

EE2 Series



The NEC EE2 series relays are low power consumption, low magnetic interference surface mount relays that meet 2500V surge requirements(between coil and contacts). Their compact lightweight design makes them ideal for use in telecommunication equipment. This series complies with FCC Part 68 2500V surge voltage requirements.

The EE2 series is available in 2 form C (DPDT) contact arrangements for all latch types. The EE2 series also offers a minimum foot print design as well as a tape and reel packaging system.

FEATURES

- Compact and lightweight
- 2 form C contact arrangement
- Low power consumption
- Reduced mounting space: 15 mm x 9.5 mm
- High-breakdown voltage of coil to contacts: 1500 Vac, 2500 V (2 x 10 μ s*)
- Capable of high-power switching: 700 Vac, 4.2 A, 4 times in case of accident
- UL recognized (E73266), CSA certified (LR46266)
- Certified to EN 60950

SPECIFICATIONS

Contact Form		2 form C
Contact Material		Silver alloy with gold alloy overlay
Contact Ratings	Maximum switching power	60 W, 125 VA
	Maximum switching voltage	220 Vdc, 250 Vac
	Maximum switching current	2 A
	Maximum carrying current	2 A
Minimum Contact Ratings		100 mVdc, 100 μ A
Initial Contact Resistance		50 mOhm typical
Nominal Operating Power	Nonlatch type	140 mW (3 to 12 V), 200 mW (24 V)
	Single coil latch type	100 mW
	Double coil latch type	140 mW
Operate Time (Excluding bounce)		Approximately 2 ms without diode
Release Time (Excluding bounce)		Approximately 1 ms without diode
Insulation Resistance		1000 MOhm at 500 Vdc
Breakdown Voltage	Between open contacts	1000 Vac (for one minute)
	Between adjacent contacts	1500 V surge (10 x 160 μ s*)
	Between coil to contacts	1000 Vac (for one minute) 2500 V surge (2 x 10 μ s**)
Shock Resistance		735 m/s ² (75 G) (misoperating) 980 m/s ² (100G) (destructive failure)
Vibration Resistance		10 to 55 Hz, double amplitude 3 mm (20 G) (misoperating) 10 to 55 Hz, double amplitude 5 mm (30 G) (destructive failure)
Ambient Temperature		-40 to +85°C
Coil Temperature Rise		18 degrees at nominal coil voltage (140mW)
Running Specifications	Nonload	1 x 10 ⁷ operations
	Load	50 Vdc, 0.1 A (resistive) 1 x 10 ⁶ operations at 85°C 10 Vdc, 10 mA (resistive) 1 x 10 ⁶ operations at 85°C
Weight		Approximately 1.9 g

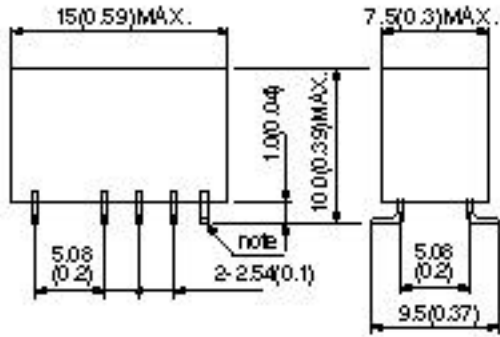
* rise time: 10 μ s,
fall time: 160 μ s

** rise time: 2 μ s,
fall time: 10 μ s

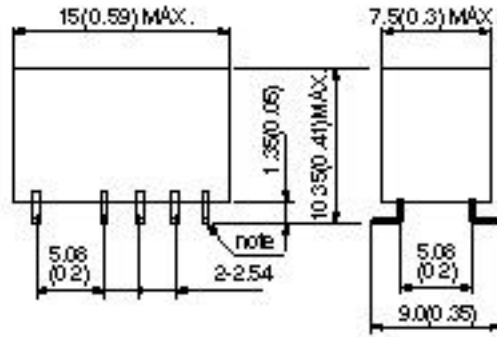
EE2 DIMENSIONS

mm (inch)

