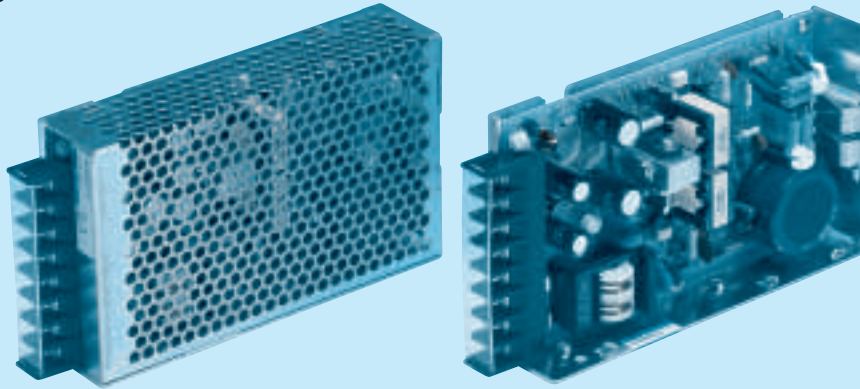


**RoHS**



- ① Series name
- ② Output wattage
- ③ Output voltage combination
- ④ Optional  
 C : with Coating  
 J : Connector type  
 N : with Cover

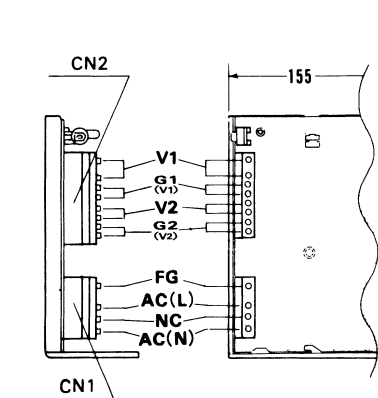
MODEL		MMB50A-1	MMB50A-2	MMB50A-3	MMB50A-4	MMB50A-5	MMB50A-6
DC OUTPUT	V1	+5V 3.0A	+5V 5.0A	+5V 3.0A	+12V 2.1A	+12V 3.0A	+15V 1.7A
	V2	+12V 3.0(Peak 3.6)A	+12V 2.1A	+24V 1.5(Peak 1.8)A	+12V 2.1A	+12V 1.5A	+15V 1.7A

## SPECIFICATIONS

	MODEL	MMB50A-1	MMB50A-2	MMB50A-3	MMB50A-4	MMB50A-5	MMB50A-6							
INPUT	VOLTAGE[V]	AC85 - 132 1 $\phi$ or DC110 - 170												
	CURRENT[A]	ACIN 100V	1.4typ (Io=100%)											
	FREQUENCY[Hz]	47 - 440 or DC												
	EFFICIENCY[%]	75typ		72typ		75typ		76typ		76typ		76typ		
	INRUSH CURRENT[A]	ACIN 100V	20typ (Io=100%) (At cold start)											
OUTPUT	VOLTAGE[V]	+5	+12	+5	+12	+5	+24	+12	+12	+12	+12	+15	+15	
	CURRENT[A]	3	3 (Peak3.6)	5	2.1	3	1.5 (Peak1.8)	2.1	2.1	3	1.5	1.7	1.7	
	MINIMUM CURRENT[A]	0	0	0	0	0	0	0	0	0	0	0	0	
	LINE REGULATION[mV]	20max	48max	20max	48max	20max	96max	48max	48max	48max	48max	60max	60max	
	LOAD REGULATION[mV]	40max	100max	40max	100max	40max	150max	100max	100max	100max	100max	120max	120max	
	RIPPLE[mVp-p]	0 to +50°C	80max	120max	80max	120max	80max	120max	120max	120max	120max	120max	120max	120max
		-10 - 0°C	140max	160max	140max	160max	140max	160max	160max	160max	160max	160max	160max	160max
	RIPPLE NOISE[mVp-p]	0 to +50°C	120max	150max	120max	150max	120max	150max	150max	150max	150max	150max	150max	150max
		-10 - 0°C	160max	180max	160max	180max	160max	180max	180max	180max	180max	180max	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	120max	50max	120max	50max	240max	120max	120max	120max	120max	150max	150max
START-UP TIME[ms]	100max (ACIN 85V, Io=100%)													
HOLD-UP TIME[ms]	15typ (ACIN 85V, Io=100%) 25typ (ACIN 100V, Io=100%)													
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	4.5 - 5.5	Fixed	4.5 - 5.5	Fixed	4.5 - 5.5	Fixed	10.8 - 13.2	Fixed	10.8 - 13.2	Fixed	13.5 - 16.5	Fixed		
OUTPUT VOLTAGE SETTING[V]	—	11.64 - 12.36	—	11.64 - 12.36	—	23.28 - 24.72	—	11.64 - 12.36	—	11.64 - 12.36	—	14.55 - 15.45		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works at over 105% of rating (V2 works at peak current) and recovers automatically												
	OVERVOLTAGE PROTECTION	Works at 115 - 140% of rating												
ISOLATION	INPUT-CASE, OUTPUT	AC2,000V 1minute, DC500V 50M $\Omega$ min (At Room Temperature)												
	OUTPUT-CASE	AC500V 1minute, DC500V 50M $\Omega$ min (At Room Temperature)												
	OUTPUT-OUTPUT(V1-V2)	AC100V 1minute, DC100V 50M $\Omega$ min (At Room Temperature)												
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE	-10 to +65°C, 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max												
	STORAGE TEMP., HUMID. AND ALTITUDE	-25 to +75°C, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max												
	VIBRATION	10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 30minutes each along X, Y and Z axis												
	IMPACT	196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis												
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL60950-1, C-UL Complies with DEN-AN												
	CONDUCTED NOISE	Complies with FCC-B												

