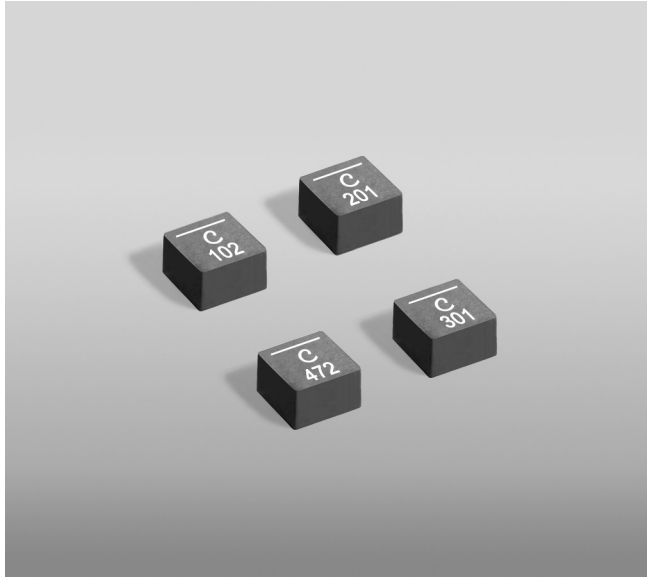


# Shielded Power Inductor XEL4030



- Extremely low DCR and ultra low AC losses for high switching frequencies (2 to 5 MHz)
- AEC-Q200 Grade 1 qualified (-40°C to +125°C ambient)
- Superior current handling with soft saturation characteristics
- Can withstand high current spikes
- Designed for high temperature applications

**Core material** Composite

**Environment** RoHS compliant, halogen free

**Terminations** RoHS compliant, tin-silver over copper.

**Weight** 0.28 g

**Operating voltage** 0 – 80 V

**Ambient temperature** -40°C to +125°C with (40°C) Irms current.

**Maximum part temperature** +165°C (ambient + temp rise).

**Storage temperature** Component: -55°C to +165°C.

Tape and reel packaging: -55°C to +80°C

**Resistance to soldering heat** Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).

Part number <sup>1</sup>	Inductance <sup>2</sup> ±20% (µH)	DCR (mOhms) <sup>3</sup>		SRF typ <sup>4</sup> (MHz)	Isat <sup>5</sup> (A)	Irms (A) <sup>6</sup>	
		typ	max			20°C rise	40°C rise
XEL4030-101ME_	0.10	1.50	1.80	240	30.0	20.4	25.8
XEL4030-201ME_	0.20	2.15	2.40	155	22.0	17.0	21.6
XEL4030-301ME_	0.30	2.80	3.10	115	19.0	14.9	18.9
XEL4030-471ME_	0.47	4.10	4.60	95	15.5	12.3	15.6
XEL4030-641ME_	0.64	5.30	5.90	80	13.5	10.9	13.7
XEL4030-901ME_	0.90	8.00	8.80	68	10.0	8.8	11.2
XEL4030-102ME_	1.0	8.89	9.78	65	9.0	8.4	10.7
XEL4030-122ME_	1.2	10.4	11.5	60	8.7	7.8	9.8
XEL4030-152ME_	1.5	15.1	16.6	58	8.5	6.4	8.1
XEL4030-222ME_	2.2	20.1	22.1	40	6.1	5.8	7.8
XEL4030-332ME_	3.3	26.1	28.6	35	5.9	5.0	6.6
XEL4030-472ME_	4.7	40.0	44.1	30	4.6	3.9	5.1
XEL4030-682ME_	6.8	67.4	74.1	20	3.6	3.0	3.9

**Irms Testing**

Irms testing was performed on 0.75 inch wide x 0.25 inch thick copper traces in still air.

Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.

1. When ordering, please specify **packaging** code:

**XEL4030-682MEC**

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (500 parts per full reel).

B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter C instead.

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (2000 parts per full reel).

2. Inductance tested at 1 MHz, 0.1 Vrms, 0 Adc.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using Agilent/HP 4395A or equivalent.

5. DC current at 25°C that causes an inductance drop of 30% (typ) from its value without current.

6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.

7. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



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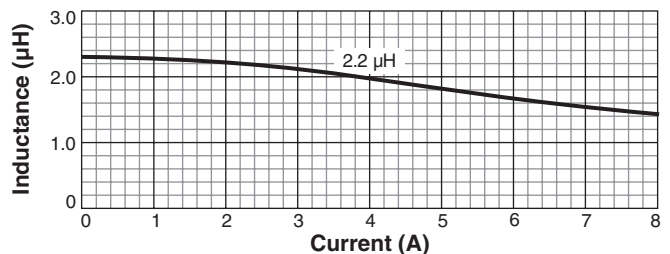
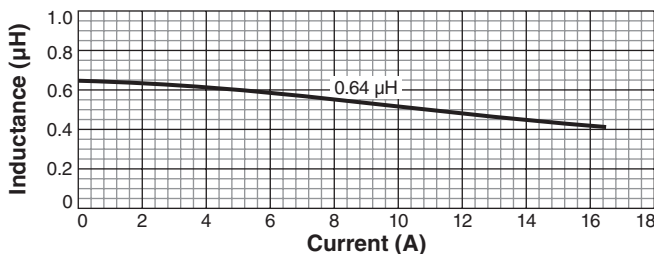
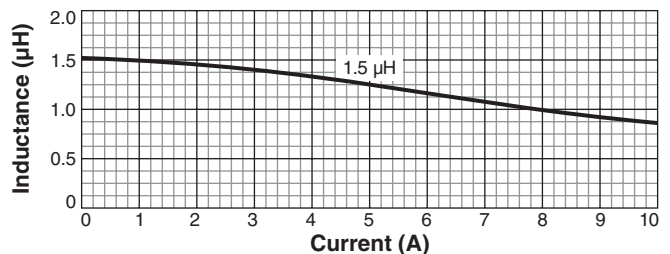
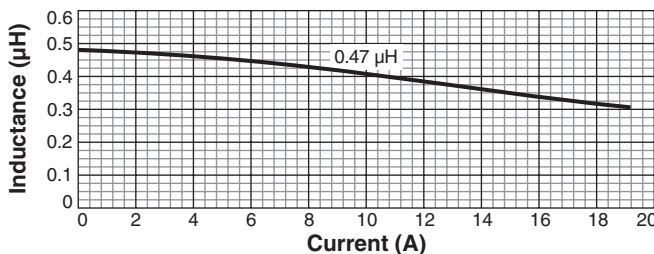
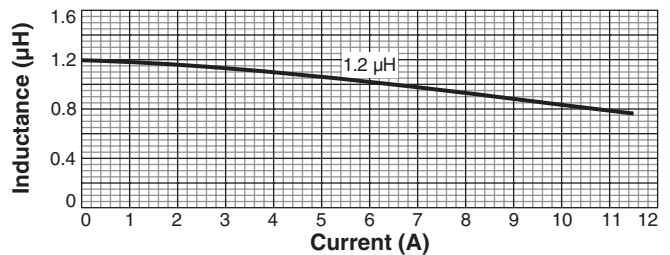
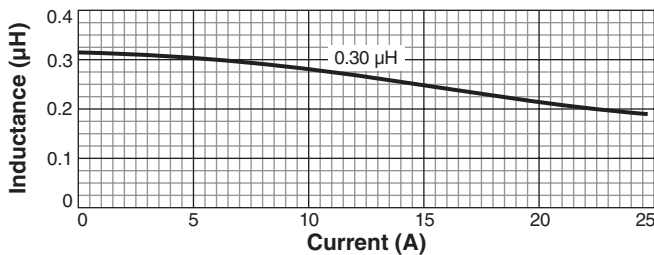
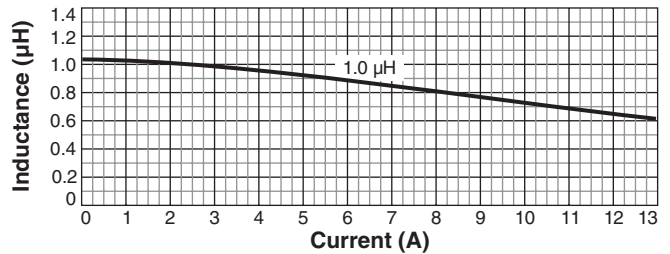
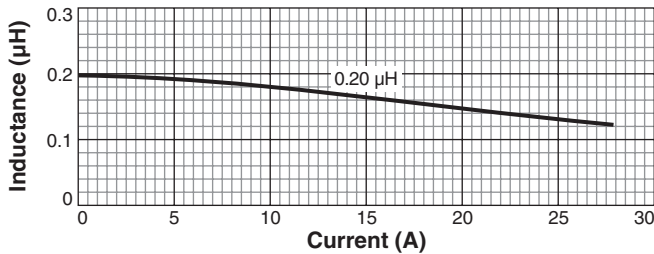
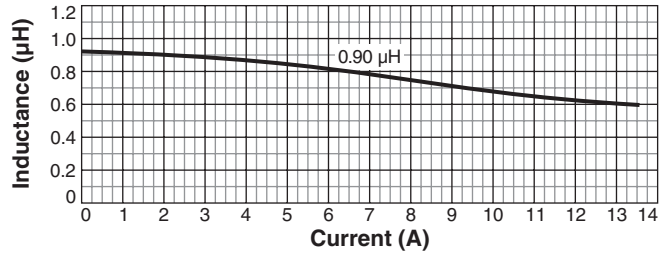
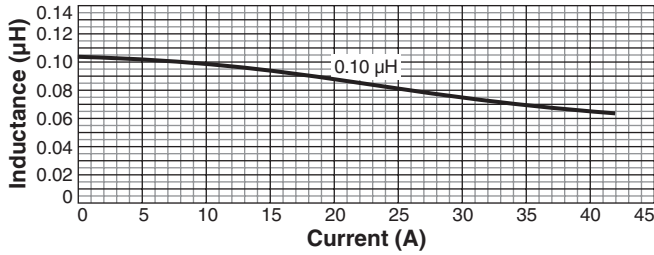
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**VERY LOW AC  
AND DC LOSSES**