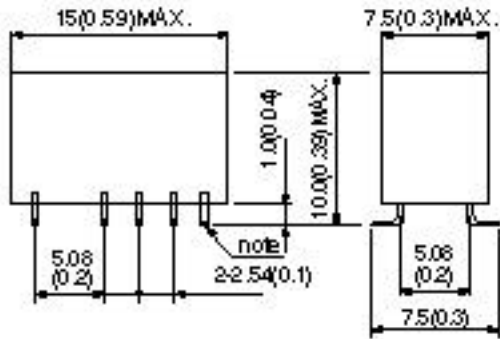
EE2-..NU



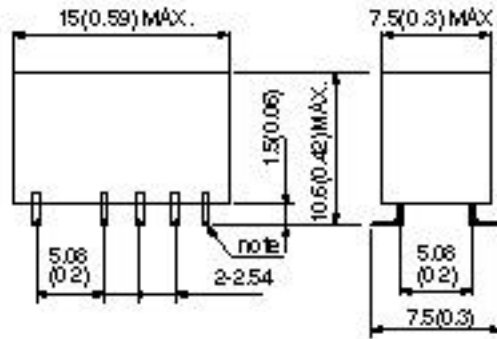
EE2-..NUX



EE2-..NUH



EE2-..NUN

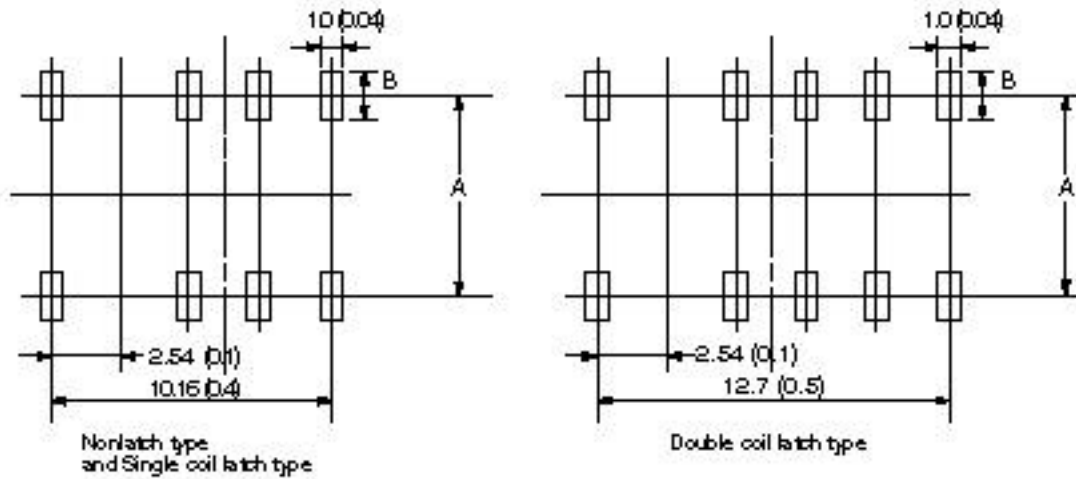


Tolerance ± 0.2 mm (0.008) unless otherwise specified.

note: This pair of pins at the right end applies to double coil latch type only.

EE2 PAD LAYOUT

(bottom view) mm (inch)