\* Series/Parallel operation with other model is not possible.  
 \* Derating is required when operated with case cover.

External view



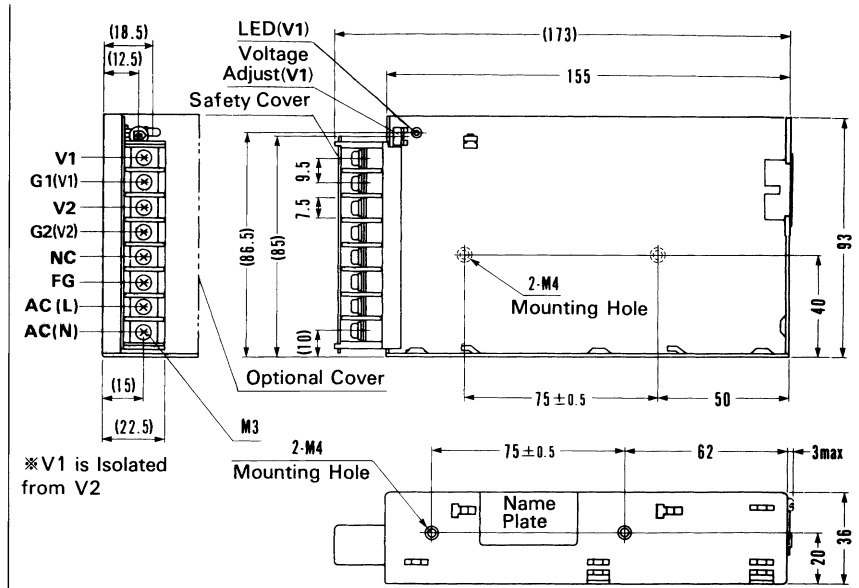
I/O Connector	Mating Connector
CN1	5289-4A / 5199-04
CN2	5277-08A / 5196-08

Terminal
Chain : 5194PBT
Loose : 5194PBTL

(Mfr: Molex)

\* Use J cover for connector type.

Connector type



\* V1 is Isolated from V2

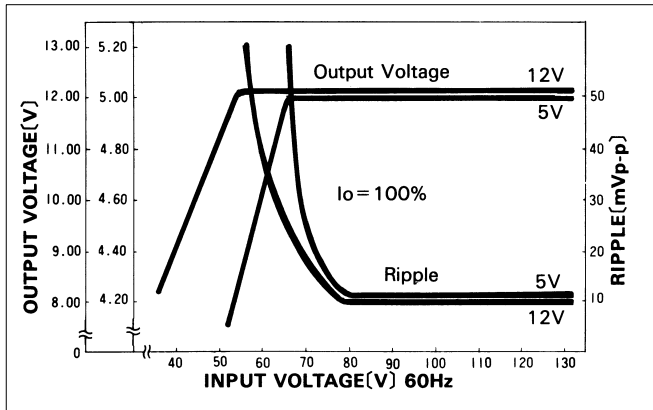
\* Mounting torque : 1.2N·m (12.8kgf·cm) max

