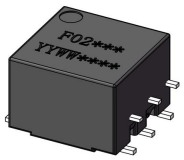
Pulse Transformers–ALTWR Series

Customized



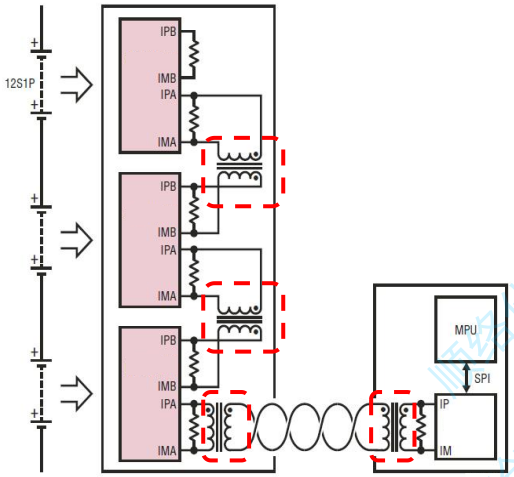
Operating Temp. : -40℃~+125℃

FEATURES

- RoHS compliant
- High reliability
- High network transmission performance
- AEC-Q200 verified

APPLICATIONS

- Daisy-Chain Communication Circuit of BMS
- Ethernet Communication Circuit



PRODUCT IDENTIFICATION

A	LT	W	R	-	F02	T	F
①	②	③	④		⑤	⑥	⑦

①	Product Type
A	Automotive

②	Type
LT	For Network Transmission Transformer

③	Structure
W	Wire

④	Feature Type

⑤	Design Code
F02	
F11	
F14	
H06	
C18	

⑥	Packing
T	Tape & Reel

⑦	HSF Products
Hazardous Substance Free	

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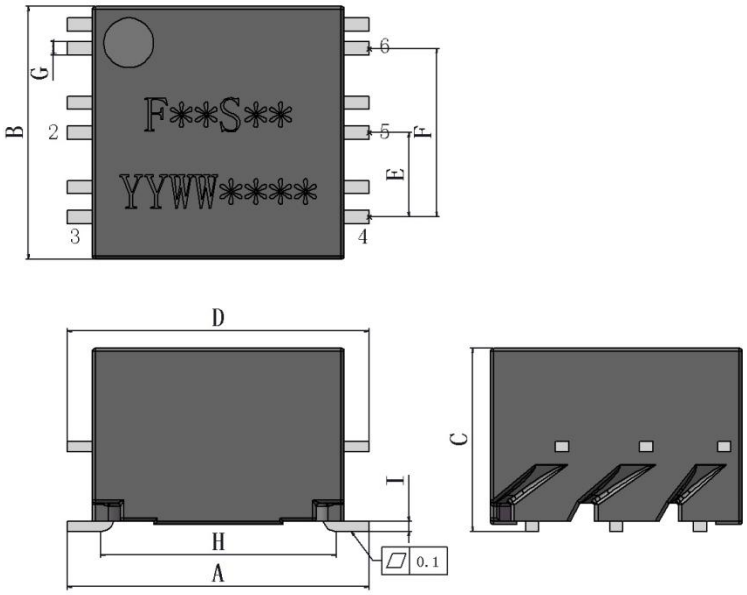
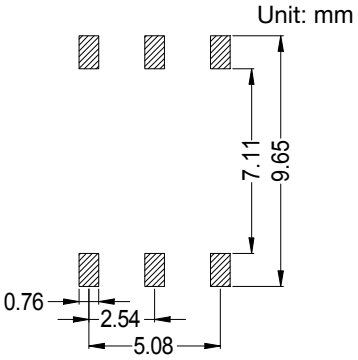
SHAPE AND DIMENSIONS