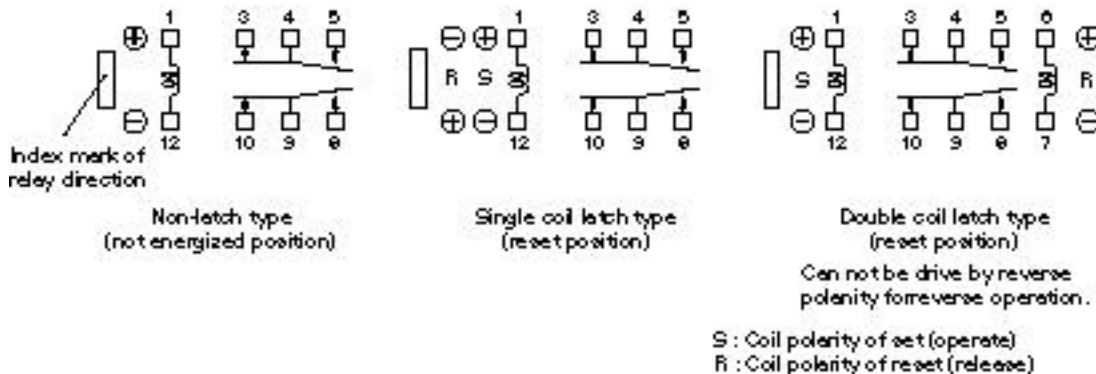


TYPE	A	B
EE2-..NU	7.3 (0.287)	3.0 (0.118)
EE2-..NUX	7.02 (0.276)	2.73 (0.107)
EE2-..NUH	6.29 (0.248)	2.0 (0.079)
EE2-..NUN	6.29 (0.248)	2.0 (0.079)

Tolerance ± 0.1 mm (0.004) unless specified.

SCHEMATICS

(bottom view)



PART NUMBER SYSTEM

EE2 - 5 T NU - L
 ① ② ③ ④ ⑤

- ① Relay Series
- ② Nominal Coil Voltage (See part numbers)
- ③ Latch type
 - Blank: Nonlatch Type (standard)
 - S: Single Coil Latch Type
 - T: Double Coil Latch Type
- ④ Identifier
 - NU: Standard Type UL recognized CSA certified Type
 - NUH: Minimum Footprint Type (UL recognized CSA certified Type)
 - NUX: High solder joint reliability (UL recognized CSA certified Type)
 - NUN: High solder joint reliability with Minimum Footprint Type (UL recognized CSA certified Type)
- ⑤ Packaging Code
 - Blank: Tube
 - L: Embossed carrying tape standard (L Type)
 - R: Embossed carrying tape (R Type)

PART NUMBERS

Nonlatch Type at 25° C

Part Number (Standard)	Nominal Coil Voltage (Vdc)	Coil Resistance (Ohm) ±10%	Must Operate Voltage (Vdc)	Must Release Voltage (Vdc)
EE2-3NU	3	64.3	2.25	0.3
EE2-4.5NU	4.5	145	3.38	0.45
EE2-5NU	5	178	3.75	0.5
EE2-6NU	6	257	4.5	0.6
EE2-9NU	9	579	6.75	0.9
EE2-12NU	12	1028	9.0	1.2
EE2-24NU	24	2880	18.0	2.4

Single Coil Latch Type at 25 °C

Part Number (Standard)	Nominal Coil Voltage (Vdc)	Coil Resistance (Ohm) ±10%	Must Operate Voltage (Vdc)	Must Release Voltage (Vdc)
EE2-3SNU	3	90	2.25	2.25
EE2-4.5SNU	4.5	202.5	3.38	3.38
EE2-5SNU	5	250	3.75	3.75
EE2-6SNU	6	360	4.5	4.5
EE2-9SNU	9	810	6.75	6.75
EE2-12SNU	12	1440	9.0	9.0
EE2-24SNU	24	5760	18.0	18.0

Double Coil Latch Type at 25 °C

Part Number (Standard)	Nominal Coil Voltage (Vdc)	Coil Resistance (Ohm) ±10%	Must Operate Voltage (Vdc)	Must Release Voltage (Vdc)
EE2-3TNU	3	S 64.3	2.25	-
		R 64.3	-	2.25
EE2-4.5TNU	4.5	S 145	3.38	-
		R 145	-	3.38
EE2-5TNU	5	S 178	3.75	-
		R 178	-	3.75
EE2-6TNU	6	S 257	4.5	-
		R 257	-	4.5
EE2-9TNU	9	S 579	6.75	-
		R 579	-	6.75
EE2-12TNU	12	S 1028	9.0	-
		R 1028	-	9.0
EE2-24TNU	24	S 4114	18.0	-
		R 4114	-	18.0

