



Test Report: DRC-180B

180W Single Output with Battery Charger(UPS Function)

■ 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

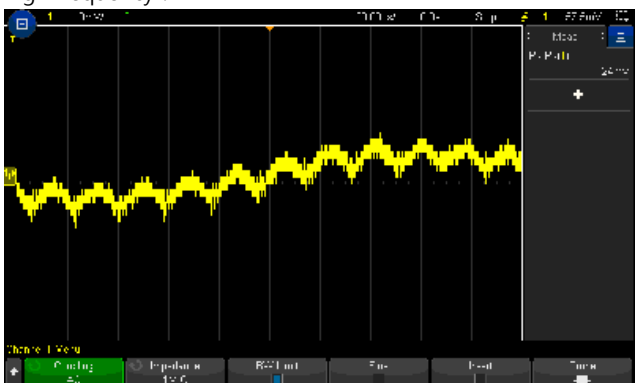
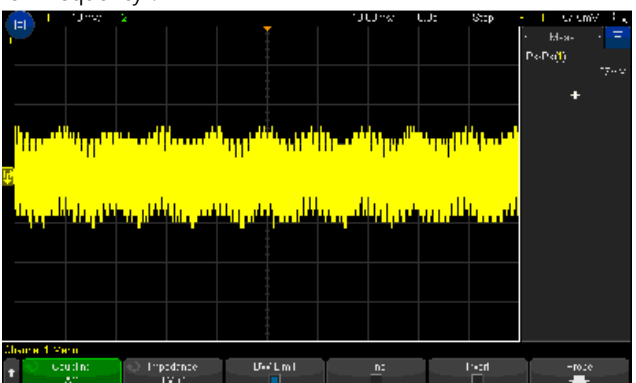
E.M.C. Test

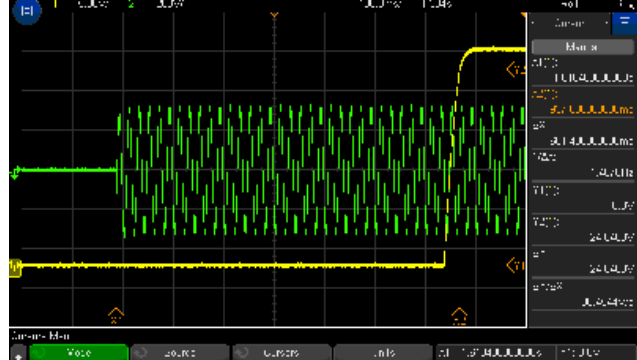
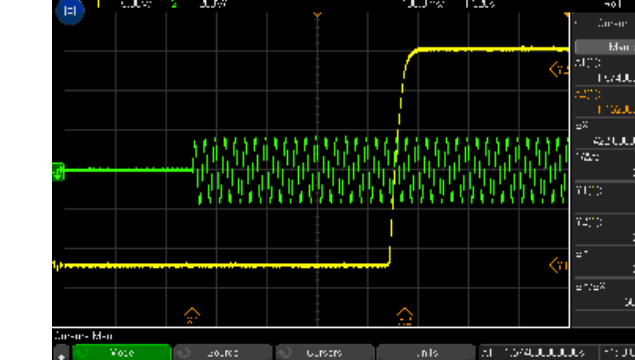
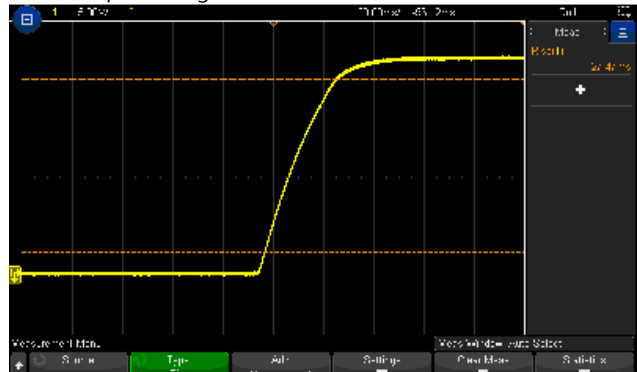
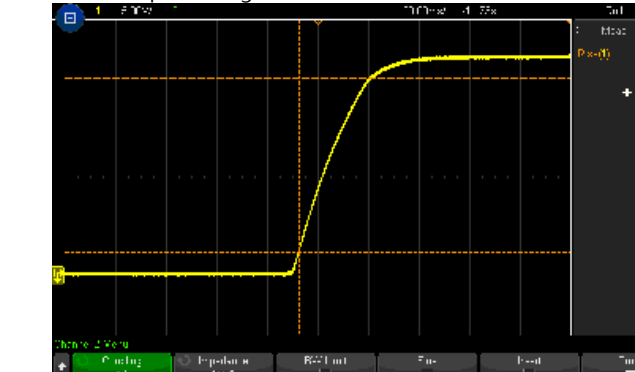
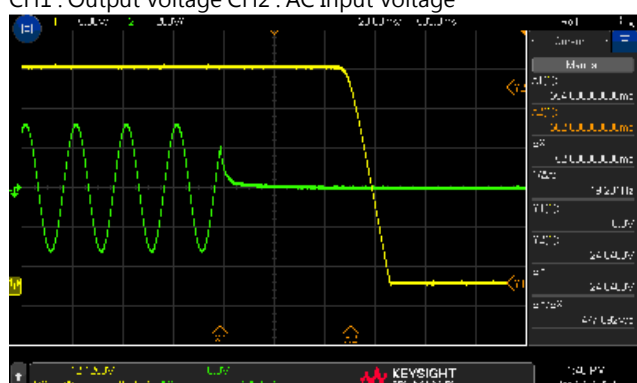
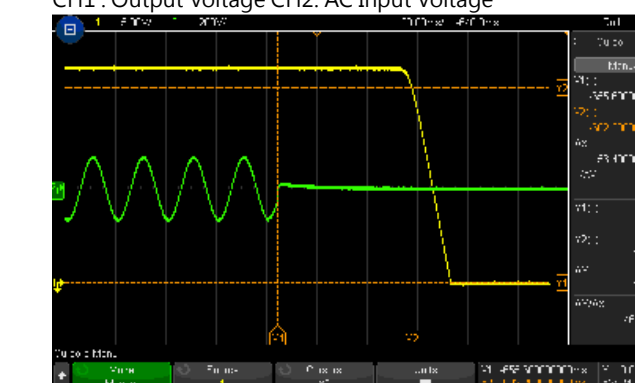
■ RELIABILITY TEST

