



# Test Report: RSD-500C-24

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500W Enclosed Type Reliable Railway DC-DC Converter

## ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Control Function Test

Component Stress Test

## ■ SAFETY & E.M.C. TEST

Safety Test

E.M.C. Test

## ■ RELIABILITY TEST

ENVIRONMENT TEST

## DESIGN VERIFY TEST

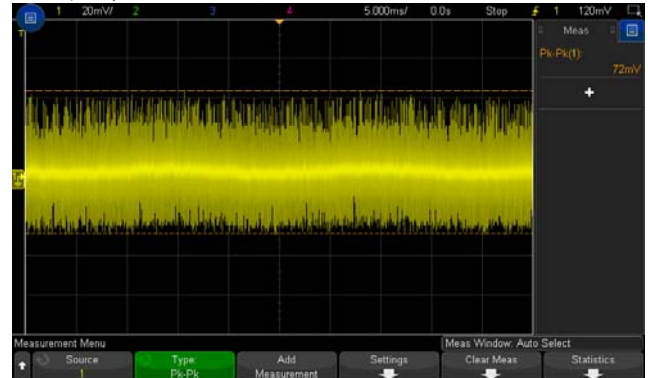
### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 24V~ 28V	I/P: 48VDC O/P : MIN LOAD Ta : 25°C	22.936V~29.224V
2	OUTPUT VOLTAGE TOLERANCE (Max)	V1: -1%~+1 %	I/P:33.6VDC /70.2 VDC O/P:FULL/ MIN. LOAD Ta:25°C	V1:-0.096%~0.021%
3	LINE REGULATION (Max)	V1: -0.5%~+0.5 %	I/P: 33.6VDC / 70.2 VDC O/P:FULL LOAD Ta:25°C	V1: -0.0166 %~ 0.021%
4	LOAD REGULATION (Max)	V1: -1%~ +1 %	I/P: 48VDC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.096%~0.0166%
5	OVER/UNDERSHOOT TEST	< ±5%	I/P: 48VDC O/P:FULL LOAD Ta:25°C	TEST:2.1%
6	RIPPLE & NOISE (Max)	V1:120mVp-p	I/P: 48VDC O/P:FULL LOAD Ta:25°C	V1: 72mVp-p

high frequency :



low frequency :

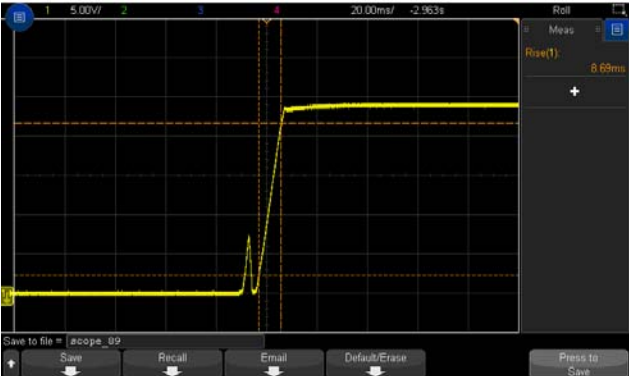

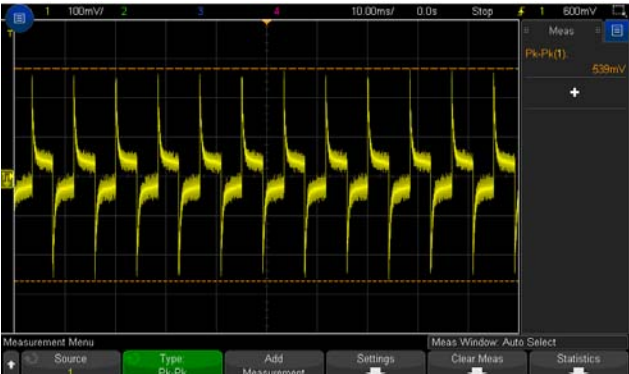
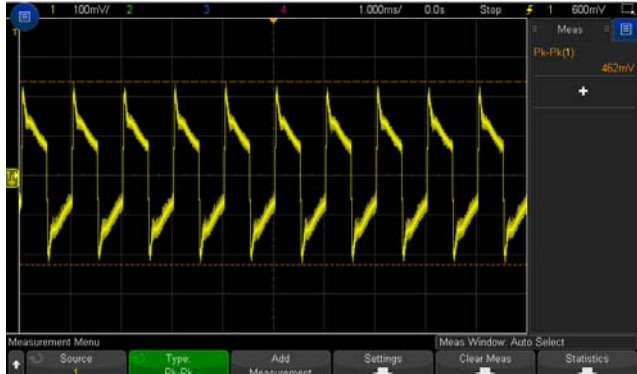