Note S: Set Coil (pin No. 1 and 12)

R: Reset Coil (pin No. 6 and 7)

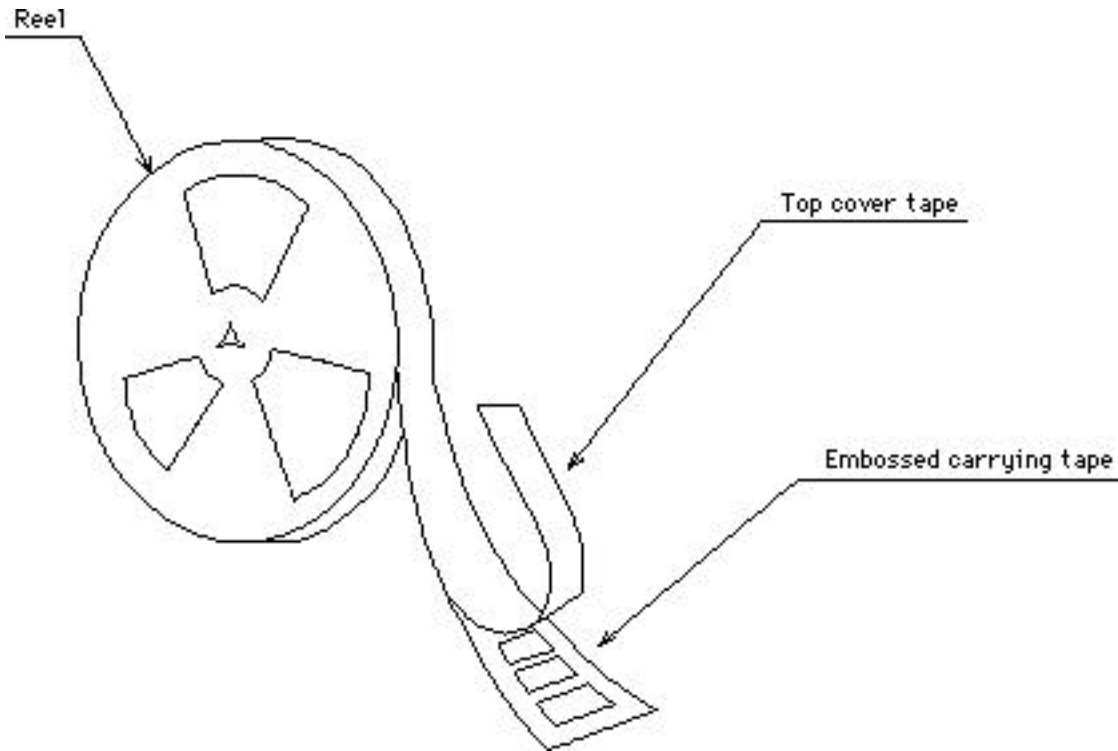
SAFETY STANDARD AND RATING

UL Recognized (UL508)* File No. E73266	CSA Certified (CSA C22.2 No. 14) File No. LR46266
30 Vdc, 2 A (Resistive) 110 Vdc, 0.3 A (Resistive) 125 Vac, 0.5 A (Resistive)	