ALTWR-F02TF

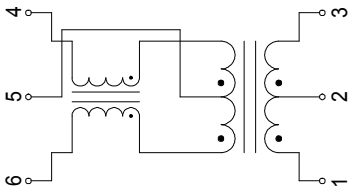


Recommended Land Pattern

Unit: mm

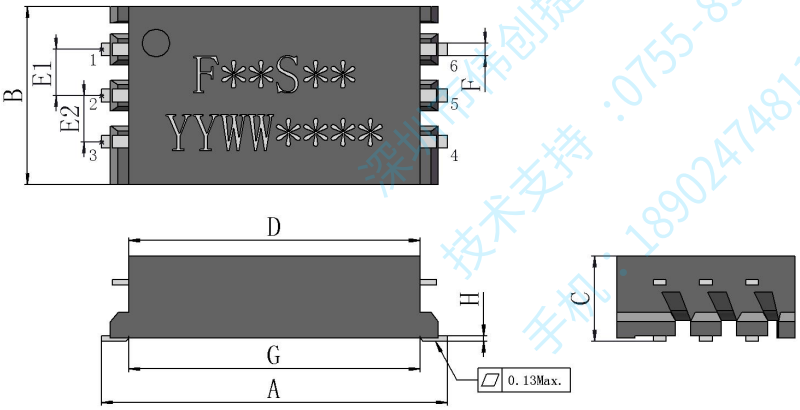


Topological diagram



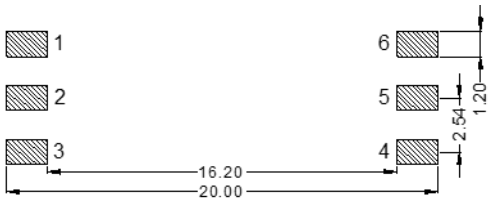
A Max.	B	C Max.	D Ref.	E	F	G Ref.	H Ref.	I Ref.
9.27	7.62±0.20	5.72	7.62	2.54±0.20	5.08±0.20	0.45	7.43	0.30

ALTWR-F11TF

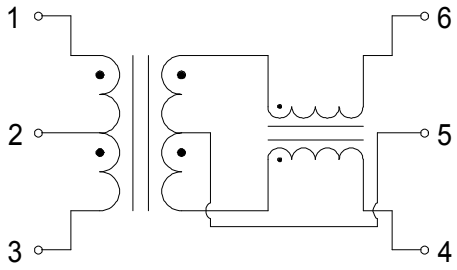


Recommended Land Pattern

Unit: mm



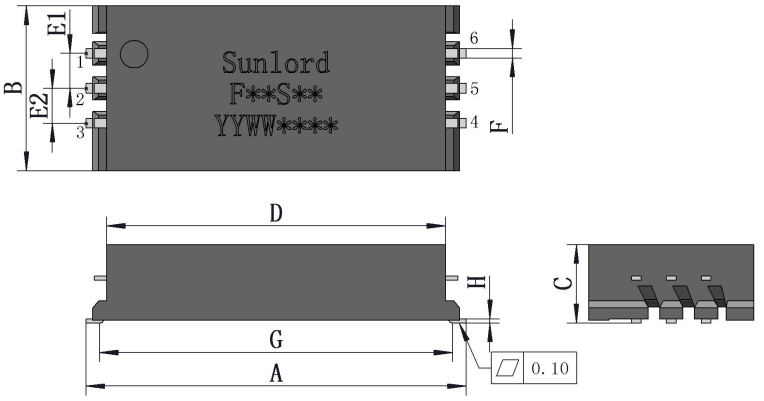
Topological diagram



A Max.	B Max.	C Max.	D Ref.	E1	E2	F	G Ref.	H Ref.
19.50	9.95	5.00	16.00	2.54±0.20	2.54±0.20	0.70±0.20	16.60	0.35

