

## ZBM20/L

### SPECIFICATIONS

PA642-01-01/L-B

ITEMS	MODEL		ZBM20-12/L	ZBM20-15/L	ZBM20-24/L	
1	Nominal Buffer Voltage	(Fixed Mode)	V	11	13.8	22.4
2	Buffer Current		A	20		
3	Buffer Power	(* 1)	W	220	276	448
4	Nominal Input Voltage		V	12	15	24
5	Input Voltage Range	(Fixed Mode) (VIN-1)	V	11.5 - 14.4	14.4 - 18	23 - 30
				-	-	24 - 30
6	Input Current (Typ.)		A	0.8 at Charging Mode 0.2 at Ready Mode		
7	Charging Time (Typ.)		s	40		
8	Buffer Voltage Accuracy (* 1)	(Fixed Mode)	%	± 2		
		(* 9) (VIN-1)	%	-	-	+3/-4
9	Maximum Ripple & Noise	(* 1, 3)	mV	< 160		< 240
10	Input Over Voltage Protection	(* 2)	-	Yes		
11	Over Current Protection	(* 4)	-	> 105% of rated Buffer Current		
12	Buffer time (Typ)	(* 1, 5)	ms	380		
13	Monitoring Signals	(* 6)	-	a) DC OK Signal (Photo Relay Rated : 30V, 0.2A) b) Ready, Buffer & Inhibit Signals (Common Supply Voltage)		
14	Bulk Capacitor Voltage Monitoring	(* 10)	-	Green LED		
15	Parallel Operation		-	Yes		
16	Series Operation		-	No		
17	Operating Temperature	(* 7)	°C	-25 ~ + 70		
18	Operating Humidity		-	30 ~ 90%RH (No Dewdrop)		
19	Storage Temperature		°C	-25 ~ + 85		
20	Storage Humidity		-	10 ~ 90%RH (No Dewdrop)		
21	Operating Altitude		m	5000		
22	Cooling		-	Convection Cooling		
23	Withstand Voltage		-	Input/output & signal ports - FG : 500VAC (100mA) 1 MINUTE		
24	Isolation Resistance		-	Input/output & signal ports - FG : ... More Than 100MΩ (500VDC) AT Ta=25°C & 70%RH		
25	Vibration		-	At no operating, 10 - 55Hz (sweep for 1min) 19.6m/s <sup>2</sup> Constant, X, Y, Z 1hour each.		
26	Shock		m/s <sup>2</sup>	Less than 196.1		
27	Safety		-	Approved by : IEC62368-1 (EN62368-1 : CB and Certificate), UL62368-1, CSA C22.2 No. 62368-1		
28	UKCA		-	Safety and EMC Reg. 2016, Hazard. Substances Reg. 2012		
29	EMI	(* 8)	-	Design to meet EN55032-B, CISPR32-B		
30	Immunity		-	Design to meet IEC61000-4-2 (Level 4), -3 (Level 3), -4 (Level 3), -5 (Level 2), -6 (Level 3)		
31	Weight (Typ.)		g	800		
32	Warranty		-	5-Year		
33	Dimension (L x H x W)		mm	212 x 67 x 91.5 (Refer to Outline Drawing)		

\* Read instruction manual carefully , before using the buffer module unit.

= NOTES=

- \* 1 : At Ta=25 °C, nominal buffer voltage and average buffer power.
- \* 2 : Input voltage is 35Vmax for ZBM20-24/L, 22Vmax for ZBM20-15/L & 19Vmax for ZBM20-12/L.
- \* 3 : Ripple & noise are measured at 20MHz by using a 150mm twisted pair of load wires terminated with a 0.1uF film capacitor and a 100uF electrolytic capacitor.
- \* 4 : When the buffer current exceeds 105% of the maximum DC buffer current specification, OCP operation will be activated. Automatic recovery.
- \* 5 : Refer to (PA642-01-03/L\_ & 01-04/L\_) for buffer time versus buffer current.
- \* 6 : Please refer to instruction manual for more details.
- \* 7 : Refer to Derating Curve (PA642-01-02/L\_) for details of buffer current versus ambient temperature.
- \* 8 : EMI (CE) compliance to be confirmed at system level. Product is considered as a peripheral accessory to power supply.
- \* 9 : Buffer current, Iout > 5%.
- \* 10 : LED is off when bulk capacitor is less than ES1 level.
- \* 11 : All parameters NOT specifically mentioned are measured at rated load & nominal input at ready mode, and during buffering at fixed mode.  
All measurement are conducted at Ta=25 °C.

