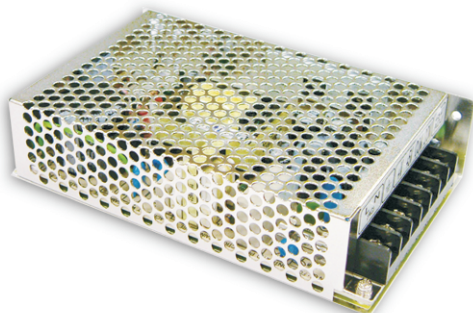




75W Dual Output Switching Power Supply

NED-75 series



■ Features :

- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- 2 years warranty

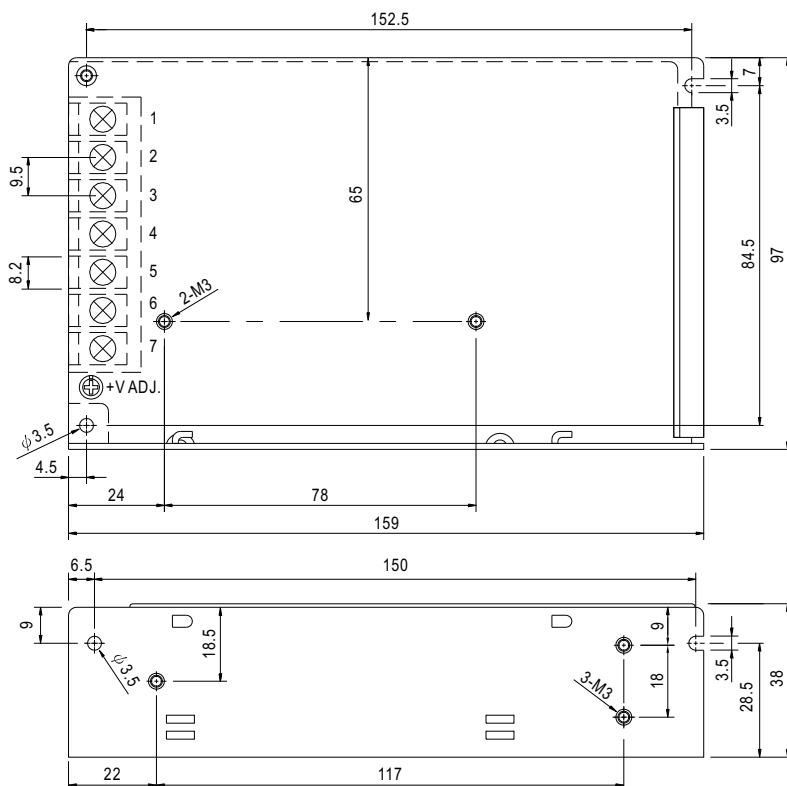


SPECIFICATION

MODEL		NED-75A		NED-75B	
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH1	CH2
	DC VOLTAGE	5V	12V	5V	24V
	RATED CURRENT	7A	3A	5A	2A
	CURRENT RANGE Note.6	1 ~ 8A	0.3 ~ 4A	1 ~ 6A	0.2 ~ 3A
	RATED POWER	71W		73W	
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	80mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	CH1: 4.75 ~ 5.5V		CH1: 4.75 ~ 5.5V	
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±2.0%	±6.0%
	LINE REGULATION Note.4	±0.5%	±1.0%	±0.5%	±1.0%
	LOAD REGULATION Note.5	±1.5%	±3.0%	±1.5%	±3.0%
	SETUP, RISE TIME	500ms, 30ms/230VAC 1200ms, 30ms/115VAC at full load			
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load			
INPUT	VOLTAGE RANGE	85 ~ 264VAC 120 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	78%		81%	
	AC CURRENT (Typ.)	1.5A/115VAC 0.9A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 45A			
	LEAKAGE CURRENT	<2mA / 240VAC			
PROTECTION	OVERLOAD	110 ~ 150% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed			
	OVER VOLTAGE	CH1: 5.75 ~ 6.75V Protection type : Shut down o/p voltage, re-power on to recover			
ENVIRONMENT	WORKING TEMP.	-20 ~ +60℃ (Refer to output load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)			
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
SAFETY & EMC (Note 7)	SAFETY STANDARDS	UL60950-1, CB(IEC60950-1) Approved			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC			
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B			
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3			
OTHERS	EMS IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8,11, ENV50204, EN55024, EN61000-6-1 Light industry level, criteria A			
	MTBF	381.3K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	159*97*38mm (L*W*H)			
	PACKING	0.52Kg; 30pcs/16.6Kg/0.97CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Line regulation is measured from low line to high line at rated load. 5. Load regulation is measured from 20% to 100% rated load, and other output at 60% rated load. 6. Each output can work within current range. But total output power can't exceed rated output power. 7. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.				

