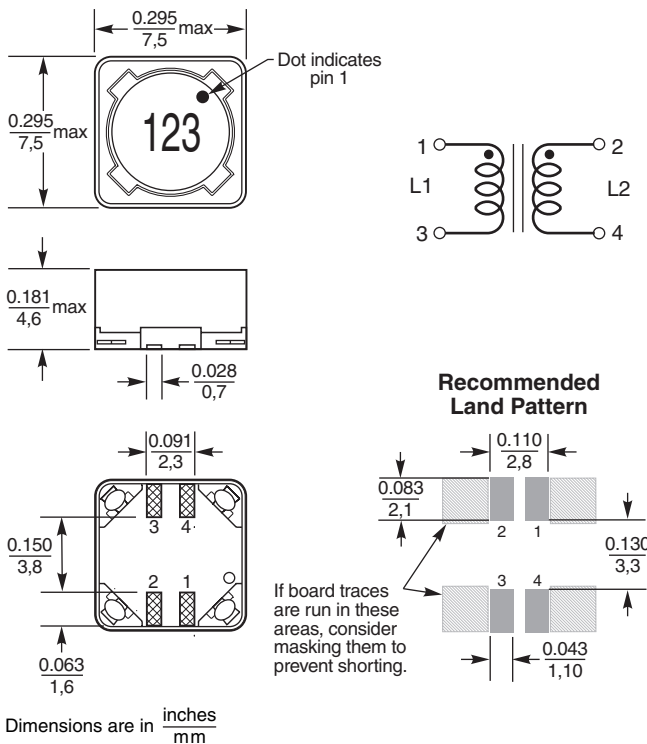
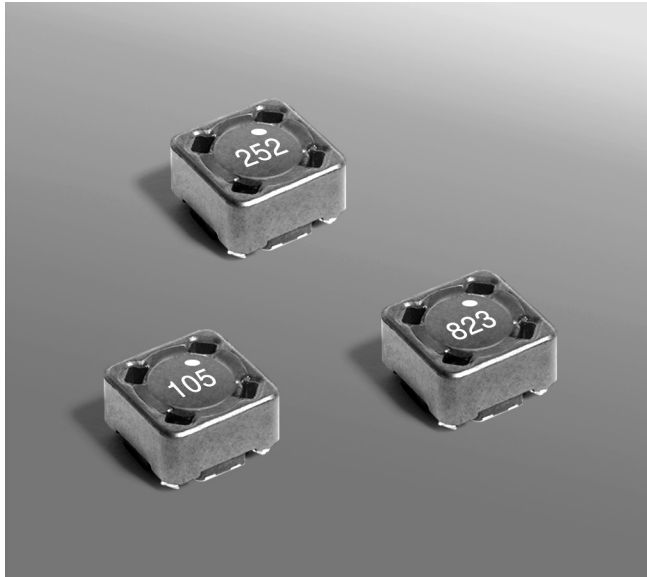
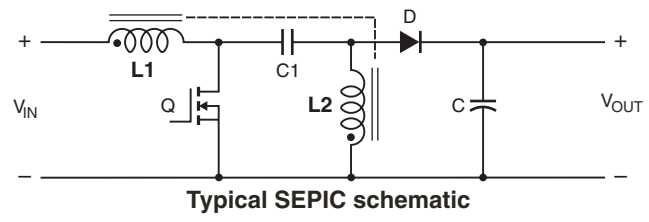
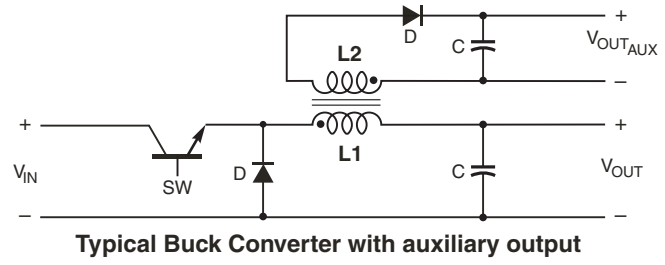
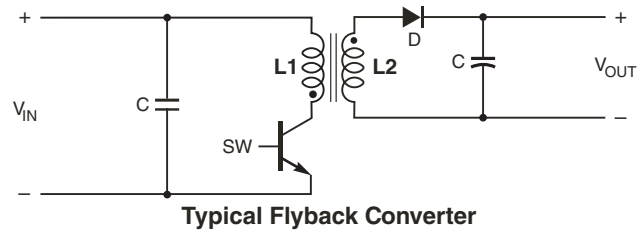




# Coupled Inductors - MSD7342 For Flyback, SEPIC and other Applications



- Tight coupling ( $k \geq 0.97$ ) and 200V isolation make the MSD7342 series of coupled inductors ideal for use in a variety of circuits including flyback, multi-output buck and SEPIC.
- They provide high inductance, high efficiency and excellent current handling in a rugged, low cost part.
- Can also be used as two single inductors connected in series or parallel, as a common mode choke or as a 1 : 1 transformer.