# Shielded Power Inductor – XEL4030

## L vs Current



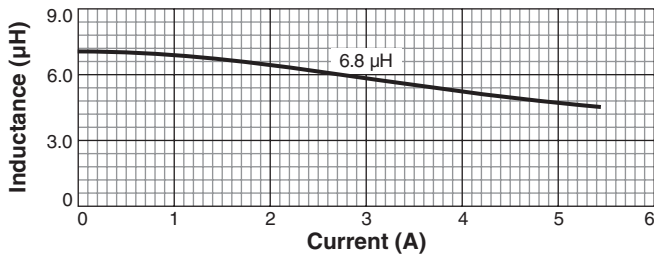
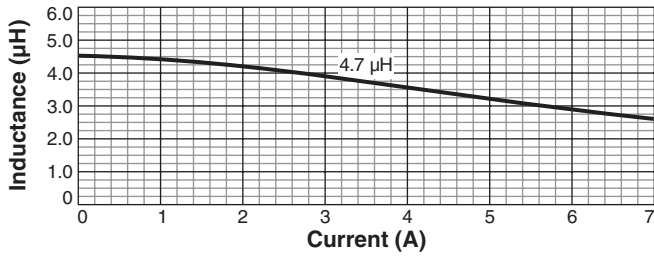
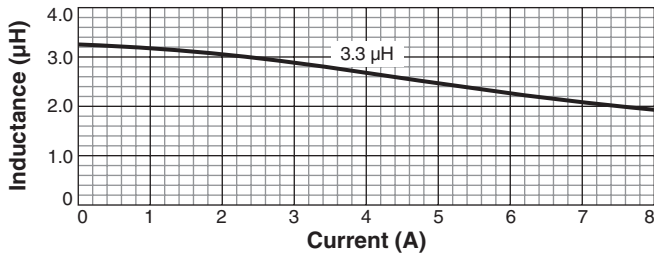
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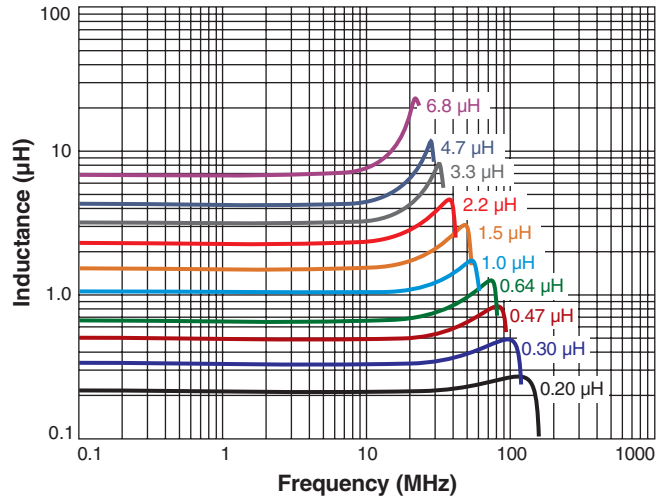
**VERY LOW AC  
AND DC LOSSES**