7	SET UP TIME (Max)	48VDC/ 500ms	I/P: 48VDC O/P:FULL LOAD Ta:25°C	84ms
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INPUT= 48VDC @ FULL LOAD

CH1 : Output Voltage CH2 : DC Input Voltage

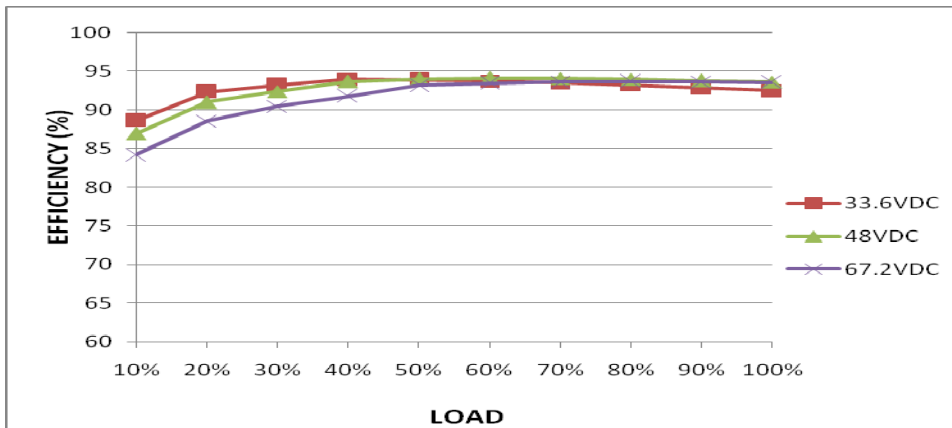


8	RISE TIME (Max)	48VDC /60ms	I/P: 48VDC O/P:FULL LOAD Ta:25°C	8.69ms
<p>INPUT=48 VDC @ FULL LOAD CH1 : Output Voltage</p> 				
9	HOLD UP TIME (TYP)	48VDC /3 ms	I/P: 48VDC O/P:FULL LOAD Ta:25°C	9.2 ms
<p>INPUT=48 VDC @ FULL LOAD CH1 : Output Voltage CH2 : DC Input Voltage</p> 				
10	TRANSIENT RECOVERY TIME	V1:2400mVp-p	I/P: 48VDC O/P:40% LOAD CHANGE 50%DUTY/120HZ	466mVp-p
11	DYNAMIC LOAD	V1: 2400mVp-p	I/P: 48VDC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C	539mVp-p 462mVp-p
<p>FULL /50% LOAD 50%DUTY / 120HZ</p>  <p>FULL /50% LOAD 50%DUTY / 1KHZ</p> 				

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	33.6VDC~67.2VDC 28.8 VDC~ 33.6VDC/1s	I/P:TESTING O/P:FULL LOAD Ta:25°C	(1) 27.2V~ 67.2V (2) TEST:OK
			I/P: LOW-LINE-0.2= 33.4 V HIGH-LINE+3V= 70.2 V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec . OFF: 30 Sec 10MIN ( POWER ON/OFF NO DAMAGE )	TEST:OK
2	INPUT CURRENT(TYP)	48VDC/ 11A	I/P: 48VDC O/P:FULL LOAD Ta:25°C	I=10.26A
3	EFFICIENCY(TYP)	93 %	I/P: 48VDC O/P:FULL LOAD Ta:25°C	93.68%