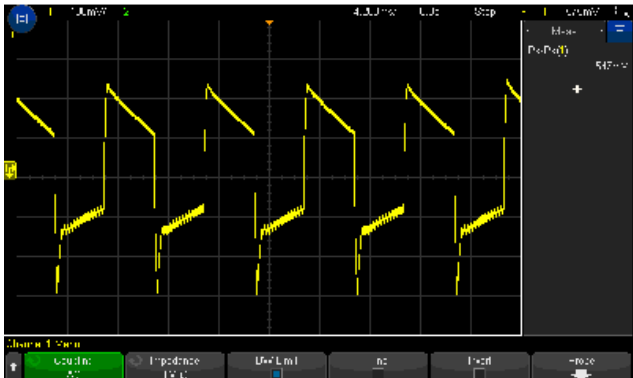
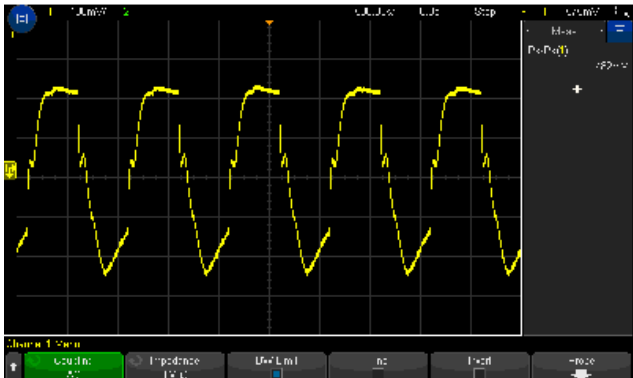
ENVIRONMENT TEST

DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

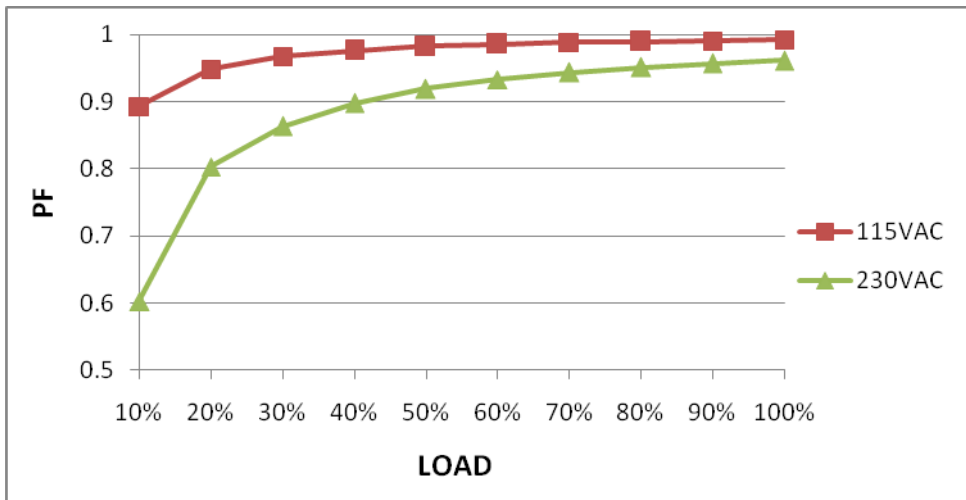
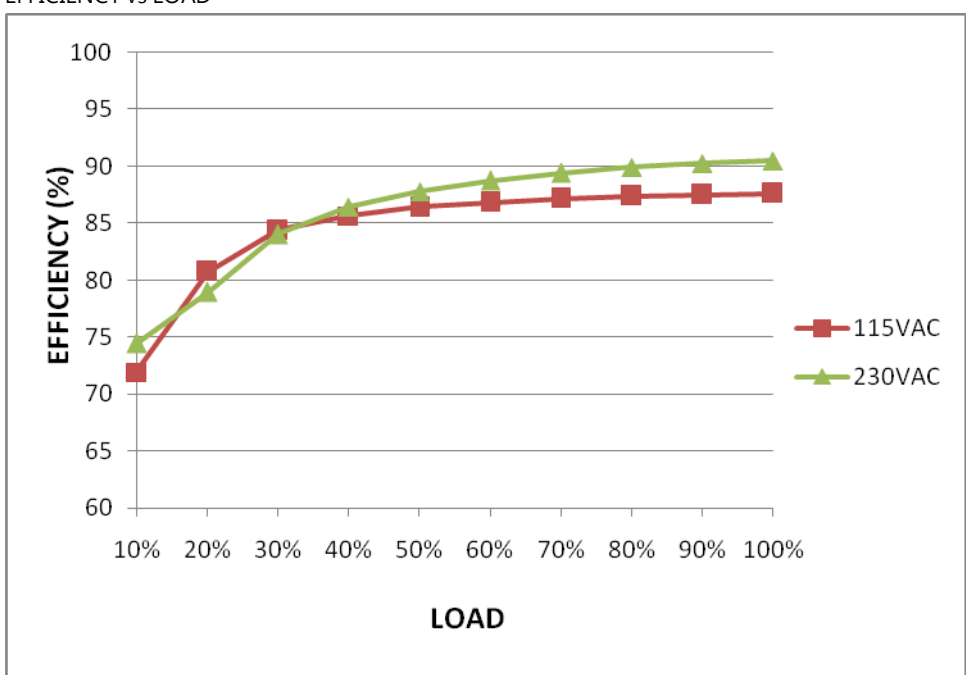
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 24 V ~ 29 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	23.41V~30.07V/230VAC 23.41V~30.07V /115VAC
2	OUTPUT VOLTAGE(Max) TOLERANCE	V1: -1.0 % ~ +1.0 %	I/P: 90VAC /264VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: -0.06%~ 0.08%
3	LINE REGULATION (Max)	V1: -0.5 % ~ +0.5 %	I/P: 90VAC~ 264VAC O/P:FULL LOAD Ta:25°C	V1: -0.01%~ 0.01%
4	LOAD REGULATION(Max)	V1: -0.5 % ~ +0.5 %	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.06%~ 0.08%
5	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	1.4%
6	RIPPLE & NOISE(Max)	V1: 240mVp-p	I/P:230VAC O/P: TESTING LOAD Ta:25°C	V1: 27mVp-p
high frequency :  low frequency : 				
7	SET UP TIME(Max)	230VAC/2000ms 115VAC/2000ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/681.4ms 115VAC/422ms
INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage			INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage	