Barrier strip type

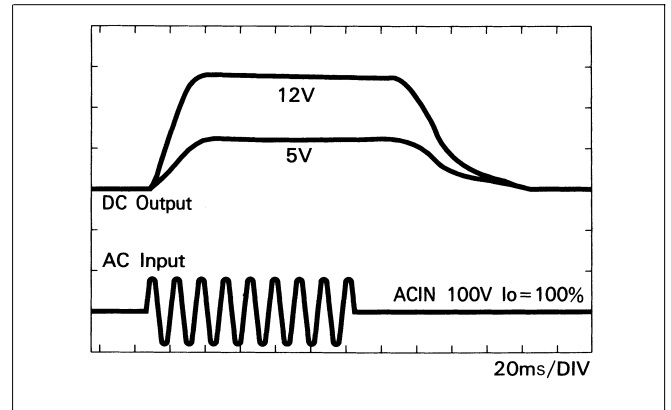
\* Weight: 400g or less  
 \* Cover is optional  
 \* Tolerance: ±1 \* Dimension in mm.

Performance data

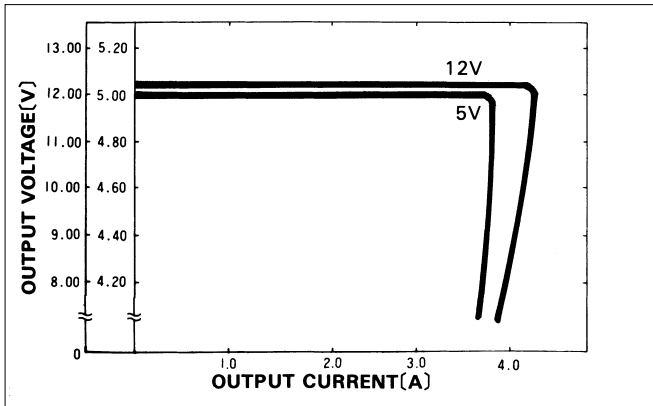
■ STATIC CHARACTERISTICS (MMB50A-1)



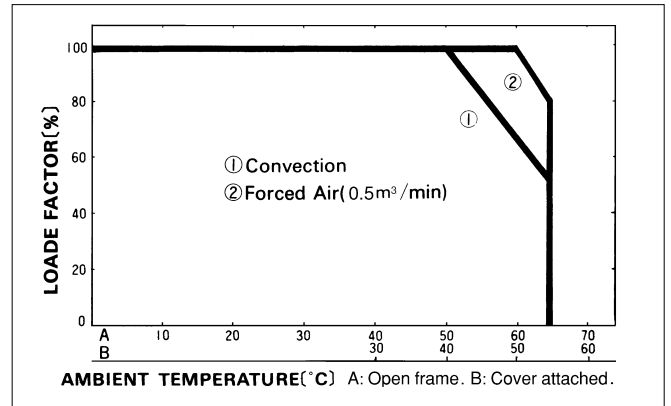
■ RISE TIME & FALL TIME (MMB50A-1)



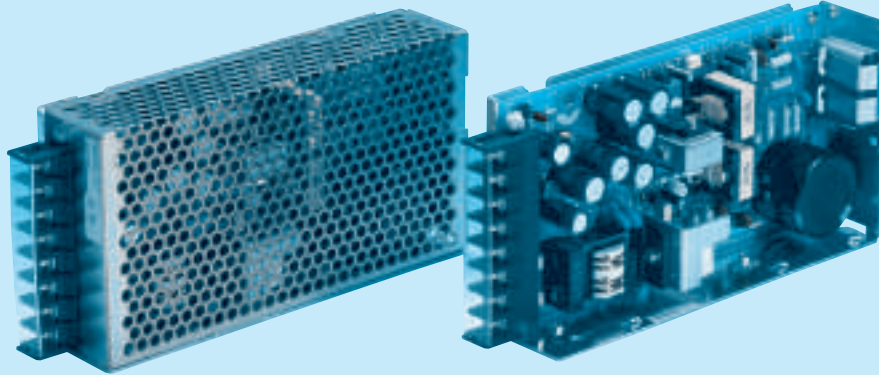
■ OVERCURRENT CHARACTERISTICS (MMB50A-1)



