



MTBF TEST REPORT

MODEL NO.: GTM41060-1505

PART NO.: _____

DESCRIPTION: Switching Power Supply

RESULT: PASS

DATE: 2007/6/2

Document NO.		Issued Date
		2007/6/4
TYPE : MTBF TEST CONDITION AC INPUT :120VAC DC OUTPUT: 5V/3A REV : ROOM TEMPERATURE : 25 ℃		
TYPE		π p
RESISTOR		0.07962587
CAPACITOR		0.032832308
CAPACITOR(ALUMINUM)		1.053977197
DIODE		2.4157291
MOSFET		0.093136475
IC		0.034031635
CHOKE		0.004409699
TRANSFORMER		0.154583858
FUSE		0.04
PCB		0.984
TOTAL π p =		4.8923
MTBF =		204402 Hours / 23.33353 Years

Document NO.												Issued Date			
TYPE : Resister														SPECIFICATION:	
TEST CONDITION														ROOM TEMPERATURE : 25 °C	
AC INPUT :120VAC															
DC OUTPUT: 5V/3A															
P / N	Item	ohm	(W)	Vp-p	π m	S	T	Ab	π R	π Q	π E	π P			
	R3	56000	1	124	0.2746	0.2746	76.41	0.001646	1	5	1	0.0082315	CF		
	R12	1.2	1	0.148	0.0183	0.0183	66.31	0.000669	1	5	1	0.0033425	CF		
	R4	1E+06	0.25	45.2	0.0020	0.0082	68.11	0.000697	1	5	1	0.0034865	SMD		
	RA	6E+05	0.25	60	0.0060	0.0238	53.88	0.000437	1	5	1	0.002185	SMD		
	RB	6E+05	0.25	60	0.0060	0.0238	54.29	0.000443	1	5	1	0.0022167	SMD		
	R1	5E+05	0.25	42.87	0.0036	0.0144	67.76	0.000698	1	5	1	0.003489	SMD		
	R2	5E+05	0.25	42.85	0.0036	0.0144	68.47	0.000715	1	5	1	0.0035769	SMD		
	R5	8E+05	0.125	31.54	0.0012	0.0097	68.33	0.000705	1	5	1	0.0035247	SMD		
	R6	8E+05	0.125	31.53	0.0012	0.0097	68.17	0.000701	1	5	1	0.003505	SMD		
	R7	10	0.25	0	0.0000	0	64.25	0.000599	1	5	1	0.0029947	SMD		
	R8	47	0.125	0.086	0.0002	0.0013	57.29	0.000471	1	5	1	0.0023534	SMD		
	R9	5.1	0.125	0.031	0.0002	0.0015	63.37	0.000583	1	5	1	0.0029129	SMD		
	R10	1300	0.125	0.078	0.0000	4E-05	68.09	0.000685	1	5	1	0.0034255	SMD		
	R13	56	0.25	0.0002	0.0000	3E-09	70.28	0.00074	1	5	1	0.003698	SMD		
	R14	56	0.25	0.0002	0.0000	3E-09	71.3	0.000766	1	5	1	0.0038324	SMD		
	R15	10000	0.125	2.76	0.0008	0.0061	60.19	0.000526	1	5	1	0.0026306	SMD		
	R24	10000	0.125	0.0002	0.0000	3E-11	56.47	0.000456	1	5	1	0.0022811	SMD		
	R25	10000	0.125	0.0002	0.0000	3E-11	56.17	0.000451	1	5	1	0.0022573	SMD		
	R18	180	0.125	0.112	0.0001	0.0006	70.47	0.000745	1	5	1	0.003727	SMD		
	R21	3000	0.125	4.03	0.0054	0.0433	56.68	0.000501	1	5	1	0.0025072	SMD		
	R29	39000	0.125	1.23	0.0000	0.0003	57.78	0.000478	1	5	1	0.0023896	SMD		
	R30	100	0.125	0.062	0.0000	0.0003	65.37	0.000623	1	5	1	0.0031163	SMD		
	R26	10000	0.125	4.04	0.0016	0.0131	57.18	0.00048	1	5	1	0.0024008	SMD		
	R28	3320	0.125	1.23	0.0005	0.0036	56.73	0.000464	1	5	1	0.0023189	SMD		
	R31	2200	0.25	5.27	0.0126	0.0505	63.38	0.000644	1	5	1	0.0032223	SMD		
Total π P		0.07962587													
π m :Operating Power							π R : Resistance Factor								
S : Ratio of Operating Power to Rated Power							π Q : Quality Factor								
(S=Pm/P)							π E : Environment Factor								
T : Component Temperature							π p = AbPRPQPE Failures / 10 ⁶ Hours								
Ab : Base Failure Rate															
(Ab = 4.5x10 ⁻⁹ exp(12((T+273)/343))exp(S/0.6((T+273)/273)															
										Amd.		Page	1		

Document NO.												Issued Date	
TYPE : Capacitor TEST CONDITION AC INPUT :120VAC DC OUTPUT: 5V/3A						SPECIFICATION: ROOM TEMPERATURE : 25 °C							
P / N	Item	(pF)	(V)	V _P	S	T	A _b	π CV	π Q	π E	π P		
	CX1	470000	275	120	0.4364	53.1	0.003042	1.724704	3	1	0.015737	X	
	CY1	1000	250	46.1	0.1844	68	0.000958	0.876564	3	1	0.00252	Y	
	C2	2200	1000	124	0.124	71.2	0.00084	0.955983	3	1	0.002409		
	C4	1000	50	3.08	0.0616	63.4	0.000774	0.876564	3	1	0.002036	SMD	
	C12	1000	50	5.27	0.1054	62.3	0.000799	0.876564	3	1	0.0021	SMD	
	C15	1000	50	3.59	0.0718	59.4	0.00077	0.876564	3	1	0.002024	SMD	
	C5	100	50	0.23	0.0045	68.3	0.000778	0.680431	3	1	0.001589	SMD	
	C8	1000	200	5.36	0.0268	70.6	0.000784	0.876564	3	1	0.002061	SMD	
	C13	4700	50	2.34	0.0468	56.4	0.000756	1.039237	3	1	0.002356	SMD	
Total π P =		0.032832308											
π P :Peak Voltage S : Ratio of Peak to rated Voltage (S=V _p /V) T : Component Temperature A _b : Base Failure Rate A _b = (0.0003((S/0.3) ³ exp((T+273)/358)						π Q : Quality Factor π E : Environment Factor π p = A _b P _{cv} PQPE Failures / 10 ⁶ Hours							
π cv : Capacitance Factor						Amd.		Page		2			

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Document NO.												Issued Date	
TYPE : IC													
TEST CONDITION													
AC INPUT :120VAC													
DC OUTPUT: 5V/3A													
SPECIFICATION:													
ROOM TEMPERATURE : 25 °C													
P / N	Item	V	V _m	S	T	C ₁	C ₂	π _T	π _E	π _Q	π _L	π _P	
	U1	12	1.23		61.31	0.01	0.0009	1.563	0.5	0.25	1.8	0.007	
	PC1	35	3.09		63.43	0.01	0.0009	1.802	0.5	0.25	1.8	0.008	
	IC1	25	19.46		68.69	0.01	0.0009	2.545	0.5	0.25	1.8	0.012	
	U3	32	1.22		60.39	0.01	0.0009	1.469	0.5	0.25	1.8	0.007	

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