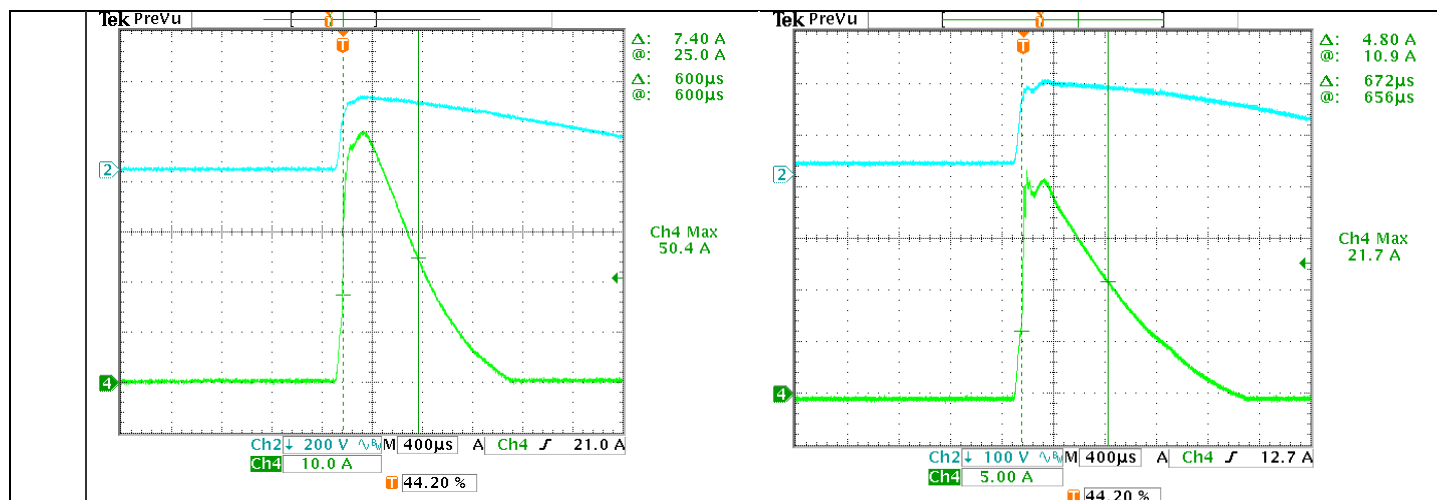
				
8	RISE TIME (Max)	230VAC/30ms 115VAC/30ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/27.47ms 115VAC/27.16ms
	INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage 		INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage 	
9	HOLD UP TIME (Typ.)	230VAC/20ms 115VAC/20ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 52.0ms 115VAC/ 53.4ms
	INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage 		INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage 	
10	DYNAMIC LOAD	V1: 2760mVp-p	I/P: 230VAC O/P: (1)FULL/0%LOAD50%DUTY/120HZ (2)FULL/0%LOAD50%DUT /1KHZ Ta:25°C	547mVp-p 482mVp-p

	FULL /50% LOAD 50%DUTY / 120HZ		FULL /50% LOAD 50%DUTY / 1KHZ	
				
11	TRANSIENT RECOVERY TIME	V1: 2760mVp-p	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	285mVp-p
12	CHARGE CURRENT	2A±0.2A	I/P: 230 VAC O/P: CV=24V Ta:25°C	1.99A