EFFICIENCY vs LOAD



4	INRUSH CURRENT(TYP)	30 A COLD START	I/P: 48VDC O/P:FULL LOAD Ta:25°C	I=18.1A
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INPUT= VDC @ FULL LOAD

CH2 : DC Input Voltage CH4 : Input current



5	INTERRUPTION OF VOLTAGE SUPPLY	B/C- type comply with S2 level (10ms)@ 70% load ;	I/P: 48VDC SHORT O/P: TESTING Ta:25°C	11.9ms/70% load
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**PROTECTION FUNCTION TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~ 135% RATED OUTPUT POWER	I/P: 33.6 VDC I/P: 48 VDC I/P: 67.2 VDC O/P: TESTING Ta:25°C	120.94%/ 33.6 VDC 121.04%/ 48 VDC 120.83%/ 67.2 VDC PROTECTION TYPE : Constant current limiting 105%~135% rated output power with auto-recovery .
2	OVER VOLTAGE PROTECTION	CH: 28.8 V~ 35 V	I/P: 33.6 VDC I/P: 48 VDC I/P: 67.2 VDC O/P: MIN LOAD Ta:25°C	30.9V/ 33.6 VDC 30.9V/ 48 VDC 30.9V/ 67.2 VDC PROTECTION TYPE : Shut down O/P voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	SPEC:  NO DAMAGE	I/P: 67.2/33.6 VDC O/P: FULL LOAD	O.T.P. Active PROTECTION TYPE : Shut down O/P voltage, re-power on to recover
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 67.2/33.6 VDC O/P: FULL LOAD Ta:25°C	NO DAMAGE PROTECTION TYPE : Constant current limiting with auto-recovery recovers automatically after fault condition is removed
5	INPUT REVERSE	POWER OK	I/P: 67.2/33.6 VDC O/P: FULL LOAD Ta:25°C	NO DAMAGE
6	INPUT UNDER VOLTAGE PROTECTION	48 VIN (C-TYPE) : POWER ON >=33.6V POWER OFF <=33V	I/P: TESTING O/P: FULL LOAD Ta:25°C	TEST : POWER ON >= 28.337 V POWER OFF <= 27.103 V

**COMPONENT STRESS TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q 10/Q12/ Q21/Q23 Rated : 65 A/ 200 V	DC ON/OFF  I/P: High-Line +3V =70.2V VDS: O/P: (1) Full Load (2) Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7) 0%→400% Load. Ta:25°C	Q10 Q12 VDS: VDS: (1) 106.8V (1) 107.4V (2) 134.1V (2) 138.0V (3) 147.6V (3) 146V (4) 132V (4) 125.9V (5) 125.9V (5) 128.3V (6) 129.1V (6) 130.7V (7) 159V (7) 159V  Q21 Q23 VDS: VDS: (1) 105.8V (1) 105.8V (2) 129.1V (2) 128.3V (3) 144.4V (3) 145.2V (4) 118.7V (4) 113V (5) 108.2V (5) 109.8V (6) 127.5V (6) 127.5V (7) 149V (7) 152V
2	Clamp MOSFET (D to S) or (C to E) Peak Voltage	Q8/Q19 Rated : 34A/ 200 V	DC ON/OFF	Q8 Q19 VDS: VDS:

			<p>I/P:High-Line +3V =70.2V  VDS:  O/P: (1)Full Load  (2)Output Short  (3)Dynamic Load Full Load/  Min. Load 90%Duty/1KHz  (4)Dynamic Load Full Load/  Min. Load 90%Duty/3KHz  (5)Dynamic Load Full Load/  Min. Load 90%Duty/5KHz  (6)Dynamic Load 100% Load/  Min. Load 50%Duty/120Hz  (7)0%→400% Load.  Ta:25°C</p>	<p>(1) 81.7V  (2) 125.1V  (3) 148V  (4) 129.1V  (5) 121.1V  (6) 121.1V  (7) 149V</p>	<p>(1) 85.7V  (2) 121.1V  (3) 160V  (4) 111.4V  (5) 109.8V  (6) 112.2V  (7) 141V</p>
2	Diode Peak Voltage	<p>Q100/Q200 Rated  : 20 A/ 200 V    Q103/Q105 Rated  : 65 A/ 200 V</p>	<p>DC ON/OFF  I/P:High-Line +3V =70.2 V  VOmax:  O/P: (1)Full Load  (2)Output Short  (3)Dynamic Load Full Load/  Min. Load 90%Duty/1KHz  (4)Dynamic Load Full Load/  Min. Load 90%Duty/3KHz  (5)Dynamic Load Full Load/  Min. Load 90%Duty/5KHz  (6)Dynamic Load 100% Load/  Min. Load 50%Duty/120Hz  (7)0%→400% Load.  (8).NO LOAD  VO:  O/P: (1)Full Load  Ta:25°C</p>	<p>Q100:  VOmax:  VDS:  (1) 117.9V  (2) 148.4V  (3) 182V  (4) 178V  (5) 178V  (6) 174V  (7) 101V  (8) 82.5V  VO:  (1) 116.3V    Q103:  VOmax:  VDS:  (1) 162V  (2) 170V  (3) 174V  (4) 164V  (5) 164V  (6) 174V  (7) 175V  (8) 154V  VO:  (1) 160V</p>	<p>Q200:  VOmax:  VDS:  (1) 117.3V  (2) 144.3V  (3) 190V  (4) 174V  (5) 174V  (6) 166V  (7) 107.3V  (8) 80.7V  VO:  (1) 98.8V    Q105:  VOmax:  VDS:  (1) 153V  (2) 157V  (3) 167V  (4) 157V  (5) 157V  (6) 163V  (7) 160V  (8) 149V  VO:  (1) 153V</p>
3	Input Capacitor Voltage	<p>C5/C35 Rated:  : 820 μ/ 80 V</p>	<p>I/P:High-Line +3V =70.2V  O/P: (1)Full Load input on/off  (2) Min load input on /Off  (3)Full Load /Min load Change  (4)Full load continue  Ta:25°C</p>	<p>C5  (1)78V  (2)75.3V  (3)72.3V  (4) 71.5V</p>	<p>C35  (1)78V  (2)76.3V  (3)72.3V  (4) 71.5V</p>
4	Control IC Voltage Test	<p>PWM IC U4 Rated  7.5V~ 15 V  O/P U100 /U101 Rated  -0.3V~ 27 V  O/P U201 Rated  0V~ 32 V</p>	<p>DC ON/OFF  I/P:High-Line +3V =70.2 V  O/P(1)FULL LOAD  (2) Output Short  (3)O.L.P  (4)O.V.P.  (5)NO LOAD VRmin(LOW LINE)</p>	<p>U4  (1) 14.07V  (2) 14.07V  (3) 14.07V  (4) 14.07V  (5) 12.38V    U100  (1) 10.85V</p>	<p>U201  (1) 13.5V  (2) 13.5V  (3) 13.5V  (4) 20.3V  (5) 12.5V    U101  (1) 10.4V</p>



			Ta:25°C	(2) 10.85V (3) 10.93V (4) 11.01V (5) 10.85V	(2) 10.29V (3) 10.37V (4) 10.29V (5) 10.4V
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**SAFETY TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	EN 60950-1 I/P-O/P:4KVDC/min I/P-FG:2.5 KVDC/min O/P-FG:2.5KVDC/min	I/P-O/P: 4.4KVDC/min I/P-FG: 3 KVDC/min O/P-FG:3KVDC/min Ta:25°C	I/P-O/P: 0.2 uA I/P-FG: 0.4 uA O/P-FG: 0 uA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG:500VDC>100MΩ	I/P-O/P: 600 VDC I/P-FG: 600 VDC O/P-FG: 600 VDC Ta:25°C	I/P-O/P: 10 GΩ I/P-FG: 10 GΩ O/P-FG: 10 GΩ NO DAMAGE
3	GROUNDING CONTINUITY	EN 60950-1 FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	4mΩ