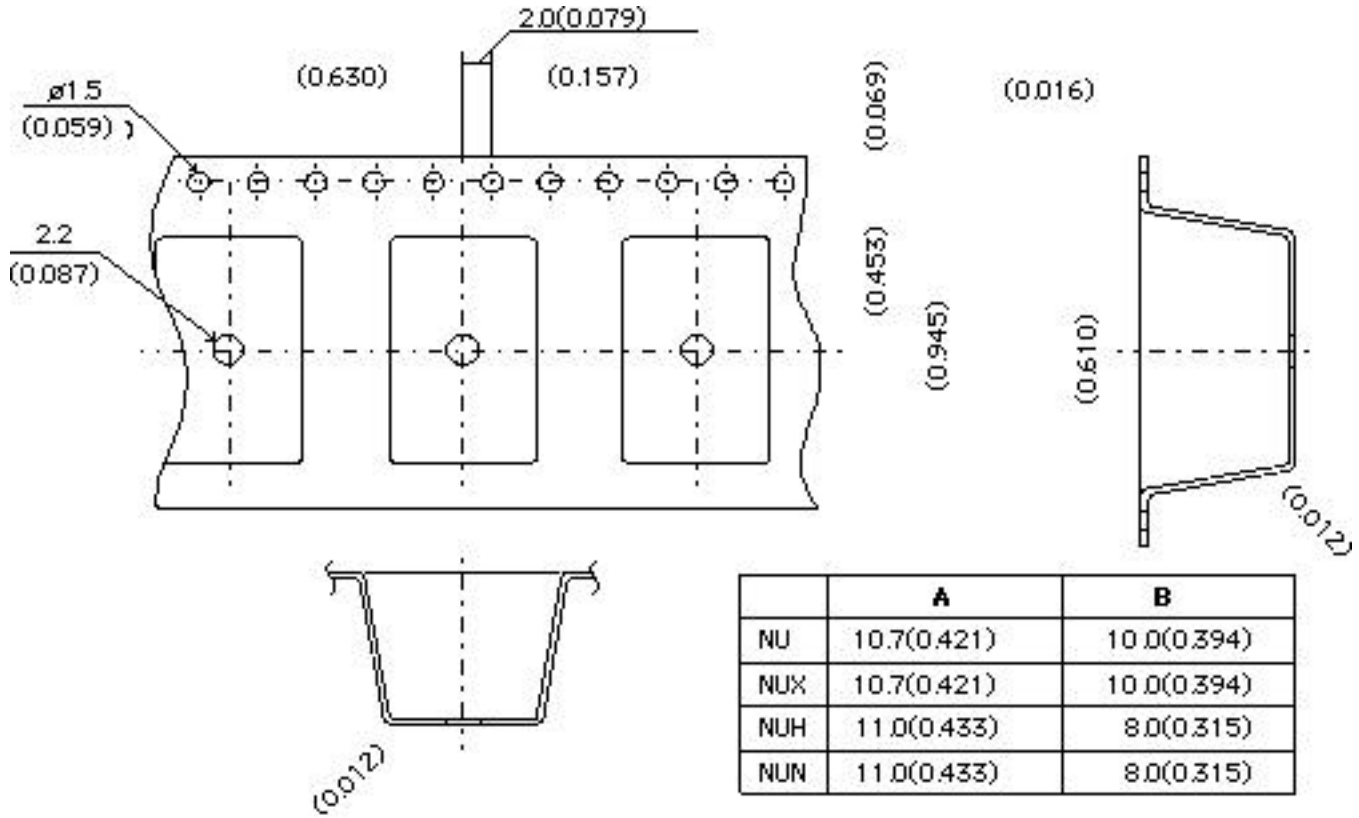
* Spacing: UL114, UL478, UL1950
EN60950

TAPE PACKAGE (OPTION)