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	90VAC~264VAC 127VDC~ 370VDC	(1) I/P:TESTING O/P:FULL LOAD (2) I/P:DC TESTING(L:+ N:-) O/P: FULL / 50% LOAD (3) I/P:DC TESTING(L:- N:+) O/P: FULL / 50% LOAD Ta:25°C	(1) 76.5V~264V/FULL LOAD (2) 80Vdc~370Vdc/FULL LOAD 75Vdc~370Vdc/50% LOAD (3) 80Vdc~370Vdc/FULL LOAD 75Vdc~370Vdc/50% LOAD
			I/P: LOW-LINE-3V=97V HIGH-LINE+15% =300V 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 FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:90 VAC ~264VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK
3	LEAKAGE CURRENT	< 2 mA / 240VAC	I/P: 240 VAC O/P:Min LOAD Ta:25°C	1.19mA
4	INPUT CURRENT (Typ.)	230V/ 1.5 A 115V/ 2.5 A	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =0.899A/ 230VAC I =1.793A/ 115VAC

5	POWER FACTOR (Typ.)	0.95/ 230VAC 0.98/115VAC	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF=0.961/230VAC PF=0.990/115VAC																																	
P.F vs LOAD <table><caption>Power Factor (PF) vs Load Data</caption><thead><tr><th>LOAD (%)</th><th>115VAC PF</th><th>230VAC PF</th></tr></thead><tbody><tr><td>10%</td><td>0.90</td><td>0.60</td></tr><tr><td>20%</td><td>0.95</td><td>0.80</td></tr><tr><td>30%</td><td>0.97</td><td>0.85</td></tr><tr><td>40%</td><td>0.98</td><td>0.88</td></tr><tr><td>50%</td><td>0.99</td><td>0.90</td></tr><tr><td>60%</td><td>0.99</td><td>0.92</td></tr><tr><td>70%</td><td>0.99</td><td>0.93</td></tr><tr><td>80%</td><td>0.99</td><td>0.94</td></tr><tr><td>90%</td><td>0.99</td><td>0.95</td></tr><tr><td>100%</td><td>1.00</td><td>0.95</td></tr></tbody></table>					LOAD (%)	115VAC PF	230VAC PF	10%	0.90	0.60	20%	0.95	0.80	30%	0.97	0.85	40%	0.98	0.88	50%	0.99	0.90	60%	0.99	0.92	70%	0.99	0.93	80%	0.99	0.94	90%	0.99	0.95	100%	1.00	0.95
LOAD (%)	115VAC PF	230VAC PF																																			
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90%	0.99	0.95																																			
100%	1.00	0.95																																			
6	EFFICIENCY(Typ.)	90%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	90.82%																																	
EFFICIENCY vs LOAD <table><caption>Efficiency (%) vs Load Data</caption><thead><tr><th>LOAD (%)</th><th>115VAC Efficiency (%)</th><th>230VAC Efficiency (%)</th></tr></thead><tbody><tr><td>10%</td><td>72</td><td>74</td></tr><tr><td>20%</td><td>81</td><td>79</td></tr><tr><td>30%</td><td>85</td><td>84</td></tr><tr><td>40%</td><td>86</td><td>87</td></tr><tr><td>50%</td><td>87</td><td>88</td></tr><tr><td>60%</td><td>87</td><td>89</td></tr><tr><td>70%</td><td>87</td><td>90</td></tr><tr><td>80%</td><td>87</td><td>90</td></tr><tr><td>90%</td><td>88</td><td>91</td></tr><tr><td>100%</td><td>88</td><td>91</td></tr></tbody></table>					LOAD (%)	115VAC Efficiency (%)	230VAC Efficiency (%)	10%	72	74	20%	81	79	30%	85	84	40%	86	87	50%	87	88	60%	87	89	70%	87	90	80%	87	90	90%	88	91	100%	88	91
LOAD (%)	115VAC Efficiency (%)	230VAC Efficiency (%)																																			
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70%	87	90																																			
80%	87	90																																			
90%	88	91																																			
100%	88	91																																			
7	INRUSH CURRENT(Typ.)	230V/70A 115V/35A COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =50.4A/ 230VAC I =21.7A/ 115VAC																																	
INPUT=230VAC/50HZ @ FULL LOAD CH2 : AC Input Voltage CH4 : Input current INPUT=115VAC/ 60HZ @ FULL LOAD CH2 : AC Input Voltage CH4 : Input current																																					



PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~150 % Protection type : Hiccup mode, recovers automatically after fault condition is removed	I/P: 264VAC I/P: 230VAC I/P: 100VAC O/P: TESTING Ta: 25°C	125.38%/ 264VAC 125.38%/ 230VAC 125.38%/100VAC Protection type : Hiccup mode, recovers automatically after fault condition is removed
2	OVER VOLTAGE PROTECTION	CH1: 30.5V~37.7V 32.025V~35.815 Protection type : Shut down o/p voltage, re-power on to recover	I/P: 264VAC I/P: 230VAC I/P: 90VAC O/P: MIN LOAD Ta: 25°C	35.5 V/ 264VAC 35.5V/ 230VAC 35.5V/ 90VAC Protection type : Shut down o/p voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	Protection type : Shut down o/p voltage, re-power on to recover	I/P: 264VAC I/P: 90VAC O/P: FULL LOAD	O.T.P. Active OK Protection type : Shut down o/p voltage, re-power on to recover
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264VAC I/P: 90VAC O/P: FULL LOAD Ta: 25°C	NO DAMAGE : OK PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed
5	BATTER CUT OFF	20±1V	I/P: 230 VAC O/P: BAT. LOAD Ta: 25°C	19.9 V
6	REVERSE POLARITY	Protection type : By FUSE	I/P: 230 VAC O/P: BAT. LOAD Ta: 25°C	TEST : PASS By FUSE



ALARM FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	AC OK	Relay contact output, Closed : AC OK ; Open : AC Fail ; Max. rating : 30V / 1A	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	TEST : <u>OK</u>
2	BATTER LOW	Relay contact output, Open : Battery OK ; Closed : Battery Low ; Max. rating : 30V / 1A Battery low voltage : < 22V	I/P: 230 VAC O/P:BAT. LOAD Ta:25°C	TEST : <u>OK</u> Battery low voltage : <u>21.09</u> V

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q 2 Rated : 14 A/ 800 V	AC ON/OFF I/P: High-Line +3V =267V 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	Q2 VDS: (1) 598V (2) 465V (3) 598V (4) 594V (5) 590V (6) 606V (7) 578V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated : 13 A/ 600 V	I/P: High-Line +3V =267V AC ON/OFF 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	Q1 VDS: (1) 538V (2) 521V (3) 538V (4) 534V (5) 534V (6) 538V (7) 473V



180W Single Output with Battery Charger(UPS Function)

DRC-180 series

3	P.F.C DIODE	D 1 Rated : 8 A/ 600 V	I/P:High-Line +3V =267V AC ON/OFF O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (4)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz Ta:25°C	(1) 417V (2) 417V (3) 421V (4) 417V
4	Diode Peak Voltage	Q101 Rated : 27.4 A/ 150 V	AC ON/OFF I/P:High-Line +3V =267V VRmax 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	Q101: VRmax VDS: (1) 133.2V (2) 131.3V (3) 132.2V (4) 131.3V (5) 132.2V (6) 132.2V (7) 129.4V (8) 129.4V Vo (1) 131.3V
5	Input Capacitor Voltage	C5 Rated : 150μ / 400 V	I/P:High-Line +3V =267V 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	(1)392V (2)392V (3)396V (4)392V
6	Control IC Voltage Test	PWM IC U4 : Rated : 9V~ 28 V PFC IC U1 : Rated : 9.5V~ 35 V O/P IC U101 : Rated : 4.2V~ 35 V IC U102 : Rated : 3V~ 32 V	AC ON/OFF I/P:High-Line +3V =267V O/P(1)FULL LOAD (2) Output Short (3)O.L.P (4)O.V.P. (5)NO LOAD VRmin(LOW LINE) Ta:25°C	U4 (1) 17.2V (2) 17.2V (3) 17.2V (4) 17.2V (5) 17.2V U1 (1) 15.9V (2) 15.9V (3) 15.9V (4) 15.9V (5) 15.9V U101 (1) 17.2V (2) 0.4V (3) 1.9V (4) 24.7V (5) 12.4V U102 (1) 17.0V (2) 17.3V (3) 12.7V (4) 24.2V (5) 12.7V



180W Single Output with Battery Charger(UPS Function)