# Shielded Power Inductor – XEL4030

## L vs Current



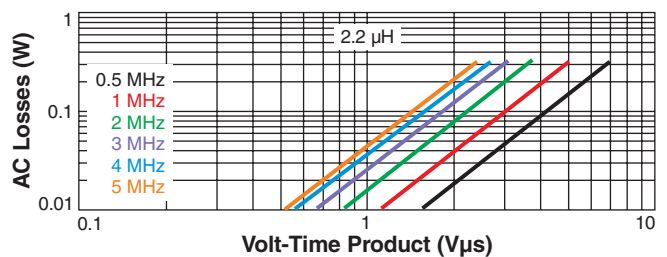
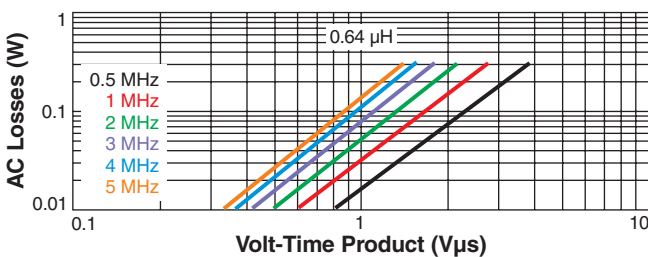
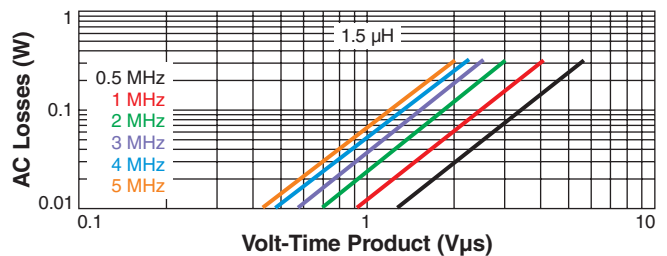
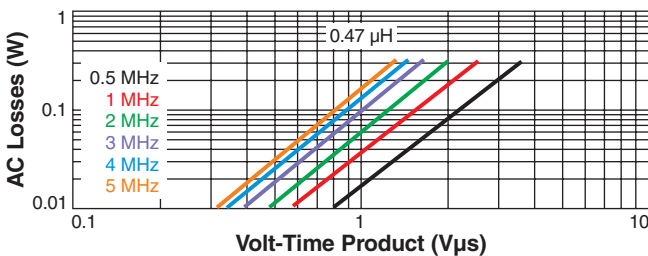
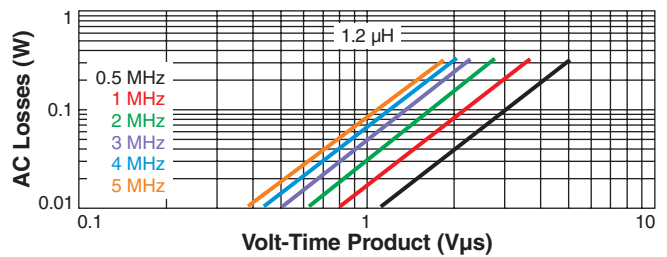