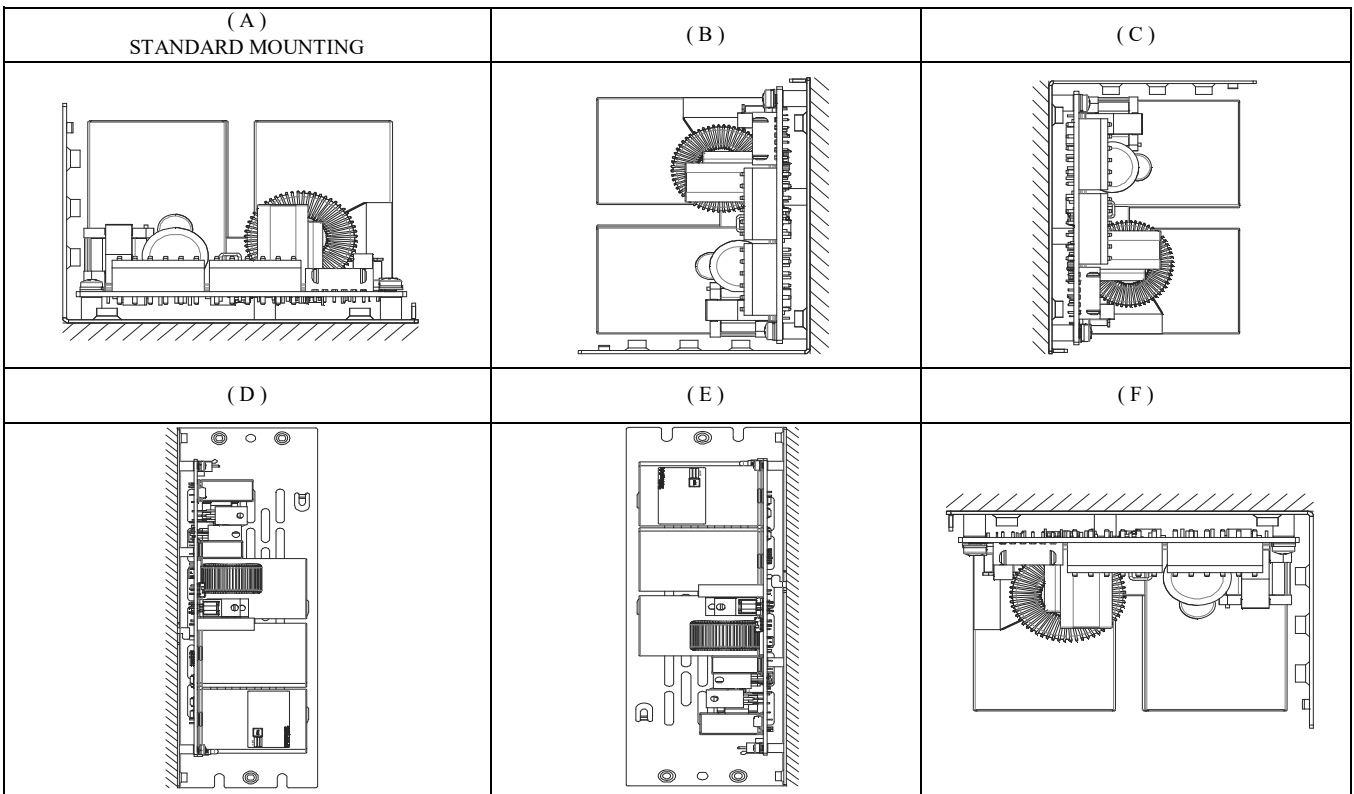
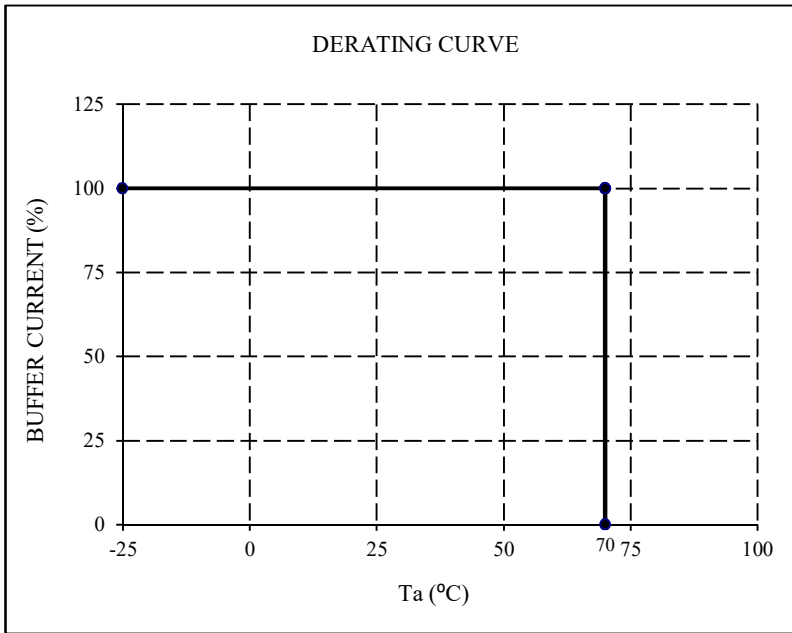
**ZBM20/L**