**Core material** Ferrite

**Core and winding loss** [Go to online calculator](#)

**Terminations** RoHS compliant matte tin over nickel over phos bronze. Other terminations available at additional cost.

**Weight** 0.76 – 0.87g

**Ambient temperature** -40°C to +85°C with Irms current, +85°C to +125°C with derated current

**Storage temperature** Component: -40°C to +125°C. Tape and reel packaging: -40°C to +80°C

**Winding to winding isolation** 200 Vrms

**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

**Packaging** 250/7" reel; 1000/13" reel Plastic tape: 16 mm wide, 0.4 mm thick, 12 mm pocket spacing, 4.9 mm pocket depth

**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf.



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# Coupled Inductors – MSD7342 Series

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>±20% (µH) | DCR max <sup>3</sup><br>(Ohms) | SRF typ <sup>4</sup><br>(MHz) | Coupling<br>coefficient<br>typ | Leakage<br>L typ <sup>5</sup><br>(µH) | Isat (A) <sup>6</sup> |             |             | Irms (A)                      |                             |
|--------------------------|--------------------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------------------------|-----------------------|-------------|-------------|-------------------------------|-----------------------------|
|                          |                                      |                                |                               |                                |                                       | 10%<br>drop           | 20%<br>drop | 30%<br>drop | both<br>windings <sup>7</sup> | one<br>winding <sup>8</sup> |
| MSD7342-252ML_           | 2.5                                  | 0.033                          | 55                            | 0.97                           | 0.14                                  | 6.0                   | 6.2         | 6.3         | 2.17                          | 3.06                        |
| MSD7342-332ML_           | 3.3                                  | 0.037                          | 43                            | 0.99                           | 0.09                                  | 5.2                   | 5.3         | 5.4         | 2.05                          | 2.89                        |
| MSD7342-472ML_           | 4.7                                  | 0.051                          | 35                            | 0.99                           | 0.11                                  | 4.1                   | 4.3         | 4.6         | 1.74                          | 2.46                        |
| MSD7342-562ML_           | 5.6                                  | 0.063                          | 32                            | 0.99                           | 0.09                                  | 3.9                   | 4.1         | 4.2         | 1.57                          | 2.22                        |
| MSD7342-682ML_           | 6.8                                  | 0.070                          | 30                            | 0.99                           | 0.14                                  | 3.7                   | 3.8         | 3.9         | 1.49                          | 2.10                        |
| MSD7342-822ML_           | 8.2                                  | 0.075                          | 27                            | 0.98                           | 0.25                                  | 3.3                   | 3.4         | 3.5         | 1.44                          | 2.03                        |
| MSD7342-103ML_           | 10                                   | 0.100                          | 22                            | 0.98                           | 0.30                                  | 2.8                   | 2.9         | 3.0         | 1.24                          | 1.76                        |
| MSD7342-123ML_           | 12                                   | 0.120                          | 20                            | 0.98                           | 0.36                                  | 2.5                   | 2.6         | 2.7         | 1.14                          | 1.61                        |
| MSD7342-153ML_           | 15                                   | 0.130                          | 18                            | 0.98                           | 0.49                                  | 2.2                   | 2.3         | 2.4         | 1.09                          | 1.54                        |
| MSD7342-183ML_           | 18                                   | 0.170                          | 15                            | >0.99                          | 0.16                                  | 2.0                   | 2.2         | 2.3         | 0.95                          | 1.35                        |
| MSD7342-223ML_           | 22                                   | 0.220                          | 13.5                          | >0.99                          | 0.20                                  | 1.9                   | 2.0         | 2.1         | 0.84                          | 1.19                        |
| MSD7342-273ML_           | 27                                   | 0.250                          | 12.0                          | >0.99                          | 0.20                                  | 1.7                   | 1.8         | 1.9         | 0.79                          | 1.11                        |
| MSD7342-333ML_           | 33                                   | 0.270                          | 11.0                          | >0.99                          | 0.15                                  | 1.5                   | 1.6         | 1.7         | 0.76                          | 1.07                        |
| MSD7342-393ML_           | 39                                   | 0.380                          | 10.0                          | 0.99                           | 0.70                                  | 1.3                   | 1.4         | 1.5         | 0.64                          | 0.90                        |
| MSD7342-473ML_           | 47                                   | 0.420                          | 9.5                           | >0.99                          | 0.30                                  | 1.2                   | 1.3         | 1.4         | 0.61                          | 0.86                        |
| MSD7342-563ML_           | 56                                   | 0.460                          | 8.7                           | >0.99                          | 0.51                                  | 1.1                   | 1.2         | 1.3         | 0.58                          | 0.82                        |
| MSD7342-683ML_           | 68                                   | 0.600                          | 7.3                           | >0.99                          | 0.51                                  | 1.0                   | 1.1         | 1.2         | 0.51                          | 0.72                        |
| MSD7342-823ML_           | 82                                   | 0.680                          | 6.2                           | 0.99                           | 1.17                                  | 0.90                  | 1.00        | 1.1         | 0.48                          | 0.67                        |
| MSD7342-104ML_           | 100                                  | 0.770                          | 5.5                           | >0.99                          | 0.96                                  | 0.80                  | 0.92        | 0.98        | 0.45                          | 0.63                        |
| MSD7342-124ML_           | 120                                  | 1.03                           | 4.5                           | >0.99                          | 0.61                                  | 0.70                  | 0.80        | 0.90        | 0.39                          | 0.55                        |
| MSD7342-154ML_           | 150                                  | 1.35                           | 4.0                           | >0.99                          | 0.54                                  | 0.65                  | 0.76        | 0.80        | 0.34                          | 0.48                        |
| MSD7342-184ML_           | 180                                  | 1.52                           | 3.8                           | >0.99                          | 0.75                                  | 0.62                  | 0.66        | 0.73        | 0.32                          | 0.45                        |
| MSD7342-224ML_           | 220                                  | 1.72                           | 3.5                           | >0.99                          | 1.43                                  | 0.59                  | 0.62        | 0.66        | 0.30                          | 0.42                        |
| MSD7342-274ML_           | 270                                  | 2.41                           | 3.3                           | >0.99                          | 1.56                                  | 0.55                  | 0.57        | 0.60        | 0.25                          | 0.36                        |
| MSD7342-334ML_           | 330                                  | 2.70                           | 3.0                           | >0.99                          | 1.65                                  | 0.49                  | 0.52        | 0.54        | 0.24                          | 0.34                        |
| MSD7342-394ML_           | 390                                  | 3.05                           | 2.8                           | 0.99                           | 4.73                                  | 0.45                  | 0.47        | 0.50        | 0.23                          | 0.32                        |
| MSD7342-474ML_           | 470                                  | 4.00                           | 2.6                           | 0.99                           | 5.50                                  | 0.41                  | 0.43        | 0.46        | 0.20                          | 0.28                        |
| MSD7342-564ML_           | 560                                  | 4.43                           | 2.5                           | >0.99                          | 4.85                                  | 0.38                  | 0.40        | 0.42        | 0.19                          | 0.26                        |
| MSD7342-684ML_           | 680                                  | 5.00                           | 2.3                           | 0.99                           | 7.59                                  | 0.36                  | 0.37        | 0.38        | 0.18                          | 0.25                        |
| MSD7342-824ML_           | 820                                  | 6.80                           | 2.2                           | >0.99                          | 8.01                                  | 0.30                  | 0.32        | 0.35        | 0.15                          | 0.21                        |
| MSD7342-105ML_           | 1000                                 | 7.80                           | 2.0                           | >0.99                          | 8.69                                  | 0.27                  | 0.29        | 0.31        | 0.14                          | 0.20                        |