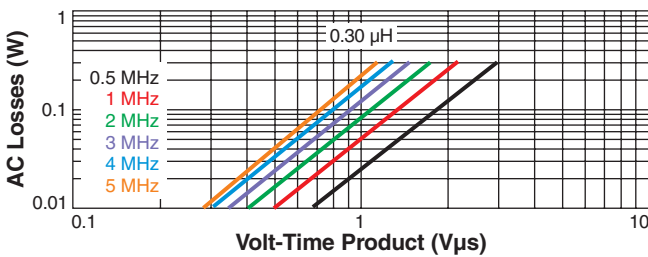
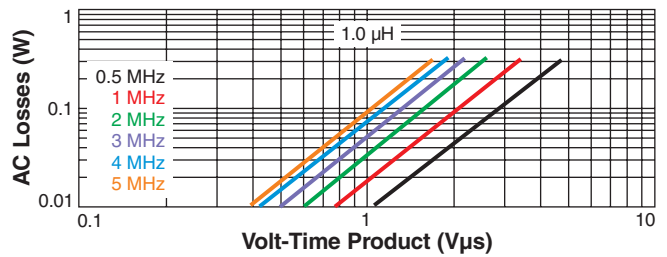
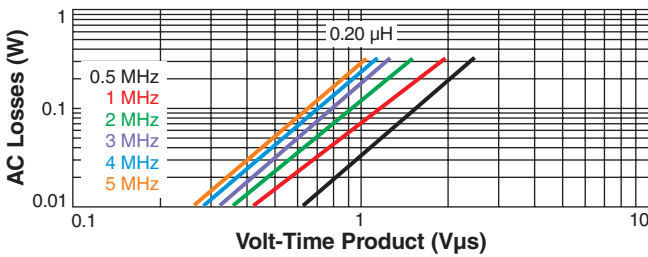
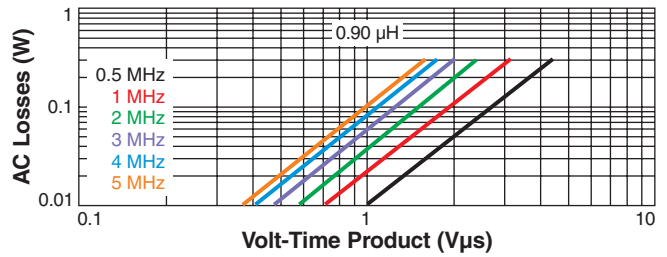
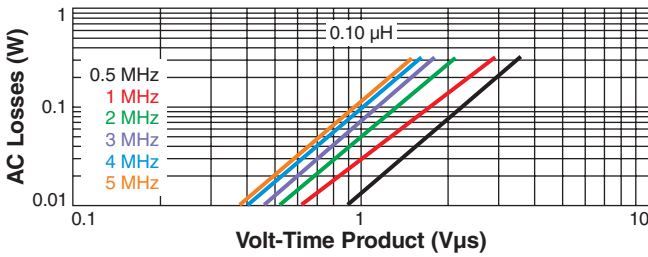
## Typical L vs Frequency



