H.	10			

Characteristics Curves

FIG.1:

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

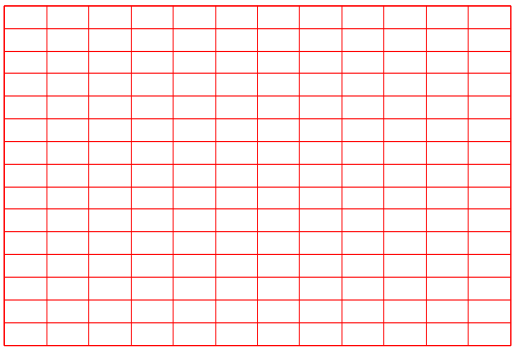


FIG.8: Normalized Collector-emitter Saturation Voltage vs. Ambient Temperature

Test Circuits

FIG.13: Test Circuits of Response Time

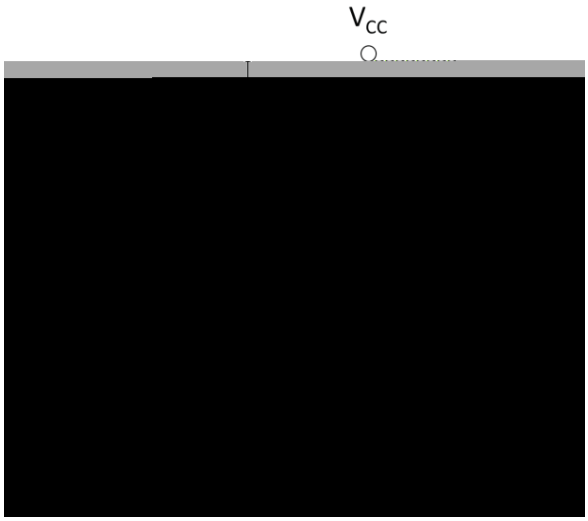
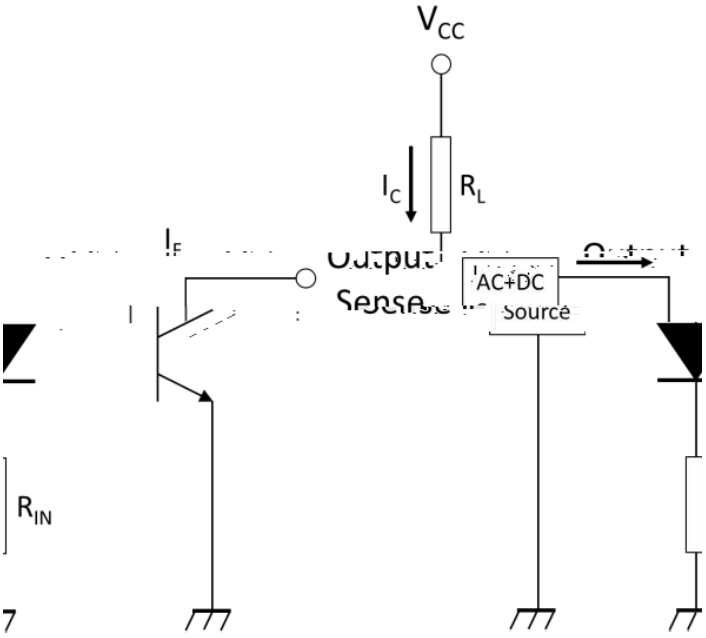


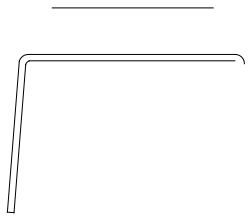
FIG.14: Curves of Response Time

FIG.15: Test Circuits of Frequency Response



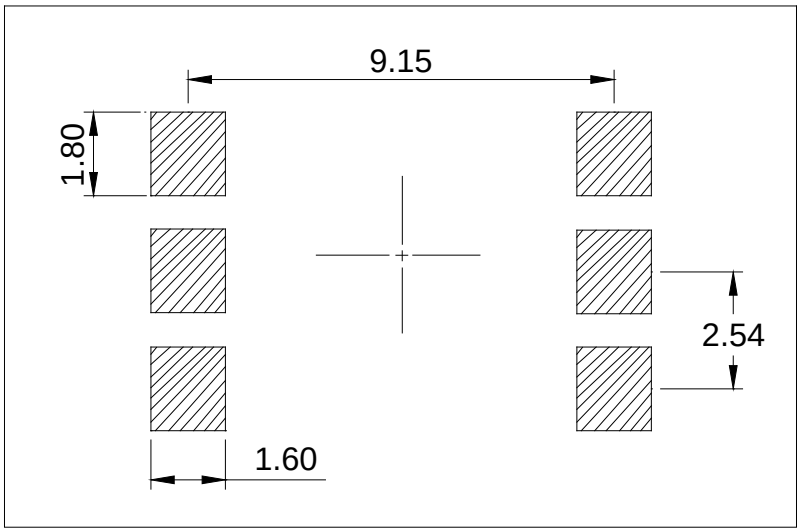
Package Dimension (Unit: mm)