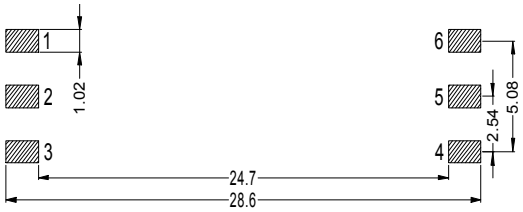
SHAPE AND DIMENSIONS

ALTWR-F14TF

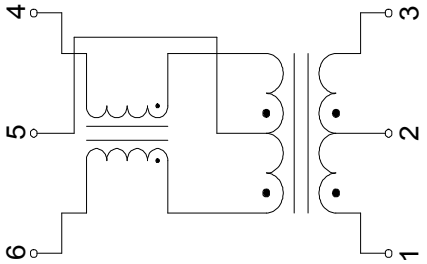


Recommended Land Pattern

Unit: mm

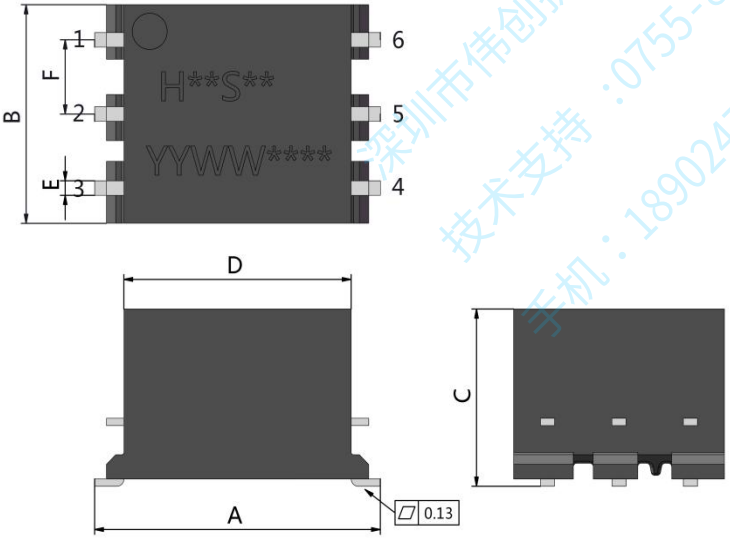


Topological diagram



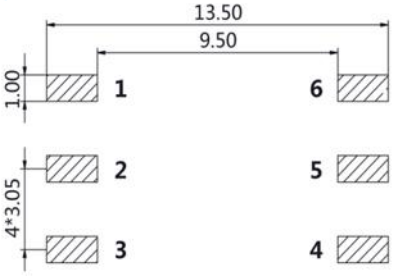
A	B	C Max.	D Ref.	E 1	E 2	F	G Ref.	H Ref.
27.85±0.50	12.00±0.20	6.00	24.75	2.54±0.20	2.54±0.20	0.50±0.20	25.75	0.30

ALTWR-H06TF

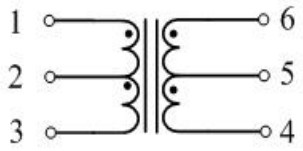


Recommended Land Pattern

Unit: mm



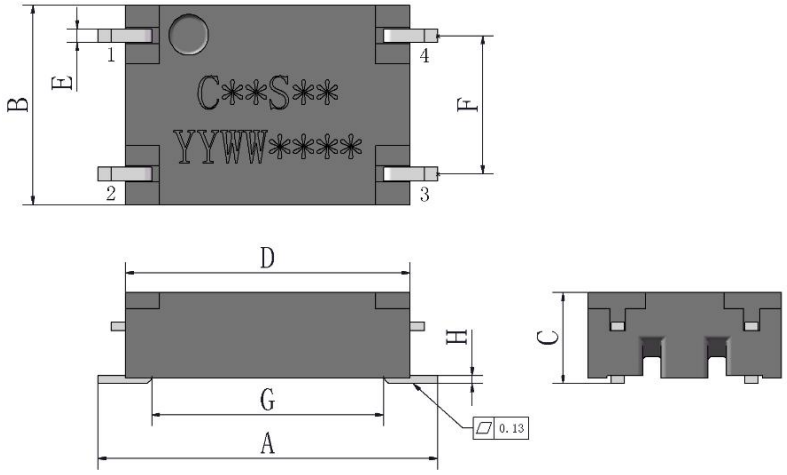
Topological diagram



A Max.	B Max.	C Max.	D Ref.	E Ref.	F
12.50	9.20	7.60	9.70	0.60	3.05±0.15

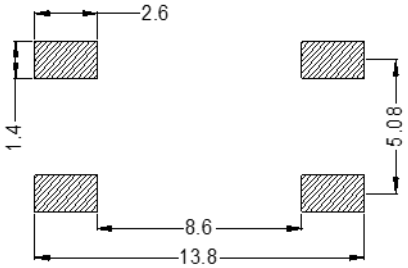
SHAPE AND DIMENSIONS

ALTWR-C18TF

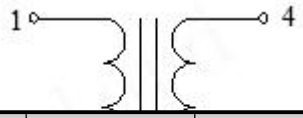


Recommended Land Pattern

Unit: mm



Topological diagram



A Max.	B Max.	C Max.	D Ref.	E Ref.	F Ref.	G Ref.	H Ref.
12.8 ± 0.50	7.50	3.50	8.20	0.50	5.08	9.0	0.30

SPECIFICATION

ALTWR-F02TF

ITEMS	TEST TERMINAL	TEST SPECIFICATION	UNITS	TEST CONDITION
Inductance	(P1-P3) , (P6-P4)	170 Min. , 350 Max.	uH	100 kHz, 0.1 V
Lk	(P1-P3) @(P6-P4) Shorted	0. 50 Max.	uH	100 kHz, 0.1 V
DCR	(P1-P3)	0.45 Max.	Ω	AT 25±5℃
	(P6-P4)	0.80 Max.		
Turn ratio	(P1-P3) : (P6-P4)	1:1±2%	/	100 kHz; 0.1 V
Hi-Pot	Pri to Sec (P1-P2-P3 to P4-P5-P6)	No breakdown	V	3000Vac/4300Vdc 1mA/50Hz/60Sec
Insertion Loss	P1,P3→P6,P4	0.30 Max.	dB	4MHz
Return Loss	P1,P3→P6,P4	20 Min.	dB	4MHz
Differential To Common Mode Rejection	P1,P3→P6,P4	35 Min.	dB	1~10MHz
		20 Min.		10~1000MHz