**VERY LOW AC AND DC LOSSES**

# Shielded Power Inductor – XEL4030

## AC Losses vs Volt-Time Product



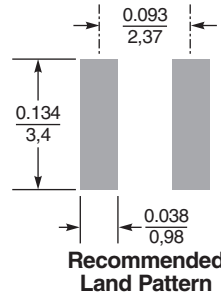
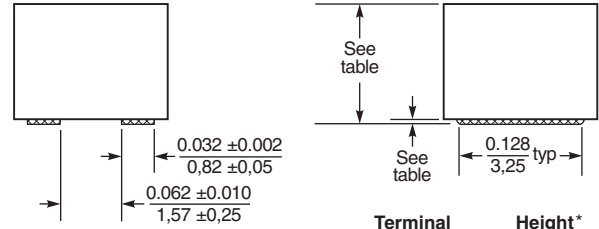
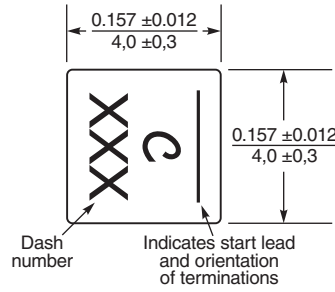
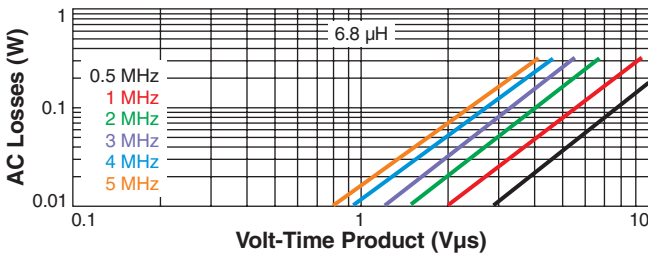
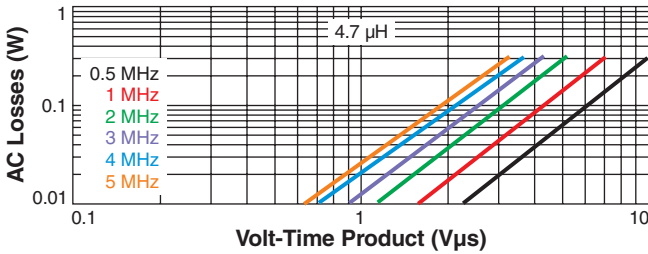
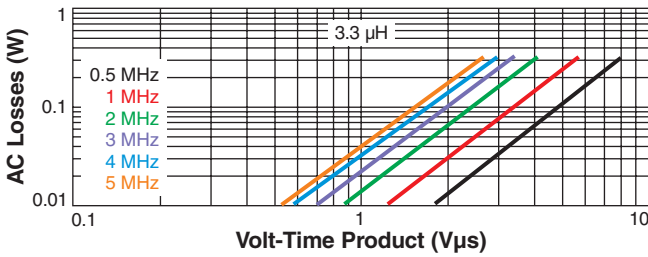
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**VERY LOW AC AND DC LOSSES**

# Shielded Power Inductor – XEL4030

## AC Losses vs Volt-Time Product



Dash number	Terminal thickness (typ) (in / mm)	Height* max (in / mm)
-101	0.0118 / 0.30	0.126 / 3.20
-201	0.0118 / 0.30	0.126 / 3.20
-301	0.0118 / 0.30	0.126 / 3.20
-471	0.0098 / 0.25	0.122 / 3.10
-641	0.0091 / 0.23	0.122 / 3.10
-911	0.0071 / 0.18	0.122 / 3.10
-102	0.0059 / 0.15	0.122 / 3.10
-122	0.0059 / 0.15	0.122 / 3.10
-152	0.0039 / 0.10	0.122 / 3.10
-222	0.0039 / 0.10	0.122 / 3.10
-332	0.0039 / 0.10	0.122 / 3.10
-472	0.0031 / 0.08	0.122 / 3.10
-682	0.0024 / 0.06	0.122 / 3.10

Dimensions are in  $\frac{\text{inches}}{\text{mm}}$

\* For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.005 inch / 0.13 mm.

**Packaging** 500/7" reel; 2000/13" reel Plastic tape: 12 mm wide, 0.23 mm thick, 8 mm pocket spacing, 3.25 mm pocket depth



# Mouser Electronics

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<a href="#"><u>XEL4030-122MED</u></a>	<a href="#"><u>XEL4030-641MED</u></a>	<a href="#"><u>XEL4030-102MED</u></a>	<a href="#"><u>XEL4030-102MEB</u></a>	<a href="#"><u>XEL4030-301MED</u></a>	<a href="#"><u>XEL4030-901MED</u></a>
<a href="#"><u>XEL4030-682MEC</u></a>	<a href="#"><u>XEL4030-101MED</u></a>	<a href="#"><u>XEL4030-152MED</u></a>	<a href="#"><u>XEL4030-641MEC</u></a>	<a href="#"><u>XEL4030-472MEB</u></a>	<a href="#"><u>XEL4030-122MEB</u></a>
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