■ DERATING CURVE



RoHS



- ① Series name
- ② Output wattage
- ③ Output voltage combination
- ④ Optional  
J : Connector type  
N : with Cover

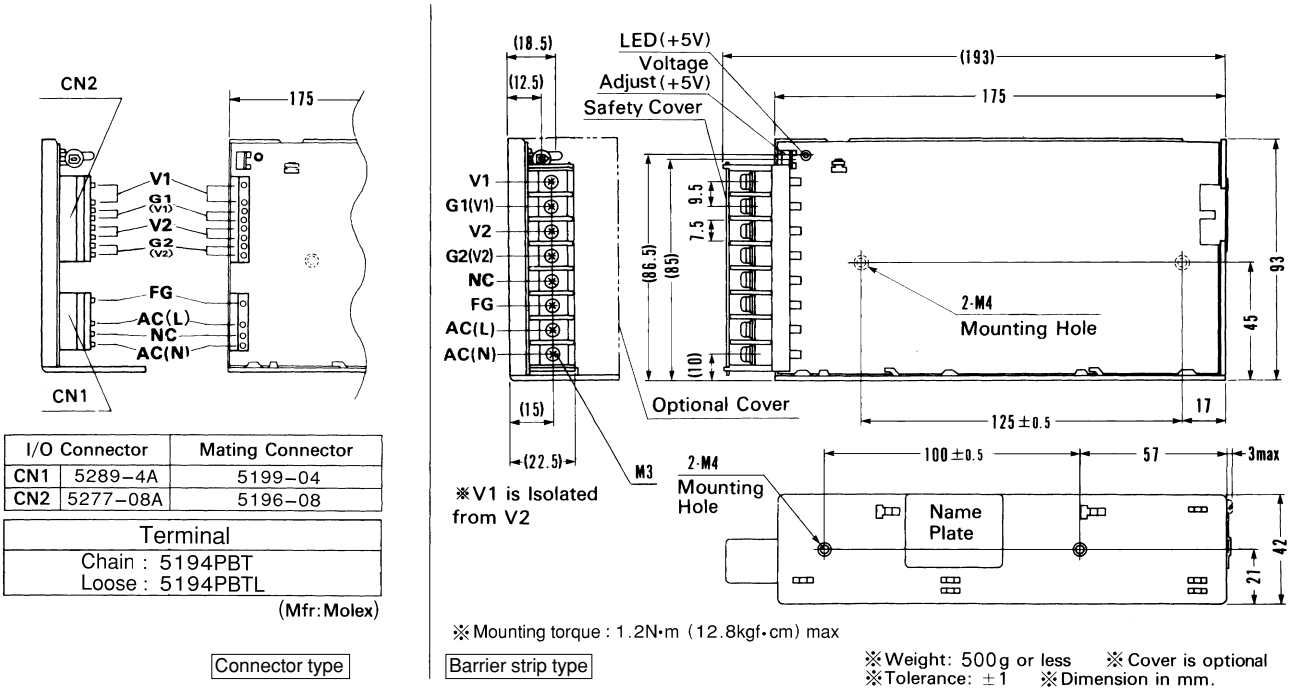
MODEL	MMB75A-1		MMB75A-2	
DC OUTPUT	V1	+5V 5.0A	+5V 6.0A	
	V2	+12V 4.0A	+24V 2.0A	