DERATING CURVE FOR BUFFER CURRENT VERSUS AMBIENT TEMPERATURE

PA642-01-02/L

**\*COOLING : CONVECTION COOLING**

Ta (°C)	LOAD (%)	
	A Standard Mounting	B, C, D, E, F
-25 - +70	100	100



**ZBM20/L**

BUFFER TIME VERSUS BUFFER CURRENT

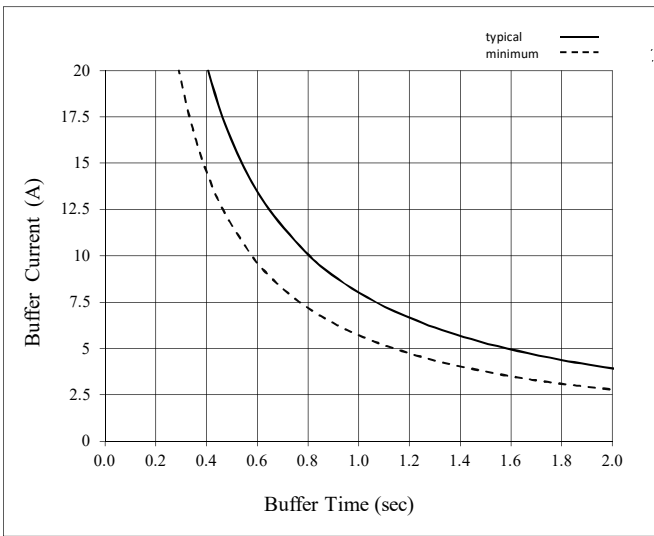
PA642-01-03/L

\*Note :  $T_a=25^{\circ}\text{C}$  and initial capacitance.