SPECIFICATION

ALTWR-F11TF

ITEMS	TEST TERMINAL	TEST SPECIFICATION	UNITS	TEST CONDITION
▽Ls	(P1-P3) , (P6-P4)	350 Min.	uH	100KHz,100mV, DC Bias 8mA
Lk	(P1-P3)with(P6-P4)shorted	0.40 Max.	uH	100KHz,100mV
DCR	(P1-P3)	0.90 Max.	Ω	AT 25±5℃
	(P6-P4)	1.40 Max.		
Turn ratio	(P1-P3) : (P6-P4)	1:1±2%	/	100KHz,100mV
▼ Hi-Pot	Pri to Sec (P1-P2-P3 to P4-P5-P6)	No breakdown	V	2900Vac 1mA/50Hz/60Sec
Insertion Loss	P1,P3→P6,P4	1.0 Max.	dB	1~50 MHz
		2.0 Max.	dB	50~100 MHz
Return Loss	P1,P3→P6,P4	16 Min.	dB	30 MHz
		12 Min.	dB	60 MHz
		9 Min.	dB	80 MHz
Common Mode Rejection Ratio	P1,P3→P6,P4	45 Typ.	dB	30 MHz
		40 Typ.	dB	50 MHz
		35 Typ.	dB	100 MHz

ALTWR-F14TF

ITEMS	TEST TERMINAL	TEST SPECIFICATION	UNITS	TEST CONDITION
▽Ls	(P1-P3)or(P6-P4)	150 Min. , 450 Max.	uH	100 kHz, 0.1 V
Lk	(P1-P3)@ (P6-P4) shorted	0.70 Max.	uH	100 kHz, 0.1 V
DCR	(P1-P3)	0.80 Max.	Ω	AT 25±5℃
	(P6-P4)	1.00 Max.		
Cww	（P1-P2-P3 to P4-P5-P6）	20 Max.	pF	100 kHz, 0.1 V
Turn ratio	(P1-P3) : (P6-P4)	1:1±2%	/	100 kHz, 0.1 V
▼Hi-Pot	Pri to Sec （P1-P2-P3 to P4-P5-P6）	No breakdown	V	6000Vdc 1mA/60Sec
Insertion Loss	P1,P3→P6,P4	0.50 Max.	dB	4 MHz
Return Loss	P1,P3→P6,P4	20 Min.	dB	4 MHz
CMRR	P1,P3→P6,P4	35 Min.	dB	1~10MHz
		20 Min.	dB	10~100MHz

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SPECIFICATION

ALTWR-H06TF

ITEMS	TEST TERMINAL	TEST SPECIFICATION	UNITS	TEST CONDITION
▽Ls	(P1-P3)	350±40%	uH	100 kHz, 0.1 V
Lk	(P1-P3)with(P6-P4)shorted	1.0 Max.	uH	100 kHz, 0.1 V
▽Cp	(P1-P2-P3) to (P4-P5-P6)	2~10	pF	100 kHz, 1 V
DCR	(P1-P3)	0.30 Max.	Ω	AT 25±5℃
	(P6-P4)	0.35 Max.		
Turn ratio	(P1-P3) : (P6-P4)	3:4±5%	/	100 kHz, 0.1 V
▼Hi-Pot	Pri to Sec (P1-P2-P3 to P4-P5-P6)	No breakdown	V	4000Vac 1mA/50Hz/60Sec

ALTWR-C18TF

ITEMS	TEST TERMINAL	TEST SPECIFICATION	UNITS	TEST CONDITION
▽Ls	(P1-P2)or(P4-P3)	350 Min.	uH	100 kHz, 0.1 V
Lk	(P1-P2)with(P4-P3)shorted	1.0 Max.	uH	100 kHz, 0.1 V
▽Cp	(P1-P2) to (P4-P3)	20 Max.	pF	100 kHz, 1 V
DCR	(P1-P2)	0.55 Max.	Ω	AT 25±5℃
	(P4-P3)	0.55 Max.		
Turn ratio	(P1-P2) : (P4-P3)	1:1±2%	/	100 kHz, 0.1 V
▼Hi-Pot	Pri to Sec (P1-P2 to P4-P3)	No breakdown	V	3000Vac 1mA/50Hz/60Sec

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