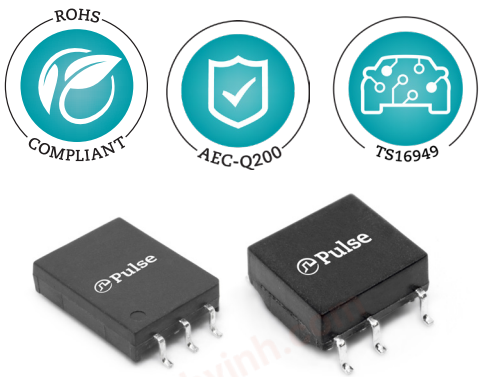
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Low profile BMS Transformers

HM1236/38NL, HM2146/47NL and HM2113ZNL

Pulse
a YAGEO company



- *Fully qualified with leading BMS Silicon ICs*
- *Designed to meet IEC/UL61558*
- *Low profile height 3.45 or 4.06mm max*
- *High temperature performance up to 125/150°C*
- *Ideal for electric vehicles (EV), Energy Storage (ESS) and marine or aviation transportation.*

Operating Temperature - see Table Below								
Part Number	**Inductance** (100kHz, 100mVrms)	**Turns Ratio**	**Choke fitted**	**Isolation breakdown** (Pri:Sec)	**Working Voltage**	**Insulation**	**Operating Temperature**	**Qualified BMS Silicon**
HM1236NL	500 uH min	1.00 +/- 2%	YES	3200Vrms / 60sec	600VDC	Functional	-40 to +125°C	MAXIM ; MAX17841B
HM1238NL	300 uH min	1.00 +/- 2%	YES	4300Vrms / 60sec	1000VDC	Functional	-40 to +150°C	MAXIM ; MAX17841B
HM2113ZNL	150 uH min	1.00 +/- 2%	YES	4300Vrms / 60sec	1000VDC	Functional	-40 to +125°C	NXP , ADI, Infineon
HM2146NL	150 uH min	1.00 +/- 1%	NO	3000Vrms / 60sec	1000VDC	Functional	-40 to +125°C	Texas Instr./ NXP, ADI
HM2147NL	500 uH min	1.00 +/- 2%	NO	4300Vrms / 60sec	1500VDC	Functional	-40 to +125°C	Texas Instr.; BQ7961x-Q1

Additional Electrical performance

Electrical (Cont...)							
Part Number	**Leakage Inductance** (Max)	**Winding DCR** (Ω)		**Insertion Loss**	**Return Loss**	**CMRR**	
		PHY Side	Line Side		|Z|out = 100 Ohm	1 - 10MHz	10- 1000MHz
HM2113ZNL	0.50 uH @ 100kHz	0.45 max	0.85 max	-0.25dB max @ 4MHz	-20dB min @ 4MHz	-35dB	-20dB
HM2146NL	0.50 uH @ 2000kHz	0.50 max	0.50 max	-0.25dB max @ 2MHz	-20dB min @ 2MHz	N/A	N/A
HM2147NL	0.50 uH @ 2000kHz	0.50 max	0.50 max	-0.25dB max @ 2MHz	-20dB min @ 2MHz	N/A	N/A

Notes:

1. Storage Temperature: -50°C to +125°C
2. Compliance to J-STD:
   A. J-STD-002: Solderability at 245°C Reflow Profile
   B. J-STD-020: Moisture Sensitive Level 1
   C. J-STD-075: R7, 245°C Maximum Through Reflow Solder
3. The NL suffix part comes in Tubes. To order tape and reel packaging add a 'T' suffix to the part number (ie: HM2146NL becomes HM2146NLT).
4. Header: DAP (Diallyl Phthalate) with flammability Rating UL 94V-0 or better
5. Lead Frame: Cooper Alloy
   Under plated: Half Hard Ductile Nickel 50-100" (1.3-2.5um)
   Over plated : 100% Tin electro-deposited per ASTM B545 300 - 50u"(8-13um)
   Finish : Matte finish 100% Tin solder
6. AEC-Q200 Qualified, PPAP on request