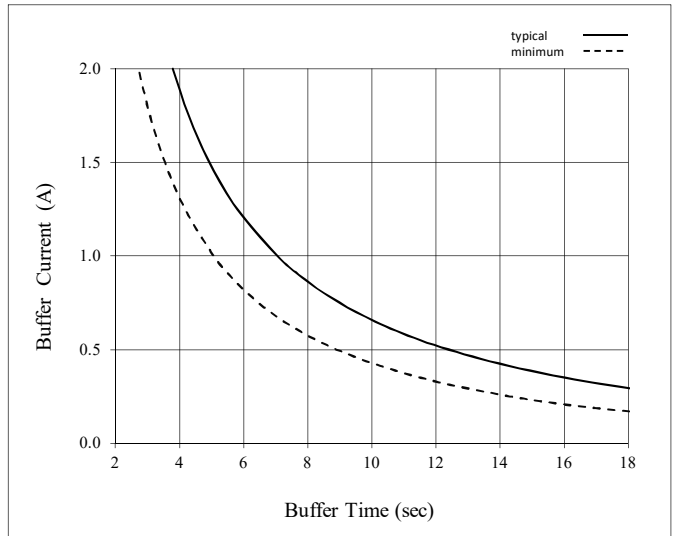
**ZBM20-24/L**

**FIXED Mode and Nominal Buffer Voltage**

a) Buffer time : 0 - 2 sec

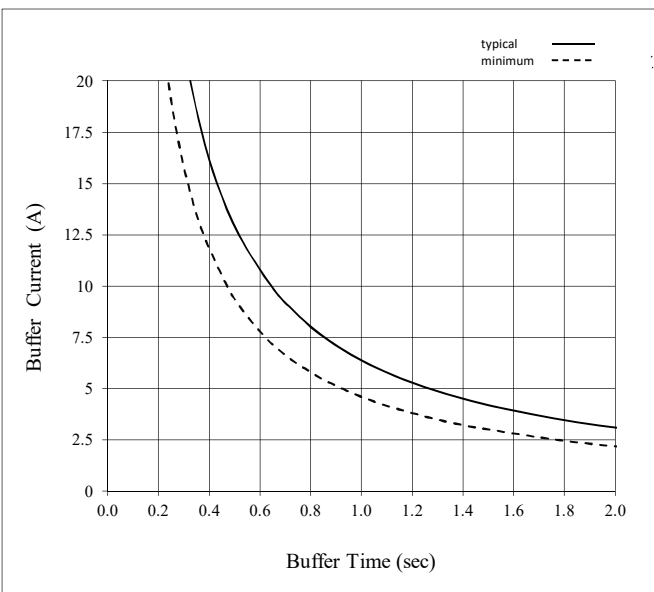


b) Buffer time for small buffer current : 2 - 18 sec

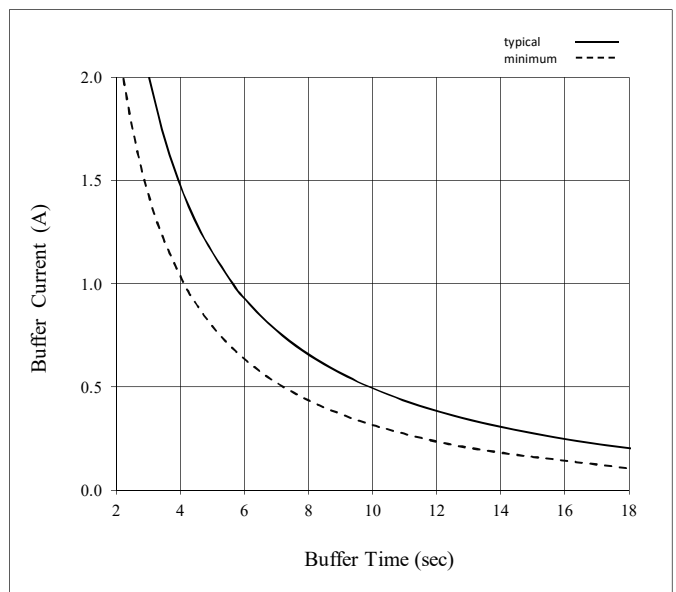


**VIN-1 and Maximum Buffer Voltage**

a) Buffer time : 0 - 2 sec



b) Buffer time for small buffer current : 2 - 18 sec



**ZBM20/L**

BUFFER TIME VERSUS BUFFER CURRENT

