

# UP2.8B

## UNI-PAC™ low profile drum core power inductors



### Product features

- Miniature size and rugged construction
- Low DCR and high efficiency
- Designed for high shock environments
- Frequency range 1 kHz to 2 MHz
- Ferrite core material

### Applications

- DC-DC converters
- Filter inductors
- Signal conditioning
- Energy storage applications
- Computer and battery powered equipment
- Handheld/portable devices
- Gaming machines/consoles

### Environmental data

- Storage temperature range (component):  
-40 °C to +125 °C
- Operating temperature range: -40 °C to +125 °C  
(ambient plus self-temperature rise)
- Solder reflow temperature:  
J-STD-020 (latest revision) compliant



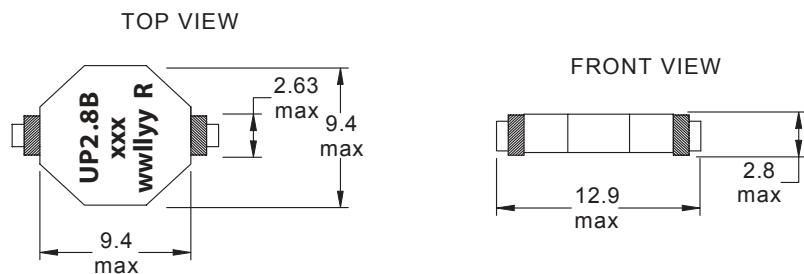
**Product specifications**

Part Number	Ordering Code	OCL (1) $\mu\text{H} \pm 20\%$	I <sub>rms</sub> (2) (A)	I <sub>sat</sub> (3) (A)	DCR (4) Ohms (Max.)
UP2.8B-1R0-R	UP2-8B-1R0-R	0.98	3.6	8.0	.0286
UP2.8B-1R5-R	UP2-8B-1R5-R	1.59	3.3	6.4	.0349
UP2.8B-2R2-R	UP2-8B-2R2-R	2.44	3.1	5.2	.0356
UP2.8B-3R3-R	UP2-8B-3R3-R	3.24	2.8	4.5	.0474
UP2.8B-4R7-R	UP2-8B-4R7-R	4.15	2.7	3.9	.0478
UP2.8B-6R8-R	UP2-8B-6R8-R	6.73	2.4	3.2	.067
UP2.8B-100-R	UP2-8B-100-R	10	2.1	2.7	.080
UP2.8B-150-R	UP2-8B-150-R	15	1.7	2.2	.120
UP2.8B-220-R	UP2-8B-220-R	22	1.5	1.7	.190
UP2.8B-330-R	UP2-8B-330-R	33	1.3	1.5	.250
UP2.8B-470-R	UP2-8B-470-R	47	1.0	1.2	.340
UP2.8B-680-R	UP2-8B-680-R	68	.89	1.0	.480
UP2.8B-101-R	UP2-8B-101-R	100	.78	.84	.622
UP2.8B-151-R	UP2-8B-151-R	150	.62	.74	.971

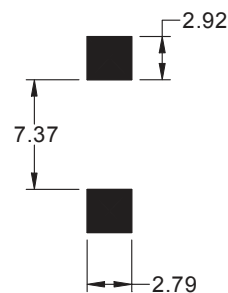
1) Open Circuit Inductance Test Parameters: 100 kHz, 0.250 Vrms, 0.0 Adc  
2) RMS current, delta temp. of 40 ° C ambient temperature of +85 ° C