## SPECIFICATIONS

	MODEL	MMB75A-1		MMB75A-2		
INPUT	VOLTAGE[V]	AC85 - 132 1 $\phi$ or DC110 - 170				
	CURRENT[A]	ACIN 100V	2.1typ (Io=100%)			
	FREQUENCY[Hz]	47 - 440 or DC				
	EFFICIENCY[%]	ACIN 100V	76typ (Io=100%)	78typ (Io=100%)		
	INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%)			
OUTPUT	VOLTAGE[V]	+5	+12	+5	+24	
	CURRENT[A]	5	4	6	2	
	MINIMUM CURRENT[A]	0	0	0	0	
	LINE REGULATION[mV]	20max	48max	20max	96max	
	LOAD REGULATION[mV]	40max	100max	40max	150max	
	RIPPLE[mVp-p]	0 to +50°C	80max	120max	80max	120max
		-10 - 0°C	140max	160max	140max	160max
	RIPPLE NOISE[mVp-p]	0 to +50°C	120max	150max	120max	150max
		-10 - 0°C	160max	180max	160max	180max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	120max	50max	240max
START-UP TIME[ms]	200max (ACIN 85V, Io=100%)					
HOLD-UP TIME[ms]	15typ (ACIN 85V, Io=100%) 25typ (ACIN 100V, Io=100%)					
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	4.5 - 5.5	Fixed	4.5 - 5.5	Fixed		
OUTPUT VOLTAGE SETTING[V]	—	11.64 - 12.36	—	23.28 - 24.72		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION	Works at 115 - 140% of rating				
ISOLATION	INPUT-CASE, OUTPUT	AC2,000V 1minute, DC500V 50M $\Omega$ min (At Room Temperature)				
	OUTPUT-CASE	AC500V 1minute, DC500V 50M $\Omega$ min (At Room Temperature)				
	OUTPUT-OUTPUT(V1-V2)	AC100V 1minute, DC100V 50M $\Omega$ min (At Room Temperature)				
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE	-10 to +65°C, 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max				
	STORAGE TEMP., HUMID. AND ALTITUDE	-25 to +75°C, 20 - 95%RH (Non condensing), 9,000m (30,000feet) max				
	VIBRATION	10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 30minutes each along X, Y and Z axis				
	IMPACT	196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis				
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL60950-1, C-UL Complies with DEN-AN				
	CONDUCTED NOISE	Complies with FCC-B				

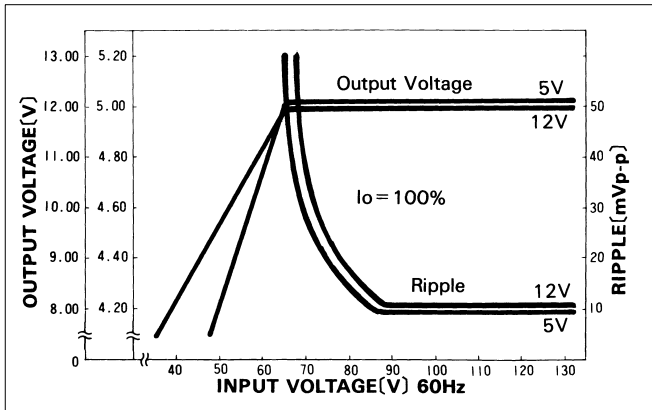
\* Series/Parallel operation with other model is not possible.  
\* Derating is required when operated with case cover.

External view

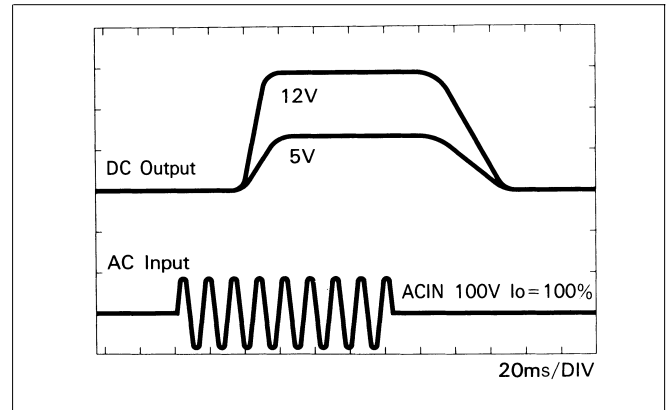


Performance data

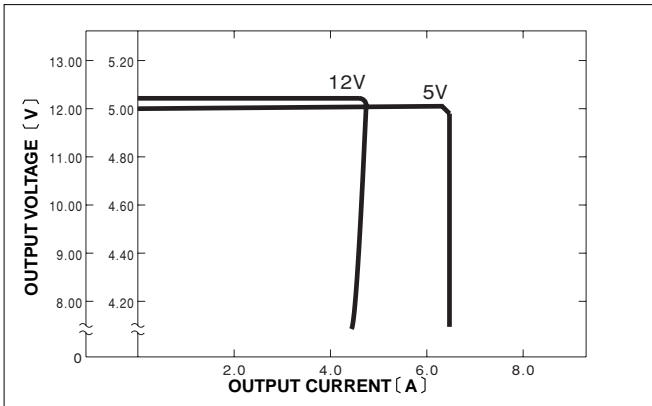
■ STATIC CHARACTERISTICS (MMB75A-1)



■ RISE TIME & FALL TIME (MMB75A-1)



■ OVERCURRENT CHARACTERISTICS (MMB75A-1)



■ DERATING CURVE