Mechanical Specification

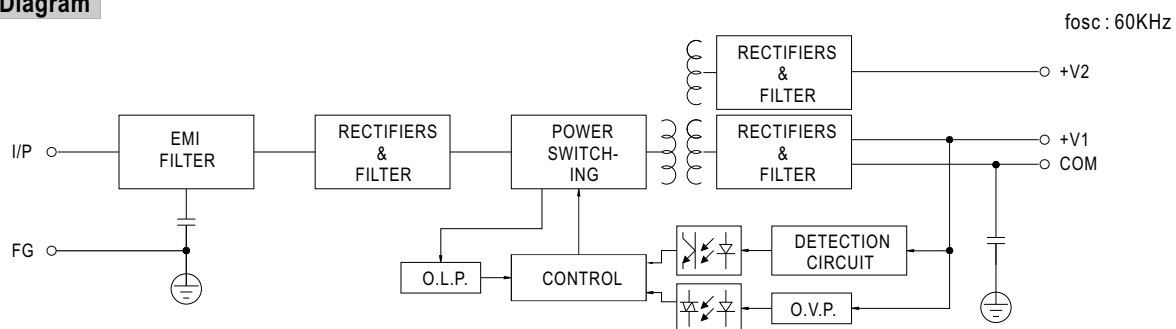
Case No. 901 Unit:mm



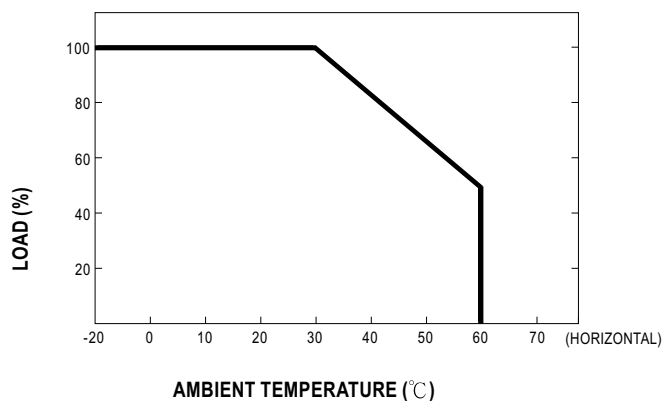
Terminal Pin. No Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	5	DC OUTPUT +V2
2	AC/N	6	DC OUTPUT COM
3	FG $\perp$	7	DC OUTPUT +V1
4	DC OUTPUT COM		

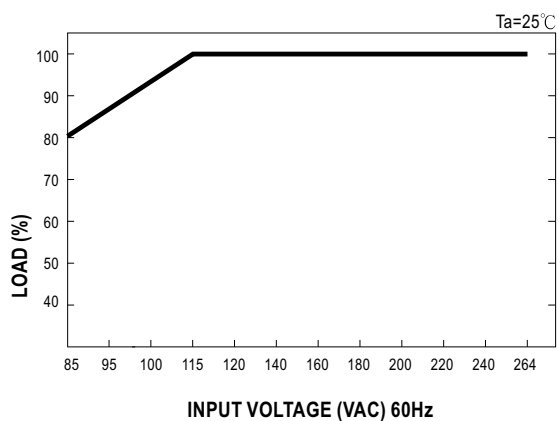
Block Diagram



Derating Curve



Output Derating VS Input Voltage



MODEL : NED-75B

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1:80 mVp-p (Max) V2:200 mVp-p (Max)	I/P: 230VAC O/P:FULL LOAD Ta:25℃	V1: 32 mVp-p (Max) V2: 15 mVp-p (Max)	P
2	OUTPUT VOLTAGE ADJUST RANGE	CH1: 4.75 V~ 5.5 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25℃	4.57 V~ 5.97 V/ 230 VAC 4.57 V~ 5.97 V/ 115 VAC	P
3	OUTPUT VOLTAGE TOLERANCE	V1: 2 %~ -2 % (Max) V2: 6 %~ -6 % (Max)	I/P: 115 VAC / 264 VAC O/P:FULL / 40% LOAD Ta:25℃	V1: 0.2 %~ -0.2 % V2: 2.5 %~ -2.5 %	P
4	LINE REGULATION	V1: 0.5 %~ -0.5 % (Max) V2: 1 %~ -1 % (Max)	I/P: 115 VAC ~ 264 VAC O/P:FULL LOAD Ta:25℃	V1: 0 %~ 0 % V2: 0.3 %~ -0.3 %	P
5	LOAD REGULATION	V1: 1.5 %~ -1.5 % (Max) V2: 3 %~ -3 % (Max)	I/P: 230 VAC O/P:FULL ~MIN LOAD Ta:25℃	V1: 0.2 %~ -0.2 % V2: 0.6 %~ -0.6 %	P
6	CROSS REGULATION	V1: 1.5 %~ -1.5 % (Max) V2: 3 %~ -3 % (Max)	I/P: 230 VAC O/P: Testing O/P 60%LOAD Other O/P 40%LOAD Change Ta:25℃	V1: 0 %~ 0 % V2: 1.8 %~ -1.8 %	P
7	SET UP TIME	230VAC: 500 ms (Max) 115 VAC: 1200 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230VAC/ 188 ms 115VAC/ 408 ms	P
8	RISE TIME	230VAC: 30 ms (Max) 115VAC: 30 ms (Max)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230VAC/ 5 ms 115VAC/ 6 ms	P
9	HOLD UP TIME	230VAC: 50 ms (TYP) 115VAC: 10 ms (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	230VAC/ 78 ms 115VAC/ 15 ms	P
10	OVER/UNDERSHOOT TEST	< +5%	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	TEST: <5 %	P
11	DYNAMIC LOAD	V1: 1000 mVp-p	I/P: 230 VAC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25℃	117 mVp-p	P