DRC-180 series

7	Clamp Diode Peak Voltage	D8 Rated : 650V /1 A	AC ON/OFF I/P : High-Line +3V = 267 V O/P : (1) Dynamic Load 90%Duty/1KHz (2)Full load continue Ta : 25°C	(1) 543V (2) 547V
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■ SAFETY& E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 3KVAC/min I/P-FG :2KVAC/min O/P-FG:0.5KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG:0.6 KVAC/min Ta:25°C	I/P-O/P: 8.07mA I/P-FG: 7.03mA O/P-FG: 9.12mA 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: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C	I/P-O/P: 9999MΩ I/P-FG: 9999MΩ O/P-FG: 9999MΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	2mΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	EN61000-3-2 CLASS A	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS
2	CONDUCTION	EN55032 CLASS B	I/P:230VAC(50HZ)/110VAC(60HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab
3	RADIATION	EN55032 CLASS B	I/P:230VAC(50HZ)/110VAC(60HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab
4	E.S.D	EN61000-4-2 AIR : 8KV / Contact : 4KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
5	E.F.T	EN61000-4-4 INPUT : 1KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
6	SURGE	IEC61000-4-5 LIGHT INDUSTRY L-N : 1KV L,N-PE : 2KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
7	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 : DRC-180B 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 25 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 45 °C																																																																																																																		
		<table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENT Ta= 25 °C</th><th>HIGH AMBIENT Ta= 45 °C</th></tr><tr><td>1</td><td>ZNR1</td><td>35.2°C</td><td>54.0°C</td></tr><tr><td>2</td><td>C1</td><td>37.0°C</td><td>55.6°C</td></tr><tr><td>3</td><td>LF1</td><td>44.4°C</td><td>62.5°C</td></tr><tr><td>4</td><td>LF2</td><td>51.3°C</td><td>68.9°C</td></tr><tr><td>5</td><td>RTH1</td><td>60.7°C</td><td>74.4°C</td></tr><tr><td>6</td><td>ZNR3</td><td>41.0°C</td><td>59.0°C</td></tr><tr><td>7</td><td>BD1</td><td>55.6°C</td><td>71.3°C</td></tr><tr><td>8</td><td>RTH2</td><td>67.3°C</td><td>79.5°C</td></tr><tr><td>9</td><td>LF100</td><td>57.2°C</td><td>74.3°C</td></tr><tr><td>10</td><td>RY103</td><td>56.2°C</td><td>72.4°C</td></tr><tr><td>11</td><td>R3</td><td>41.9°C</td><td>59.9°C</td></tr><tr><td>12</td><td>RY100</td><td>63.4°C</td><td>80.9°C</td></tr><tr><td>13</td><td>C106</td><td>63.7°C</td><td>80.5°C</td></tr><tr><td>14</td><td>C104</td><td>61.5°C</td><td>78.4°C</td></tr><tr><td>15</td><td>Q102</td><td>56.2°C</td><td>73.7°C</td></tr><tr><td>16</td><td>C47</td><td>49.0°C</td><td>66.8°C</td></tr><tr><td>17</td><td>RTH3</td><td>71.7°C</td><td>89.1°C</td></tr><tr><td>19</td><td>T1coil</td><td>74.5°C</td><td>94.1°C</td></tr><tr><td>20</td><td>T1core</td><td>80.1°C</td><td>98.3°C</td></tr><tr><td>21</td><td>C5</td><td>51.2°C</td><td>67.6°C</td></tr><tr><td>22</td><td>C6</td><td>42.9°C</td><td>60.2°C</td></tr><tr><td>23</td><td>L1</td><td>41.5°C</td><td>58.7°C</td></tr><tr><td>24</td><td>C38</td><td>50.2°C</td><td>67.4°C</td></tr><tr><td>25</td><td>L2</td><td>44.2°C</td><td>60.9°C</td></tr><tr><td>26</td><td>R5</td><td>42.8°C</td><td>59.6°C</td></tr><tr><td>27</td><td>Q1</td><td>52.6°C</td><td>69.6°C</td></tr><tr><td>28</td><td>Q2</td><td>63.9°C</td><td>81.3°C</td></tr></table>			NO	Position	ROOM AMBIENT Ta= 25 °C	HIGH AMBIENT Ta= 45 °C	1	ZNR1	35.2°C	54.0°C	2	C1	37.0°C	55.6°C	3	LF1	44.4°C	62.5°C	4	LF2	51.3°C	68.9°C	5	RTH1	60.7°C	74.4°C	6	ZNR3	41.0°C	59.0°C	7	BD1	55.6°C	71.3°C	8	RTH2	67.3°C	79.5°C	9	LF100	57.2°C	74.3°C	10	RY103	56.2°C	72.4°C	11	R3	41.9°C	59.9°C	12	RY100	63.4°C	80.9°C	13	C106	63.7°C	80.5°C	14	C104	61.5°C	78.4°C	15	Q102	56.2°C	73.7°C	16	C47	49.0°C	66.8°C	17	RTH3	71.7°C	89.1°C	19	T1coil	74.5°C	94.1°C	20	T1core	80.1°C	98.3°C	21	C5	51.2°C	67.6°C	22	C6	42.9°C	60.2°C	23	L1	41.5°C	58.7°C	24	C38	50.2°C	67.4°C	25	L2	44.2°C	60.9°C	26	R5	42.8°C	59.6°C	27	Q1	52.6°C	69.6°C	28	Q2	63.9°C	81.3°C
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180W Single Output with Battery Charger(UPS Function)

