

MESSRS :

Reliability Test Data

CUSTOMER'S PRODUCT NAME:

TDK-Lambda
PRODUCT NAME: DC/DC CONVERTER UNIT ALD-514012PJ134



TDK-Lambda Corporation

PREPARED BY	APPROVED BY	AUTHORIZED BY
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[1] Test Sample

High Temperature Continuous Operation : ALD-514012PJ134 3pcs. for each
 Other Test Items : ALD-414012PJ133 3pcs. for each

[2] Test Condition

Input Voltage Vin : 12.0 [V]
 Dimming Conditions Vbr : 0.0 [V] Max. Brightness
 ADIM: 0.0 [V] Max. Brightness
 Load RL : 280 [Ω]

*ALD-514012PJ134 is using the same PCB board as ALD-414012PJ133 and that is the product to add 1 output to ALD-414012PJ133. Therefore the test items other than the high-temperature operation will use the data of ALD-414012PJ133.

[3] Result

The test result is shown on the next page. There was no problem.
 The measurement condition and Instrument depends on the following.

Measurement Condition

Input Voltage Vin : 12.0 [V]
 Dimming Conditions Vbr : 0.0 [V] Max. Brightness
 ADIM: 0.0 [V] Max. Brightness
 Load RL : 180 [Ω]
 Ambient temp Ta : 25 [$^{\circ}\text{C}$]

Measuring Instrument

Power supply : PAR160A(KIKUSUI) or equivalent
 Input DC current meter : R6840(ADVANTEST) or equivalent
 Output DC current meter : 187 (FLUKE) or equivalent
 Frequency counter : 187 (FLUKE) or equivalent

[4] Test Item

Item	Condition	Judgement Standard
High Temperature Continuous Operation	85 $^{\circ}\text{C}$, 500hrs.	Electrical and appearance should be in the spec.
Heat Shock	-40 $^{\circ}\text{C}$ <-> 85 $^{\circ}\text{C}$ 30min./each 100cycles	
Humidity Environment Off and on Operation	60 $^{\circ}\text{C}$ 90%R.H. On 1hr / Off 3hrs. 500cycles.	
Vibration	5~10Hz Amplitude 10mm 10~200Hz Accelerated Verocity 21.6m/s ² (2.2G) Log Sweep :10min. X,Y,Z direction 60min/each total 3hrs.	
Shock	588m/s ² (60G) 11ms Half-sine wave once each axis X,Y,Z,-X,-Y,-Z total 6times	

TDK-Lambda	No.	MATERIALS NAME	QU	MATERIAL	REMARK
	PRODUCT NAME or MODEL,TITLE				
	DC/DC CONVERTER UNIT ALD-514012PJ134				
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High Temperature Continuous Operation

	No.	Iin [A]	Iout1 [mA]	Iout2 [mA]	Iout3 [mA]	Iout4 [mA]	Iout5 [mA]	F [Hz]
Before Test	1	1.72	143.1	141.8	141.0	140.8	140.3	194
	2	1.70	139.7	140.8	142.2	142.4	141.0	194
	3	1.73	143.5	141.4	143.0	139.2	143.1	196
After Test	1	1.73	143.4	142.4	141.8	141.3	140.7	195
	2	1.72	140.7	141.8	142.6	142.8	141.4	195
	3	1.72	143.4	141.7	142.7	139.2	143.0	197
Supper		2.00	168.0	168.0	168.0	168.0	168.0	240
Slower		1.20	112.0	112.0	112.0	112.0	112.0	160
Judgement		OK	OK	OK	OK	OK	OK	OK

Heat Shock

	No.	Iin [A]	Iout1 [mA]	Iout2 [mA]	Iout3 [mA]	Iout4 [mA]	F [Hz]
Before Test	4	1.49	150.5	146.2	146.0	144.9	196
	5	1.42	144.6	142.5	142.9	144.3	196
	6	1.43	145.0	144.6	143.4	144.7	196
After Test	4	1.49	150.5	146.2	146.1	145.0	196
	5	1.42	144.6	142.6	142.9	144.4	196
	6	1.43	145.1	144.7	143.6	144.9	196
Supper		1.60	168.0	168.0	168.0	168.0	240
Slower		0.95	112.0	112.0	112.0	112.0	160
Judgement		OK	OK	OK	OK	OK	OK

Humidity Environment Off and on Operation

	No.	Iin [A]	Iout1 [mA]	Iout2 [mA]	Iout3 [mA]	Iout4 [mA]	F [Hz]
Before Test	7	1.36	140.4	143.2	140.5	143.5	198
	8	1.43	144.7	145.6	144.7	143.7	196
	9	1.45	144.3	146.7	145.2	146.9	194
After Test	7	1.37	141.4	143.2	140.6	143.9	198
	8	1.42	143.9	144.5	144.0	143.5	196
	9	1.45	144.5	146.8	145.2	147.3	195
Supper		1.60	168.0	168.0	168.0	168.0	240
Slower		0.95	112.0	112.0	112.0	112.0	160
Judgement		OK	OK	OK	OK	OK	OK

Vibration -> Shock

	No.	Iin [A]	Iout1 [mA]	Iout2 [mA]	Iout3 [mA]	Iout4 [mA]	F [Hz]
Before Test	10	1.40	146.2	140.2	143.6	142.6	198
	11	1.41	144.1	143.0	143.6	141.5	195
	12	1.46	148.8	146.6	143.2	145.3	199
After Test	10	1.42	147.0	141.0	144.6	143.6	198
	11	1.42	142.6	141.3	141.9	140.0	195
	12	1.43	147.6	145.4	142.2	144.3	199
Supper		1.60	168.0	168.0	168.0	168.0	240
Slower		0.95	112.0	112.0	112.0	112.0	160
Judgement		OK	OK	OK	OK	OK	OK

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