INPUT FUNCTION TEST

N O	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	85VAC~264 VAC	I/P:TESTING O/P:FULL LOAD Ta:25℃	63V~264V	P
			I/P: LOW-LINE-3V=82 V HIGH-LINE+15%=300 V O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST: OK	
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE OSC	I/P: 85 VAC ~ 264 VAC O/P:FULL~MIN LOAD Ta:25℃	TEST: OK	P
3	EFFICIENCY	81% (TYP)	I/P: 230 VAC O/P:FULL LOAD Ta:25℃	82.3 %	P
4	INPUT CURRENT	230V/ 0.9 A (TYP) 115V/ 1.5 A (TYP)	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	I = 0.75 A/ 230 VAC I = 1.23 A/ 115 VAC	P
5	INRUSH CURRENT	230V/ 45 A (TYP) COLD START	I/P: 230 VAC I/P: 115 VAC O/P:FULL LOAD Ta:25℃	I = 43 A/ 230 VAC	P
6	LEAKAGE CURRENT	< 2 mA / 240 VAC	I/P: 254 VAC O/P:Min LOAD Ta:25℃	L-FG: 0.5 mA N-FG: 0.5 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	110 %~ 150 %	I/P: 230 VAC I/P: 115 VAC O/P:TESTING Ta:25℃	132 %/ 230 VAC 132 %/ 115 VAC Hiccup Mode	P
2	OVER VOLTAGE PROTECTION	CH1: 5.75V-6.75 V	I/P: 230 VAC I/P: 115 VAC O/P:MIN LOAD Ta:25℃	6.25 V/ 230 VAC 6.25 V/ 115 VAC Shunt down Re- power ON	P
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 264 VAC O/P:FULL LOAD Ta:25℃	NO DAMAGE Hiccup Mode	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT																																																																
1	TEMPERATURE RISE TEST	MODEL : NED-75A 1. ROOM AMBIENT BURN-IN : 2 HRS I/P: 230VAC O/P: FULL LOAD Ta= 31.5 °C <table><thead><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 31.5 °C</th></tr></thead><tbody><tr><td>1</td><td>C5</td><td>150U/400V CAPX 85°C</td><td>58.6°C</td></tr><tr><td>2</td><td>BD1</td><td>D3SB60 4A/600V SHI</td><td>73.0°C</td></tr><tr><td>3</td><td>LF1</td><td>LF-132</td><td>61.5°C</td></tr><tr><td>4</td><td>C205</td><td>1200U/16V CAPX 105°C</td><td>68.2°C</td></tr><tr><td>5</td><td>D1</td><td>HER306 3A/600V REC</td><td>93.5°C</td></tr><tr><td>6</td><td>U1</td><td>1203P</td><td>73.6°C</td></tr><tr><td>7</td><td>Q1</td><td>K2628 6A/600V</td><td>76.0°C</td></tr><tr><td>8</td><td>D200</td><td>SF10SC6 10A/60V SHI</td><td>71.8°C</td></tr><tr><td>9</td><td>T1 COIL</td><td>TF-1030</td><td>92.7°C</td></tr><tr><td>10</td><td>C36</td><td>100U/35V RUB 105°C YXF</td><td>70.5°C</td></tr><tr><td>11</td><td>D100</td><td>MBR1545CT 15A/45V</td><td>74.6°C</td></tr><tr><td>12</td><td>C105</td><td>2200U/10V CAPX 105°C</td><td>79.4°C</td></tr><tr><td>13</td><td>R205</td><td>150Ω/2W R/MO</td><td>117.7°C</td></tr><tr><td>14</td><td></td><td></td><td>°C</td></tr><tr><td>15</td><td></td><td></td><td>°C</td></tr></tbody></table>			NO	Position	P/N	ROOM AMBIENT Ta= 31.5 °C	1	C5	150U/400V CAPX 85°C	58.6°C	2	BD1	D3SB60 4A/600V SHI	73.0°C	3	LF1	LF-132	61.5°C	4	C205	1200U/16V CAPX 105°C	68.2°C	5	D1	HER306 3A/600V REC	93.5°C	6	U1	1203P	73.6°C	7	Q1	K2628 6A/600V	76.0°C	8	D200	SF10SC6 10A/60V SHI	71.8°C	9	T1 COIL	TF-1030	92.7°C	10	C36	100U/35V RUB 105°C YXF	70.5°C	11	D100	MBR1545CT 15A/45V	74.6°C	12	C105	2200U/10V CAPX 105°C	79.4°C	13	R205	150Ω/2W R/MO	117.7°C	14			°C	15			°C	P
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P: 230 VAC O/P: 116 % LOAD Ta:25°C	TEST : OK	P																																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 230 VAC O/P: 100 % LOAD Ta= -20°C	TEST : OK	P																																																																
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 30 °C NO DAMAGE	I/P: 272 VAC O/P:FULL LOAD Ta= 30 °C HUMIDITY= 95 %R.H	TEST : OK	P																																																																
5	TEMPERATURE COEFFICIENT	± 0.03 %(0-50°C)	I/P: 230 VAC O/P:FULL LOAD	± 0.01 %(0-50°C)	P																																																																
6	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency:10~500Hz (3) Sweep Time:10min/sweep cycle (4) Acceleration:2G (5) Test Time:1 hour in each axis (X.Y.Z) (6) Ta:25°C		TEST : OK	P																																																																

SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 3 KVAC/min I/P-FG: 1.5 KVAC/min O/P-FG: 0.5 KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG: 0.6 KVAC/min Ta:25°C	I/P-O/P: 4.74 mA I/P-FG: 4.43 mA O/P-FG: 2.62 mA NO DAMAGE	P
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: 9 GΩ I/P-FG: 5 GΩ O/P-FG: 5 GΩ NO DAMAGE	P
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40 A / 2min Ta:25°C	3 mΩ	P
4	APPROVAL	TUV: Certificate NO : UL: File NO : E183223			P

E.M.C TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	HARMONIC	EN61000-3-2 CLASS A	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS	P
2	CONDUCTION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	RADIATION	EN55022 CLASS B	I/P: 230 VAC (50HZ) O/P:FULL LOAD Ta:25°C	PASS Test by certified Lab	P
4	E.S.D	EN61000-4-2 LIGHT INDUSTRY AIR:8KV / Contact:4KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
5	E.F.T	EN61000-4-4 LIGHT INDUSTRY INPUT: 1KV	I/P: 230 VAC/50HZ O/P:FULL LOAD Ta:25°C	CRITERIA A	P
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	P
7	Test by certified Lab & Test Report Prepare				

M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C105 IS THE MOST CRITICAL COMPONENT I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 46897 HRS I/P: 230VAC O/P:FULL LOAD Ta= 30 °C LIFE TIME= 33157 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 381.3K HRS			P

COMPONENT STRESS TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	Power Transistor (D to S) or (C to E) Peak Voltage	Q 1 Rated K3562 : 600V 6A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25℃	(1) 556 V (2) 544 V (3) 586 V	P
2	Diode Peak Voltage	D100 Rated MBR1545CT : 45V 15A D200 Rated BYQ28X-200 : 200V 10A	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on (2) Full Load (3)Output Short Ta:25℃	(1) 34.2 V (2) 37.8 V (3) 34.2 V (1) 123 V (2) 123 V (3) 119 V	P
3	Clamp Diode Peak Voltage	D1 Rated HER306 : 600 V 3A	I/P:High-Line +3V = 267 V O/P: (1)Full Load (2) Dynamic Load 90%Duty/1KHz Ta:25℃	(1) 530 V (2) 528 V	P
4	Input Capacitor Voltage	C5 Rated : 150 u / 400 V/ 85℃	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change (4)Burn in 1hour Ta:25℃	(1) 380 V (2) 378 V (3) 378 V (4) 378 V	P
5	Control IC Voltage Test	U 1 Rated 1203 : 18V	I/P:High-Line +3V = 267 V O/P: (1)Full Load Turn on /Off (2) Min load Turn on /Off (3)Full Load /Min load Change Ta:25℃	(1) 12.7 V (2) 12.7 V (3) 10.6 V	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2005/4/1	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2005/7/8	PRODUCT SAMPLE	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023