

## MSF50-S SPECIFICATIONS



MODEL		MSF50-3R3	MSF50-05	MSF50-09	MSF50-12	MSF50-15	MSF50-24	MSF50-48
INPUT	VOLTAGE, FREQUENCY	AC100-240V (AC85~264V or DC120~370V), 50/60Hz (47~440Hz or DC)						
	CURRENT	100V~1.4A, 200V~0.7A						
	EFFICIENCY (AC220V)	63% typ	70% typ	73% typ	75% typ	75% typ	78% typ	80% typ
	INRUSH CURRENT	20A typ(ACIN 110V, I <sub>c</sub> =100%), 40A typ(ACIN 220V, I <sub>c</sub> =100%) at cold start.						
OUTPUT	VOLTAGE [V]	3.3	5	9	12	15	24	48
	CURRENT [A]	10	10	5.5	4.2	3.4	2.1	1
	REGULATION, LINE [mV]	25 Max	25 Max	45 Max	60 Max	75 Max	120 Max	240 Max
	REGULATION, LOAD [mV]	50 Max	50 Max	90 Max	120 Max	150 Max	240 Max	480 Max
	RIPPLE [mVp-p]	50 Max	50 Max	90 Max	120 Max	150 Max	240 Max	480 Max
	RIPPLE, NOISE [mVp-p]	100 Max	100 Max	140 Max	170 Max	200 Max	290 Max	530 Max
	TEMPERATURE DRIFT 0~+50°C [mV]	50 Max	75 Max	135 Max	180 Max	225 Max	360 Max	720 Max
	RISE TIME [ms]	1000 max (ACIN 110V, I <sub>c</sub> =100%)						
HOLDING TIME [ms]	16 typ (ACIN 110V, I <sub>c</sub> =100%)							
PROTECTION CIRCUIT	OVER CURRENT PROTECTION	Works at over 110% of rating and recovers automatically						
	OVER VOLTAGE PROTECTION	Works at 115~140% of rating (In the case of 3.3V, it is 115~160%)						
ELECTRICALLY ISOLATED	INPUT-OUTPUT	AC3,000V 1 minute current 20mA, DC 500V 100MΩ (At room temperature & Humidity)						
	INPUT-CASE, FG	AC2,000V 1 minute current 20mA, DC 500V 100MΩ (At room temperature & Humidity)						
	OUTPUT-CASE, FG	AC500V 1 minute current 100mA, DC 500V 100MΩ (At room temperature & Humidity)						
ENVIRONMENT	OPERATING TEMP AND HUMID	-10~+50°C, 20~90% RH(Non condensing)						
	STORAGE TEMP AND HUMID	-20~+75°C, 20~90% RH(Non condensing)						
	VIBRATION	10~55Hz at 1G, 3 minutes period, 30 minutes along X, Y and Z axis						
	IMPACT	10G for 20ms once on each X, Y and Z axis						
SAFETY	SAFETY REGULATION	UL,C-UL,CE	UL,C-UL,CE	UL,C-UL,CE	UL,C-UL,CE	UL,C-UL,CE	UL,C-UL,CE	UL,C-UL,CE
	LINE CONDUCTED RF VOLTAGE	Complied with FCC Part15 and EN55022 Class A Limits						

## MSF60-S SPECIFICATIONS



MODEL		MSF60-3R3	MSF60-05	MSF60-09	MSF60-12	MSF60-15	MSF60-24	MSF60-48
INPUT	VOLTAGE, FREQUENCY	AC100-240V (AC85~264V or DC120~370V), 50/60Hz (47~440Hz or DC)						
	CURRENT	100V~1.7A, 200V~0.85A						
	EFFICIENCY (AC220V)	67% typ	72% typ	75% typ	78% typ	78% typ	80% typ	80% typ
	INRUSH CURRENT	20A typ(ACIN 110V, I <sub>c</sub> =100%), 40A typ(ACIN 220V, I <sub>c</sub> =100%) at cold start.						
OUTPUT	VOLTAGE [V]	3.3	5	9	12	15	24	48
	CURRENT [A]	12	12	6.6	5	4	2.5	1.3
	REGULATION, LINE [mV]	25 Max	25 Max	45 Max	60 Max	75 Max	120 Max	240 Max
	REGULATION, LOAD [mV]	50 Max	50 Max	90 Max	120 Max	150 Max	240 Max	480 Max
	RIPPLE [mVp-p]	50 Max	50 Max	90 Max	120 Max	150 Max	240 Max	480 Max
	RIPPLE, NOISE [mVp-p]	100 Max	100 Max	140 Max	170 Max	200 Max	290 Max	530 Max
	TEMPERATURE DRIFT 0~+50°C [mV]	50 Max	75 Max	135 Max	180 Max	225 Max	360 Max	720 Max
	RISE TIME [ms]	1000 max (ACIN 110V, I <sub>c</sub> =100%)						
HOLDING TIME [ms]	16 typ (ACIN 110V, I <sub>c</sub> =100%)							
PROTECTION CIRCUIT	OVER CURRENT PROTECTION	Works at over 110% of rating and recovers automatically						
	OVER VOLTAGE PROTECTION	Works at 115~140% of rating (In the case of 3.3V, it is 115~160%)						
ELECTRICALLY ISOLATED	INPUT-OUTPUT	AC3,000V 1 minute current 20mA, DC 500V 100MΩ (At room temperature & Humidity)						
	INPUT-CASE, FG	AC2,000V 1 minute current 20mA, DC 500V 100MΩ (At room temperature & Humidity)						
	OUTPUT-CASE, FG	AC500V 1 minute current 100mA, DC 500V 100MΩ (At room temperature & Humidity)						
ENVIRONMENT	OPERATING TEMP AND HUMID	-10~+50°C, 20~90% RH(Non condensing)						
	STORAGE TEMP AND HUMID	-20~+75°C, 20~90% RH(Non condensing)						
	VIBRATION	10~55Hz at 1G, 3 minutes period, 30 minutes along X, Y and Z axis						
	IMPACT	10G for 20ms once on each X, Y and Z axis						
SAFETY	SAFETY REGULATION	UL,C-UL,CE	UL,C-UL,CE	UL,C-UL,CE	UL,C-UL,CE	UL,C-UL,CE	UL,C-UL,CE	UL,C-UL,CE
	LINE CONDUCTED RF VOLTAGE	Complied with FCC Part15 and EN55022 Class A Limits						