**E.M.C TEST**

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	RADIATION	EN55032 CLASS B	I/P: 48VDC O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab
2	CONDUCTION	EN55032 CLASS A	I/P:48VDC O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab
3	E.S.D	EN61000-4-2 <input type="checkbox"/> MEDICAL AIR: 15KV / Contact: 8KV <input type="checkbox"/> LIGHT INDUSTRY AIR: 8KV / Contact: 4KV <input checked="" type="checkbox"/> INDUSTRY AIR: 8KV / Contact: 6KV	I/P: 48VDC O/P:FULL LOAD Ta:25°C	<input checked="" type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B
4	E.F.T	EN61000-4-4 <input type="checkbox"/> LIGHT INDUSTRY INPUT: 0.5KV <input type="checkbox"/> MEDICAL <input checked="" type="checkbox"/> INDUSTRY INPUT: 2KV	I/P:48VDC O/P:FULL LOAD Ta:25°C	<input checked="" type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B
5	SURGE	IEC61000-4-5 <input checked="" type="checkbox"/> INDUSTRY L-N :1KV L,N-PE:2KV	I/P:48VDC O/P:FULL LOAD Ta:25°C	<input checked="" type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B
6	Test by certified Lab & Test Report Prepare Any contradictions of the test results, please refer to the latest EMC test report			

■ RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																																																																																																																								
1	TEMPERATURE RISE TEST	MODEL : RSD-500C-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 48 VDC O/P : FULL LOAD Ta= 25 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 48 VDC O/P : FULL LOAD Ta= 55 °C																																																																																																																																																																										
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 25 °C</th> <th>HIGH AMBIENT Ta= 55 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>Q2</td><td>58.6°C</td><td>89.3°C</td></tr> <tr><td>2</td><td>ZNR1</td><td>52.5°C</td><td>83.2°C</td></tr> <tr><td>3</td><td>U1</td><td>69.4°C</td><td>101.4°C</td></tr> <tr><td>4</td><td>T3</td><td>65.3°C</td><td>95.6°C</td></tr> <tr><td>5</td><td>T4</td><td>64.8°C</td><td>95.1°C</td></tr> <tr><td>6</td><td>C17</td><td>62.6°C</td><td>93.1°C</td></tr> <tr><td>7</td><td>LF1</td><td>62.0°C</td><td>93.0°C</td></tr> <tr><td>8</td><td>D2</td><td>58.5°C</td><td>89.1°C</td></tr> <tr><td>9</td><td>C6</td><td>64.1°C</td><td>94.3°C</td></tr> <tr><td>10</td><td>Q19</td><td>62.3°C</td><td>93.0°C</td></tr> <tr><td>11</td><td>Q23</td><td>66.9°C</td><td>98.7°C</td></tr> <tr><td>12</td><td>R90</td><td>63.2°C</td><td>94.5°C</td></tr> <tr><td>13</td><td>Q10</td><td>69.7°C</td><td>101.1°C</td></tr> <tr><td>14</td><td>LF2</td><td>65.3°C</td><td>95.7°C</td></tr> <tr><td>15</td><td>T5</td><td>66.5°C</td><td>97.5°C</td></tr> <tr><td>16</td><td>U4</td><td>71.3°C</td><td>102.0°C</td></tr> <tr><td>17</td><td>C60</td><td>56.0°C</td><td>87.0°C</td></tr> <tr><td>18</td><td>T1</td><td>69.8°C</td><td>100.2°C</td></tr> <tr><td>19</td><td>T6</td><td>66.5°C</td><td>97.0°C</td></tr> <tr><td>20</td><td>T2</td><td>71.2°C</td><td>101.7°C</td></tr> <tr><td>21</td><td>Q100</td><td>71.2°C</td><td>102.1°C</td></tr> <tr><td>22</td><td>Q103</td><td>70.6°C</td><td>103.1°C</td></tr> <tr><td>23</td><td>Q105</td><td>67.5°C</td><td>101.0°C</td></tr> <tr><td>24</td><td>L101</td><td>79.0°C</td><td>110.4°C</td></tr> <tr><td>25</td><td>L100</td><td>76.7°C</td><td>108.0°C</td></tr> <tr><td>26</td><td>TSW1</td><td>66.6°C</td><td>97.3°C</td></tr> <tr><td>27</td><td>C103</td><td>68.0°C</td><td>99.1°C</td></tr> <tr><td>28</td><td>C102</td><td>65.8°C</td><td>97.1°C</td></tr> <tr><td>29</td><td>C114</td><td>66.2°C</td><td>97.3°C</td></tr> <tr><td>30</td><td>Q200</td><td>72.8°C</td><td>103.5°C</td></tr> <tr><td>31</td><td>D107</td><td>61.6°C</td><td>92.4°C</td></tr> <tr><td>32</td><td>D213</td><td>64.0°C</td><td>95.2°C</td></tr> <tr><td>33</td><td>D106</td><td>63.3°C</td><td>94.0°C</td></tr> <tr><td>34</td><td>Q204</td><td>66.8°C</td><td>97.5°C</td></tr> <tr><td>35</td><td>U5</td><td>64.4°C</td><td>94.9°C</td></tr> <tr><td>36</td><td>D204</td><td>66.2°C</td><td>96.9°C</td></tr> <tr><td>37</td><td>Q37</td><td>61.2°C</td><td>91.6°C</td></tr> <tr><td>38</td><td>U3</td><td>60.5°C</td><td>90.9°C</td></tr> <tr><td>39</td><td>Q17</td><td>70.2°C</td><td>101.2°C</td></tr> <tr><td>40</td><td>D23</td><td>65.6°C</td><td>96.6°C</td></tr> <tr><td>41</td><td>C54</td><td>62.3°C</td><td>93.0°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 25 °C	HIGH AMBIENT Ta= 55 °C	1	Q2	58.6°C	89.3°C	2	ZNR1	52.5°C	83.2°C	3	U1	69.4°C	101.4°C	4	T3	65.3°C	95.6°C	5	T4	64.8°C	95.1°C	6	C17	62.6°C	93.1°C	7	LF1	62.0°C	93.0°C	8	D2	58.5°C	89.1°C	9	C6	64.1°C	94.3°C	10	Q19	62.3°C	93.0°C	11	Q23	66.9°C	98.7°C	12	R90	63.2°C	94.5°C	13	Q10	69.7°C	101.1°C	14	LF2	65.3°C	95.7°C	15	T5	66.5°C	97.5°C	16	U4	71.3°C	102.0°C	17	C60	56.0°C	87.0°C	18	T1	69.8°C	100.2°C	19	T6	66.5°C	97.0°C	20	T2	71.2°C	101.7°C	21	Q100	71.2°C	102.1°C	22	Q103	70.6°C	103.1°C	23	Q105	67.5°C	101.0°C	24	L101	79.0°C	110.4°C	25	L100	76.7°C	108.0°C	26	TSW1	66.6°C	97.3°C	27	C103	68.0°C	99.1°C	28	C102	65.8°C	97.1°C	29	C114	66.2°C	97.3°C	30	Q200	72.8°C	103.5°C	31	D107	61.6°C	92.4°C	32	D213	64.0°C	95.2°C	33	D106	63.3°C	94.0°C	34	Q204	66.8°C	97.5°C	35	U5	64.4°C	94.9°C	36	D204	66.2°C	96.9°C	37	Q37	61.2°C	91.6°C	38	U3	60.5°C	90.9°C	39	Q17	70.2°C	101.2°C	40	D23	65.6°C	96.6°C	41	C54	62.3°C	93.0°C
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18	T1	69.8°C	100.2°C																																																																																																																																																																									
19	T6	66.5°C	97.0°C																																																																																																																																																																									
20	T2	71.2°C	101.7°C																																																																																																																																																																									
21	Q100	71.2°C	102.1°C																																																																																																																																																																									
22	Q103	70.6°C	103.1°C																																																																																																																																																																									
23	Q105	67.5°C	101.0°C																																																																																																																																																																									
24	L101	79.0°C	110.4°C																																																																																																																																																																									
25	L100	76.7°C	108.0°C																																																																																																																																																																									
26	TSW1	66.6°C	97.3°C																																																																																																																																																																									
27	C103	68.0°C	99.1°C																																																																																																																																																																									
28	C102	65.8°C	97.1°C																																																																																																																																																																									
29	C114	66.2°C	97.3°C																																																																																																																																																																									
30	Q200	72.8°C	103.5°C																																																																																																																																																																									
31	D107	61.6°C	92.4°C																																																																																																																																																																									
32	D213	64.0°C	95.2°C																																																																																																																																																																									
33	D106	63.3°C	94.0°C																																																																																																																																																																									
34	Q204	66.8°C	97.5°C																																																																																																																																																																									
35	U5	64.4°C	94.9°C																																																																																																																																																																									
36	D204	66.2°C	96.9°C																																																																																																																																																																									
37	Q37	61.2°C	91.6°C																																																																																																																																																																									
38	U3	60.5°C	90.9°C																																																																																																																																																																									
39	Q17	70.2°C	101.2°C																																																																																																																																																																									
40	D23	65.6°C	96.6°C																																																																																																																																																																									
41	C54	62.3°C	93.0°C																																																																																																																																																																									