APPEARANCE

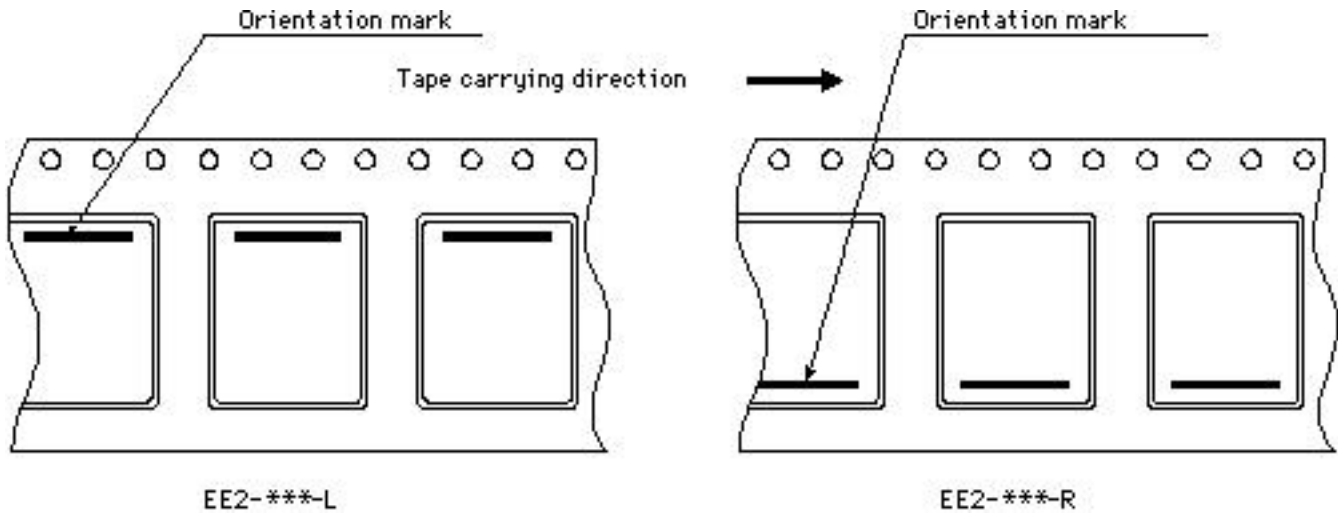


TAPE DIMENSION (inch)