DRC-180 series

			NO	Position	ROOM AMBIENT Ta= 25 °C	HIGH AMBIENT Ta= 45 °C
			29	D1	56.6℃	73.0℃
			30	U220	70.9℃	87.0℃
			31	J100	66.5℃	82.3℃
			32	U101	69.6℃	85.5℃
			33	U3	54.3℃	71.7℃
			34	U4	70.5℃	87.5℃
			35	D301	69.7℃	86.5℃
			36	Q301	66.1℃	82.7℃
			37	D13	59.6℃	76.5℃
			38	Q30	55.2℃	71.1℃
			39	D30	62.9℃	80.2℃
			40	D5	51.6℃	68.5℃
			41	U1	48.8℃	65.8℃
			42	U2	58.4℃	75.9℃
			43	D7	67.0℃	85.2℃
			44	U102	56.8℃	73.1℃
			45	C9	69.4℃	86.5℃
			46	D9	63.9℃	82.5℃
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)		I/P : 230 VAC O/P : 123%LOAD Ta : 25℃	TEST : OK	
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR		I/P : 264VAC/100VAC O/P : 100%LOAD Ta= -25℃	TEST : OK	
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 45 °C/95 %R.H NO DAMAGE		I/P : 272 VAC O/P : FULL LOAD Ta= 46℃ HUMIDITY= 95 %R.H	TEST : OK	
5	TEMPERATURE COEFFICIENT	± 0.03 %/°C(0~40℃)		I/P : 230 VAC O/P : FULL LOAD	± 0.008%/°C(0~40℃)	
6	STORAGE TEMPERATURE TEST	-20~85℃		1. Thermal shock Temperature : -25℃~ +90℃ 2. Temperature change rate : 25℃ / 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	-20~45℃		1. Thermal shock Temperature : -25℃~ +50℃ 2. Temperature change rate : 25℃ / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16 CYCLE 5. Input/Output condition : 15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:230V/ FULL LOAD Burn In Test		



180W Single Output with Battery
Charger(UPS Function)

DRC-180 series

8	VIBRATION TEST	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 12min/sweep cycle (4) Acceleration : 3G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C
9	CAPACITOR LIFE CYCLE	SUPPOSE C106 IS THE MOST CRITICAL COMPONENT (1) I/P : 230VAC O/P : FULL LOAD Ta= 25 °C LIFE TIME (2) I/P : 230VAC O/P : FULL LOAD Ta= 45 °C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta= 45 °C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta= 45 °C LIFE TIME	(1) 222562.7HRS (2) 69458HRS (3) 107596HRS (4) 158571.2HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 1536.3K hrs min. Telcordia SR-332 (Bellcore) ; 245.6K hrs min. MIL-HDBK-217F (25°C)	
11	Ongoing Reliability Test	I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 30,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Liutt		Wangdz

2020.10.01 TAG-QA-009