

Certificate Number: 121621X3-A6037

Date: 2023-06-21

UL CONDITIONS OF ACCEPTABILITY

Company Name: TRACO ELECTRONIC AG

File-CCN: E188913- QQJQ2, QQJQ8

Product Description: POWER SUPPLIES FOR USE WITH AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT - COMPONENT

Models: TIM 6-1211(a), TIM 6-1212(a), TIM 6-1213(a), TIM 6-1221(a), TIM 6-1222(a), TIM 6-1223(a), TIM 6-2411(a), TIM 6-2412(a), TIM 6-2413(a), TIM 6-2421(a), TIM 6-2422(a), TIM 6-2423(a), TIM 6-4811(a), TIM 6-4812(a), TIM 6-4813(a), TIM 6-4821(a), TIM 6-4822(a), TIM 6-4823(a), TIM 6-1211-A1(a), TIM 6-1212-A1(a), TIM 6-1213-A1(a), TIM 6-1221-A1(a), TIM 6-1222-A1(a), TIM 6-1223-A1(a), TIM 6-2411-A1(a), TIM 6-2412-A1(a), TIM 6-2413-A1(a), TIM 6-2421-A1(a), TIM 6-2422-A1(a), TIM 6-2423-A1(a), TIM 6-4811-A1(a), TIM 6-4812-A1(a), TIM 6-4813-A1(a), TIM 6-4821-A1(a), TIM 6-4822-A1(a), TIM 6-4823-A1(a)

Conditions Of Acceptability: For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- The following output circuits are at ES1 energy levels : Output
- The following output circuits are at PS2 energy levels : Output
- The investigated Pollution Degree is : 2
- Proper bonding to the end-product main protective earthing termination is : Not required
- The following end-product enclosures are required : Electrical, Fire, Mechanical
- The terminals of the DC-DC Converter are only suitable for factory wiring only.
- The need for suitable electrical enclosure (for ES safeguard), fire enclosure (for PS safeguard), mechanical enclosure (for MS safeguard) and safeguard for thermal burn injury (for TS safeguard) is to be evaluated and provided (if necessary) in the end-product.
- The DC-DC Converter was evaluated for Reinforced Insulation between input and output circuits and is intended to be supplied by an isolated or non-isolated DC source.
- Tests for Abnormal operating and Single Fault conditions were carried out with an external, time-delay fuse having a current rating 1.25 A for TIM 6-12 series; 0.63 A for TIM 6-24 series; 0.315 A for TIM 6-48 series, manufactured by Littelfuse, type 215; Tests should be repeated when it's employed in the end-use equipment with a differently rated overcurrent protective device.
- Prospective touch voltage has been considered on converter output pins, touch voltage with respect to earth may be considered in the end product.
- The equipment was evaluated for a maximum operating altitude of 5000 m and clearances were considered and the required clearances were multiplied with an altitude correction factor of 1.48.

Ratings: All models are similar except for PWB layout, schematic, transformer (T1).

Model Name	PCB	Schematics	Input Range	I_{IN} (A)	V_{OUT} (V d.c.)	I_{OUT} (mA)	P_{OUT} (VA)	T1
TIM 6-1211(a)	A	Single-output	9-18 V d.c.	0.794	5	1200	6	A
TIM 6-1212(a)	A	Single-output	9-18 V d.c.	0.766	12	500	6	B
TIM 6-1213(a)	A	Single-output	9-18 V d.c.	0.775	15	400	6	C

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Model Name	PCB	Schematics	Input Range	I_{IN} (A)	V_{OUT} (V d.c.)	I_{OUT} (mA)	P_{OUT} (VA)	T1
TIM 6-2411(a)	A	Single-output	18-36 V d.c.	0.397	5	1200	6	A
TIM 6-2412(a)	A	Single-output	18-36 V d.c.	0.383	12	500	6	B
TIM 6-2413(a)	A	Single-output	18-36 V d.c.	0.383	15	400	6	C
TIM 6-4811(a)	A	Single-output	36-75 V d.c.	0.198	5	1200	6	D
TIM 6-4812(a)	A	Single-output	36-75 V d.c.	0.192	12	500	6	E
TIM 6-4813(a)	A	Single-output	36-75 V d.c.	0.194	15	400	6	E
TIM 6-1221(a)	B	Dual-output	9-18 V d.c.	0.803	± 5	±600	6	A
TIM 6-1222(a)	B	Dual-output	9-18 V d.c.	0.766	± 12	±250	6	B
TIM 6-1223(a)	B	Dual-output	9-18 V d.c.	0.775	± 15	±200	6	C
TIM 6-2421(a)	B	Dual-output	18-36 V d.c.	0.397	± 5	±600	6	A
TIM 6-2422(a)	B	Dual-output	18-36 V d.c.	0.388	± 12	±250	6	B
TIM 6-2423(a)	B	Dual-output	18-36 V d.c.	0.388	± 15	±200	6	C
TIM 6-4821(a)	B	Dual-output	36-75 V d.c.	0.201	± 5	±600	6	D
TIM 6-4822(a)	B	Dual-output	36-75 V d.c.	0.192	± 12	±250	6	E
TIM 6-4823(a)	B	Dual-output	36-75 V d.c.	0.196	± 15	±200	6	E
TIM 6-1211-A1(a)	C	Single-output	9-18 V d.c.	0.794	5	1200	6	A
TIM 6-1212-A1(a)	C	Single-output	9-18 V d.c.	0.766	12	500	6	B
TIM 6-1213-A1(a)	C	Single-output	9-18 V d.c.	0.775	15	400	6	C
TIM 6-2411-A1(a)	C	Single-output	18-36 V d.c.	0.397	5	1200	6	A
TIM 6-2412-A1(a)	C	Single-output	18-36 V d.c.	0.383	12	500	6	B
TIM 6-2413-A1(a)	C	Single-output	18-36 V d.c.	0.383	15	400	6	C
TIM 6-4811-A1(a)	C	Single-output	36-75 V d.c.	0.198	5	1200	6	D
TIM 6-4812-A1(a)	C	Single-output	36-75 V d.c.	0.192	12	500	6	E
TIM 6-4813-A1(a)	C	Single-output	36-75 V d.c.	0.194	15	400	6	E
TIM 6-1221-A1(a)	D	Dual-output	9-18 V d.c.	0.803	± 5	±600	6	A
TIM 6-1222-A1(a)	D	Dual-output	9-18 V d.c.	0.766	± 12	±250	6	B
TIM 6-1223-A1(a)	D	Dual-output	9-18 V d.c.	0.775	± 15	±200	6	C
TIM 6-2421-A1(a)	D	Dual-output	18-36 V d.c.	0.397	± 5	±600	6	A
TIM 6-2422-A1(a)	D	Dual-output	18-36 V d.c.	0.388	± 12	±250	6	B
TIM 6-2423-A1(a)	D	Dual-output	18-36 V d.c.	0.388	± 15	±200	6	C
TIM 6-4821-A1(a)	D	Dual-output	36-75 V d.c.	0.201	± 5	±600	6	D
TIM 6-4822-A1(a)	D	Dual-output	36-75 V d.c.	0.192	± 12	±250	6	E
TIM 6-4823-A1(a)	D	Dual-output	36-75 V d.c.	0.196	± 15	±200	6	E

Nomenclature: (a) - Stands for 6 variables, each variable may be A through Z, 0 through 9, “-”, “(”, “)”, “.”, “/” or blank.