2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P : 48 VDC O/P : 120 % LOAD Ta : 25°C	TEST : OK
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 33.6 VDC / 67.2 VDC O/P : 100 % LOAD Ta= -45 °C	TEST : OK
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 55 °C /95 %R.H NO DAMAGE	I/P : 70.2 VDC O/P : FULL LOAD Ta= 55 °C HUMIDITY= 95 %R.H	TEST : OK
5	TEMPERATURE COEFFICIENT	±0.03%/°C(0~55°C)	I/P : 48 VDC O/P : FULL LOAD	± 0.0051%/°C(0~55°C)
6	STORAGE TEMPERATURE TEST	-40~85°C	1. Thermal shock Temperature : -45°C~ +90°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 10 CYCLE 5. Input/Output condition : STATIC	
7	THERMAL SHOCK TEST	-40~55°C	1. Thermal shock Temperature : -45°C~ +60°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16 CYCLE 5. Input/Output condition : 15cycle: 48 VDC / FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle: 48 VDC / FULL LOAD Burn In Test	
8	VIBRATION TEST	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 10min/sweep cycle (4) Acceleration : 6G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C	
9	CAPACITOR LIFE CYCLE	SUPPOSE C103 IS THE MOST CRITICAL COMPONENT (1) I/P : 48VDC O/P : FULL LOAD Ta= 25 °C LIFE TIME (2) I/P : 48VDC O/P : FULL LOAD Ta= 55 °C LIFE TIME (3) I/P : 48VDC O/P : 75% LOAD Ta= 55 °C LIFE TIME (4) I/P : 48VDC O/P : 50% LOAD Ta= 55 °C LIFE TIME		(1) 213709.1HRS (2) 24752.5HRS (3) 52832.2HRS (4) 104197.1HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 277.9K hrs min. Telcordia SR-332 (Bellcore) ; 99.1K hrs min. MIL-HDBK-217F (25°C)		
11	Ongoing Reliability Test	I/P : 48VDC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 30,000 hours		

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	LIUTT		Wangdz

2018.4.30 GP-A50-F010