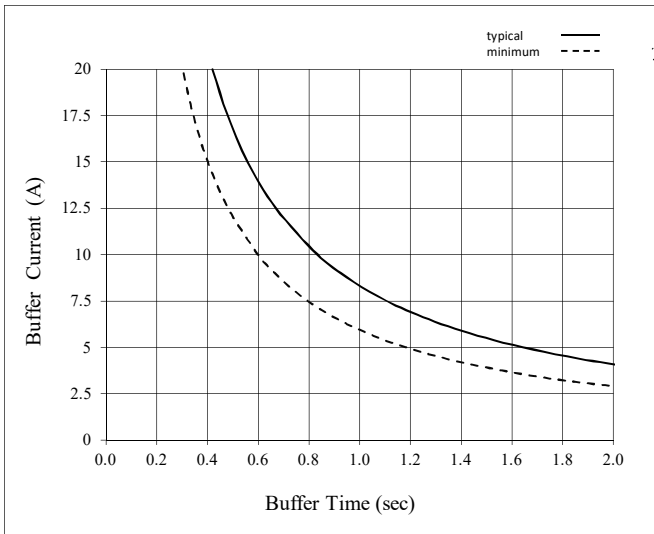
PA642-01-04/L

\*Note : Ta=25°C and initial capacitance.

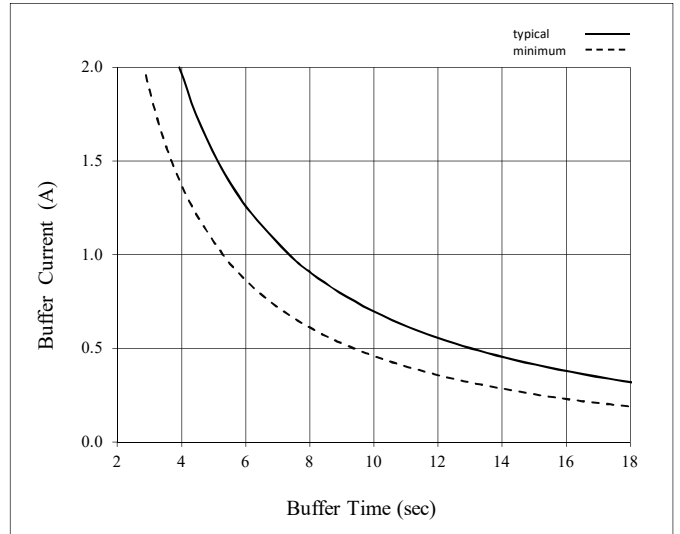
**ZBM20-12/L**

**FIXED Mode and Nominal Buffer Voltage**

a) Buffer time : 0 - 2 sec



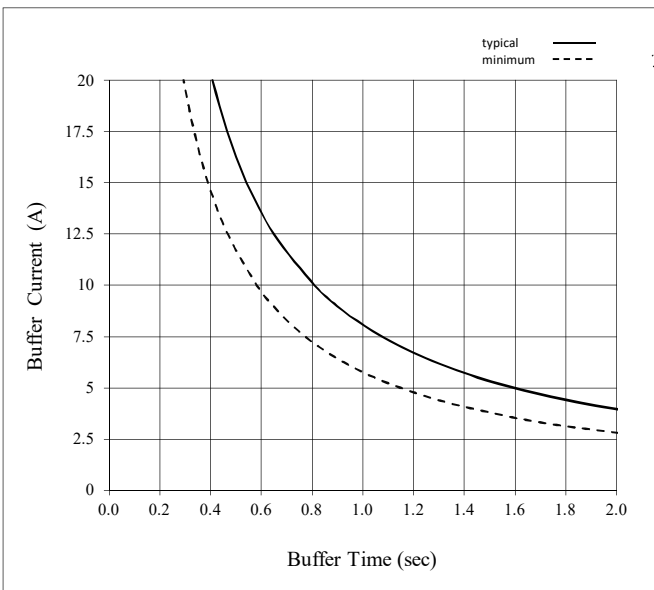
b) Buffer time for small buffer current : 2 - 18 sec



**ZBM20-15/L**

**FIXED Mode and Nominal Buffer Voltage**

a) Buffer time : 0 - 2 sec



b) Buffer time for small buffer current : 2 - 18 sec