3) Peak current for approximately 10% roll-off @ +20 ° C  
4) Values @ +20 ° C

**Dimensions-mm**



**Recommended PCB Layout**

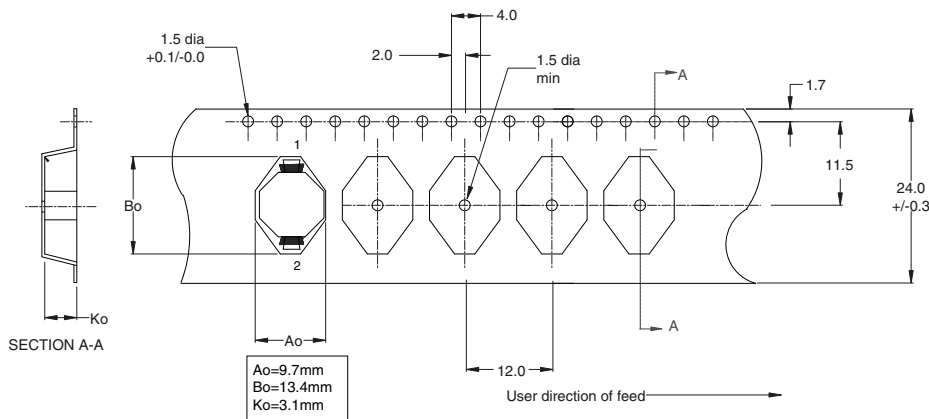


Component View

wllyy = date code R = (revision level)  
xxx = Inductance value per family chart

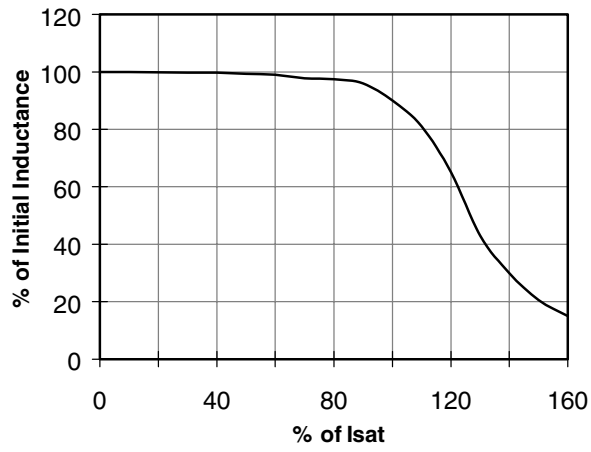
Do not route traces or vias underneath the inductor

**Packaging information-mm**

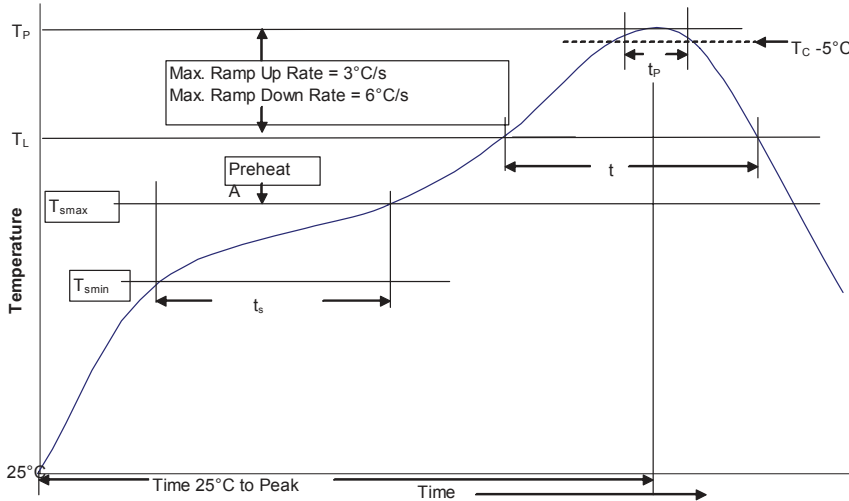


Packaging Information:  
Parts packaged on a  
13" Dia. EIA-481 compliant reel.  
1,750 parts per reel.

**Inductance characteristics**



**Solder Reflow Profile**



**Table 1 - Standard SnPb Solder ( $T_p$ )**

Package Thickness	Volume $\leq 350$ mm <sup>3</sup>	Volume $\geq 350$ mm <sup>3</sup>
<2.5mm	235°C	220°C
$\geq 2.5$ mm	220°C	220°C

**Table 2 - Lead (Pb) Free Solder ( $T_p$ )**

Package Thickness	Volume $\leq 350$ mm <sup>3</sup>	Volume 350 - 2000 mm <sup>3</sup>	Volume $> 2000$ mm <sup>3</sup>
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

**Reference JDEC J-STD-020**

Profile Feature	Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. ( $T_{smin}$ )	100°C
	• Temperature max. ( $T_{smax}$ )	150°C
	• Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	60-120 Seconds
Average ramp up rate $T_{smax}$ to $T_p$	3°C/ Second Max.	3°C/ Second Max.
Liquidous temperature ( $T_L$ )	183°C	217°C
Time at liquidous ( $t_L$ )	60-150 Seconds	60-150 Seconds
Peak package body temperature ( $T_p$ )*	Table 1	Table 2
Time ( $t_p$ )** within 5 °C of the specified classification temperature ( $T_C$ )	20 Seconds**	30 Seconds**
Average ramp-down rate ( $T_p$ to $T_{smax}$ )	6°C/ Second Max.	6°C/ Second Max.
Time 25°C to Peak Temperature	6 Minutes Max.	8 Minutes Max.

\* Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

\*\* Tolerance for time at peak profile temperature ( $t_p$ ) is defined as a supplier minimum and a user maximum.

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