Standard DIP Type:

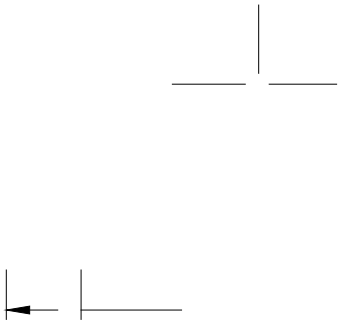


RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)

Option S

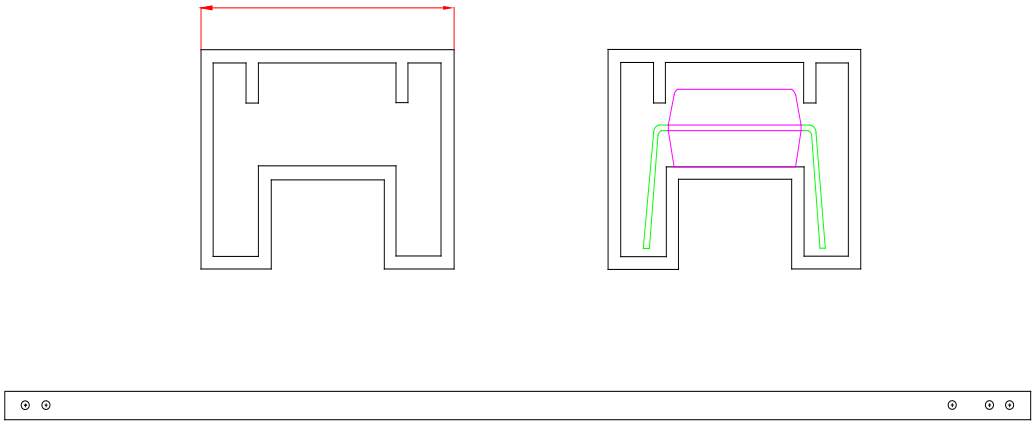


Option SL

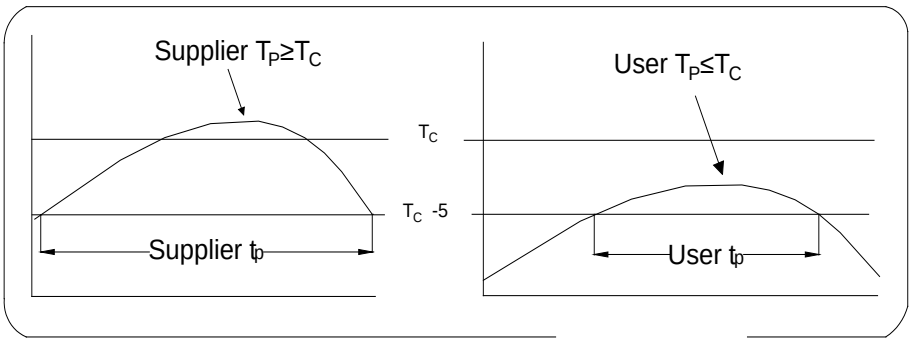


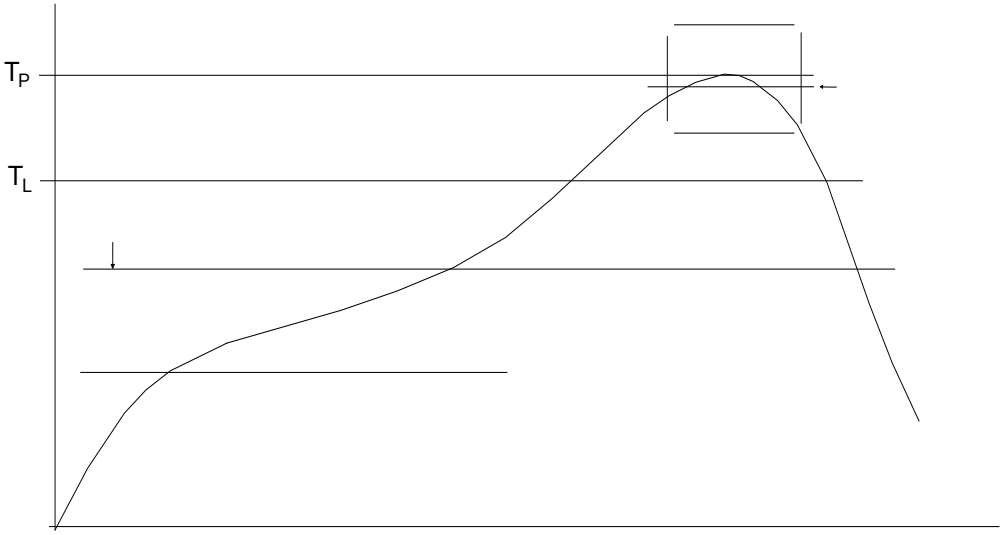
TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Standard DIP