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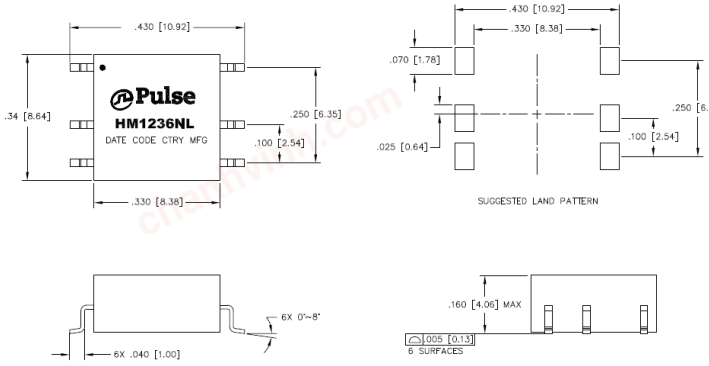
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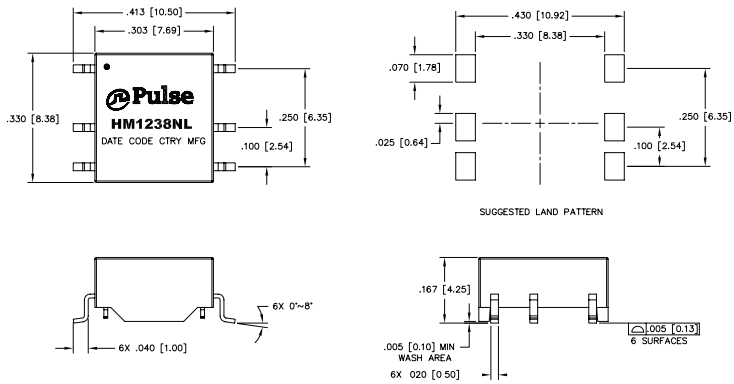
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MECHANICALS

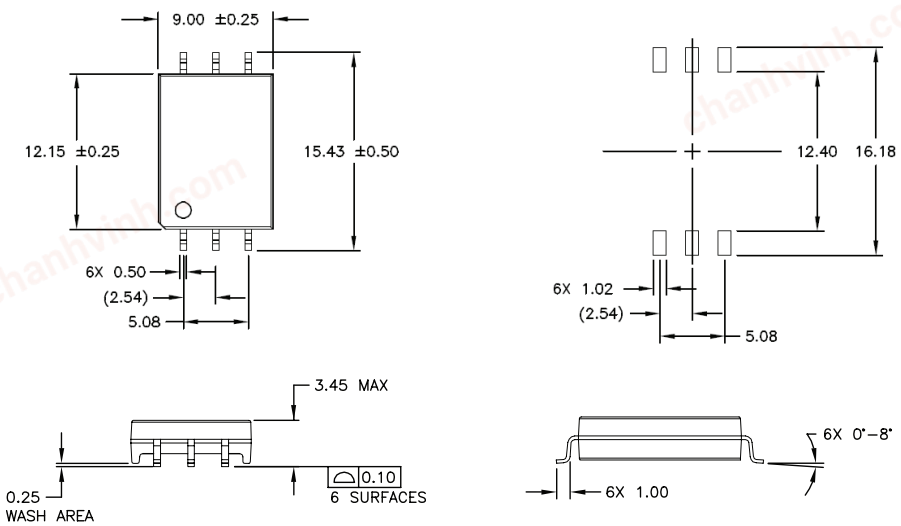
HM1236NL



HM1238NL



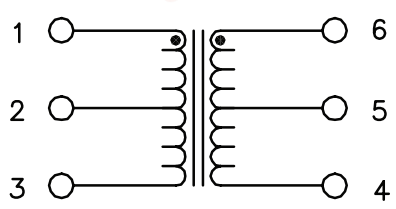
HM2113ZNL, HM2146NL, HM2147NL



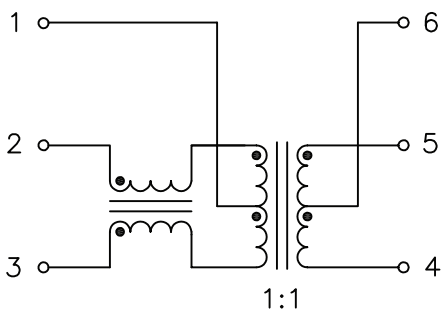
Dimensions:
Unless otherwise specified, all tolerances are ± 0,25