1. When ordering, please specify **termination** and **packaging** codes:

**MSD7342-105MLC**

**Termination:** L = RoHS compliant matte tin over nickel over phos bronze.  
Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (250 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 (1000 parts per full reel).

- Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4284A LCR meter or equivalent. When leads are connected in parallel, inductance is the same value. When leads are connected in series, inductance is four times the value.
- DCR is for each winding. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value.
- SRF measured using an Agilent/HP 4191A or equivalent. When leads are connected in parallel, SRF is the same value.
- Leakage inductance is for L1 and is measured with L2 shorted.
- DC current, at which the inductance drops the specified amount from its value without current. It is the sum of the current flowing in both windings.
- Equal current when applied to each winding simultaneously that causes a 40°C temperature rise from 25°C ambient. See temperature rise calculation.
- Maximum current when applied to one winding that causes a 40°C temperature rise from 25°C ambient. See temperature rise calculation.
- Electrical specifications at 25°C.

Refer to Doc 639 "Selecting Coupled Inductors for SEPIC Applications."

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

## Coupled Inductor Core and Winding Loss Calculator

This web-based utility allows you to enter frequency, peak-to-peak (ripple) current, and Irms current to predict temperature rise and overall losses, including core loss. [Go to online calculator](#)



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# Coupled Inductors – MSD7342 Series

## Typical L vs Current



## Typical L vs Frequency



## Irms Derating



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Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
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- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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