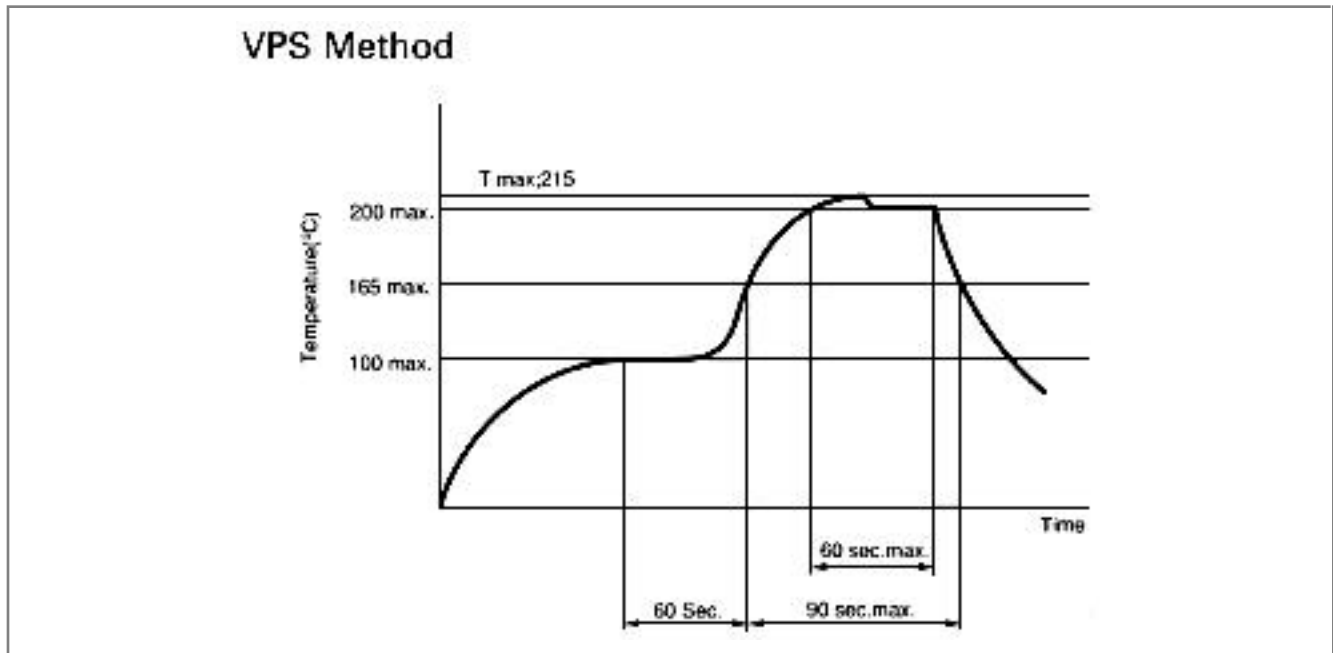
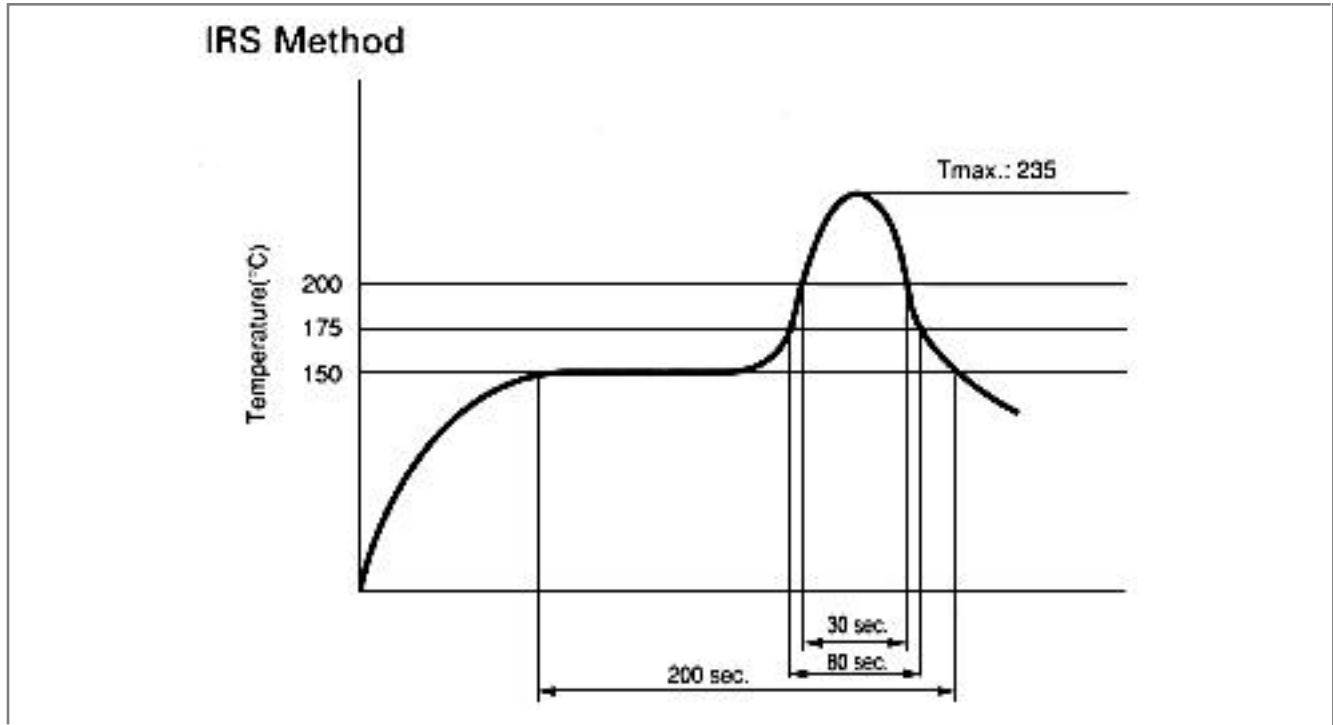


Note: Tolerance $\pm 0.1\text{mm}$ (± 0.004 inch) unless otherwise specified

RELAY ORIENTATION MARK AND TAPE CARRYING DIRECTION



SOLDERING CONDITION



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