SCHEMATICS

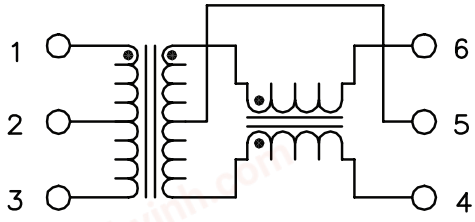
HM21464NL , HM2147NL



HM1236NL, HM1238NL



HM2113ZNL



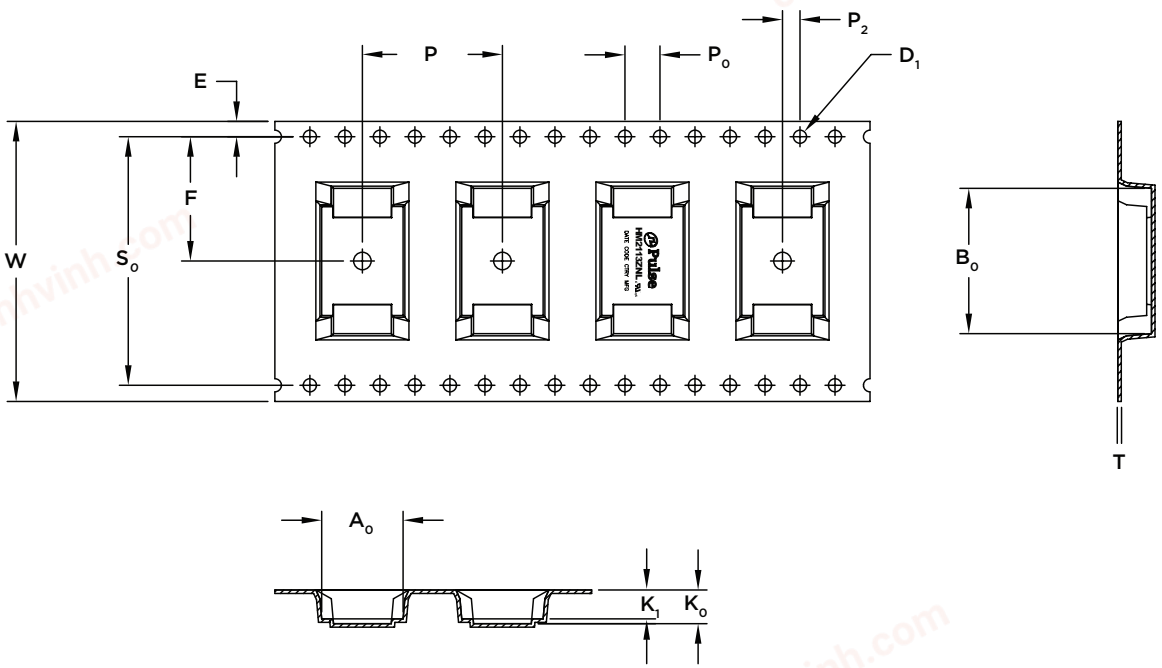
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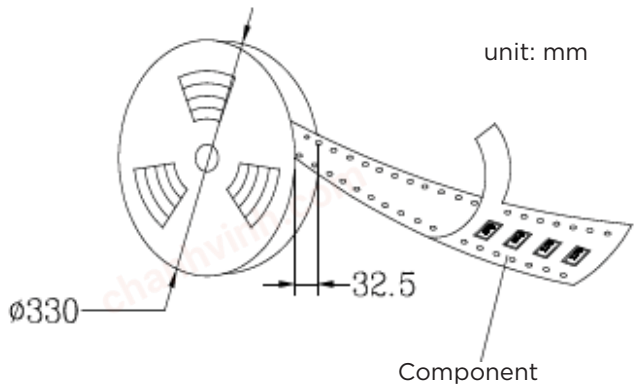
TAPE & REEL

HM2113ZNL, HM2146NL , HM2147NL



HM2113ZNL, HM2146NL , HM2147NL							
W	32.0±0.30	P	16.00	A_0	9.30	B_0	16.60
S_0	28.40	P_0	4.00	A_1	--------	B_1	--------
E	1.75	P_2	2.00	A_2	--------	B_2	--------
F	14.20	D_0	--------	K_0	3.85	K_1	3.30
T	0.40±0.05	D_1	1.50 $^{\pm0.10}_{-0.00}$	QUANTITY PER REEL			900 PCS

HM1236NL, HM1238NL							
W	24.0±0.30	P	16.00	A_0	10.82	B_0	8.83
S_0	28.40	P_0	4.00	A_1	--------	B_1	--------
E	1.75	P_2	2.00	A_2	--------	B_2	--------
F	11.50	D_0	--------	K_0	4.74	K_1	4.44
T	0.40±0.05	D_1	1.50 $^{\pm0.10}_{-0.00}$	QUANTITY PER REEL			800 pcs



1. Material: Black Conductive Polystyrene
2. Components per Reel: see table
3. Quantity per carton:
   5 reels x 900 = 4500 pcs
   6 reels x 800 = 4800 pcs

For More Information:

Americas - prodinfo_network_americas@yageo.com | **Europe -** prodinfo_network_emea@yageo.com | **Asia -** prodinfo_network_apac@yageo.com

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