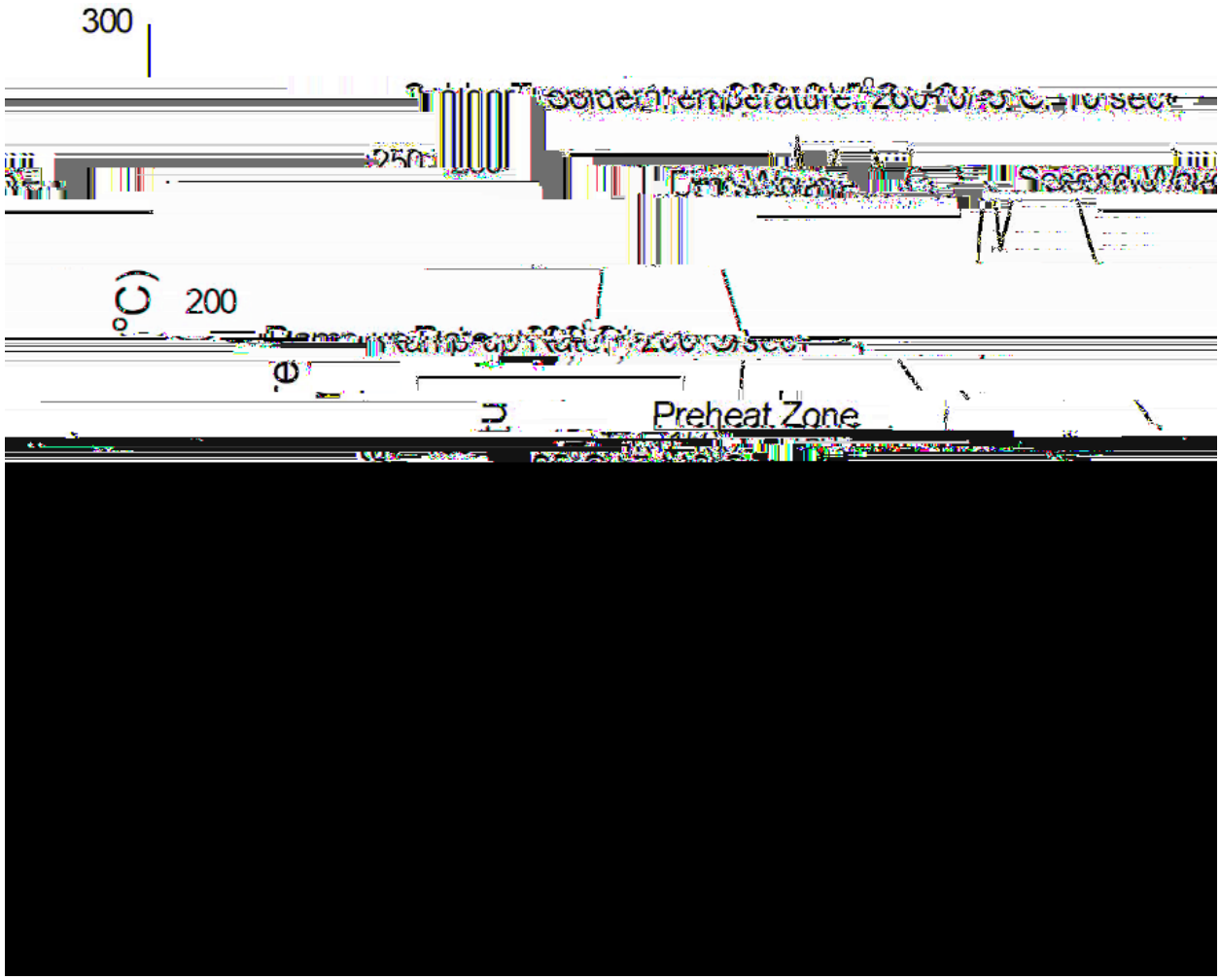


REFLOW INFORMATION





WAVE SOLDERING



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

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