






Small-Sized Valve Regulated Lead-Acid Batteries Catalog

NP, PE, PX, PXL, PWL



Small-Sized Valve Regulated Lead-Acid Batteries Line-Up

Type	Series	Nominal Voltage	Nominal Capacity
Standard Type	NP 	12V	38Ah (20 HR)
	PE 	6V	48Ah (20 HR)
		12V	0.8 ~ 40Ah (20 HR)
High Rate Type	PX 	12V	2.6Ah (20 HR)
High Rate and Long Life Type	PXL 	12V	2.3~7.2Ah (20 HR)
Very Long Life Type	PWL 	12V	15 ~ 38Ah (20 HR)

Expected Life	Application	Features
3 years	Alarm & Security Systems Elevator Telephone Exchange Emergency Light	Comprehensive line up for various applications
3 years	UPS CATV Alarm Systems Telecom	Suitable for high discharge rate applications
6 years	UPS CATV Alarm & Security Systems Telecom Measuring Equipment Elevator Telephone Exchange	Long life for lower life cycle cost
13 years	UPS CATV Alarm & Security Systems Telecom	Superior long life (13 years)

Standard Type

NP

PE



NP Series



PE Series

Charging Method:
Constant Voltage

Float Charging Voltage:
2.275V/cell

Temperature Compensation:
-3mV/°C/cell

Initial Max. Charging Current:
 $0.25C_{20}A$

Operating Temperature:
-15°C to +40°C

Expected Life:
3 years

Base Temperature for Compensation:
+25°C

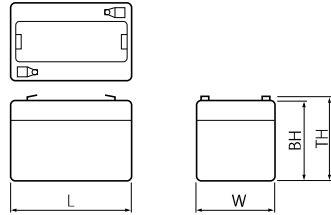
Recommended Operating Temperature:
+5°C to +30°C

*The actual appearance may differ from these images.

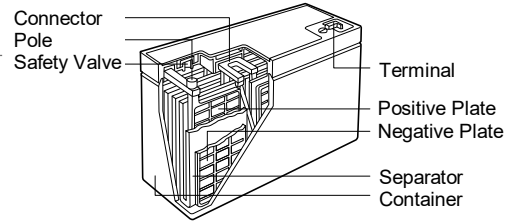
Final Discharging Voltage (F.V.)

Series	Discharging Current	F.V.
NP	less than $0.2C_{20}A$	1.75V/cell
	$0.2C_{20}A \sim 0.5C_{20}A$	1.70V/cell
	$0.5C_{20}A \sim 1.0C_{20}A$	1.55V/cell
	more than $1.0C_{20}A$	1.30V/cell
PE	less than $0.01C_{20}A$	1.90V/cell
	$0.01C_{20}A \sim 0.2C_{20}A$	1.75V/cell
	$0.2C_{20}A \sim 0.5C_{20}A$	1.70V/cell
	$0.5C_{20}A \sim 1.0C_{20}A$	1.60V/cell
	$1.0C_{20}A \sim 2.0C_{20}A$	1.50V/cell
	$2.0C_{20}A \sim 3.0C_{20}A$	1.35V/cell
	more than $3.0C_{20}A$	1.00V/cell

Outline



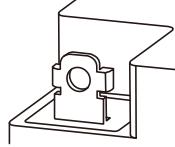
Structure



Terminal Type

Bolt and Nut

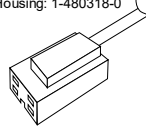
B1: Bolt and Nut M5
B2: Bolt and Nut M6



Socket Plug with Lead Wire

W3: J.S.T. Mfg. Co., Ltd.
Socket: SVH-21T-P1.1
Socket Housing: VHR-2N

WS: Tyco Electronics Japan G.K.
Socket: 60617-1
Socket Housing: 1-480318-0



Terminal Position

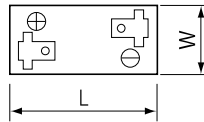


Fig.6



Fig.7



Fig.8



Fig.9



Fig.10



Socket Plug with Lead Wire
 Bolt and Nut

Specification

Series	Type	Nominal Voltage [V]	Nominal Capacity [Ah] (20HR)	Outline Dimension [mm]				Weight [kg] (approx.)	Terminal Type	Terminal Position (Fig. No.)	Flame Retardancy
				Total Height (TH)	Box Height (BH)	Width (W)	Length (L)				
NP	NP38-12J FR	12	38.0	174	174	163	197	13.8	B1	7	FR
	PE6V48	6	48.0	177	170	125	166	9.1	B2	9	-
PE	PE12V0.8		0.8	61.5	61.5	25	96	0.36	W3 WS	6	-
	PE12V2		2.0	60.5	60.5	25	200.5	0.8	WS	6	-
	PE12V17	12	17.0	167	167	76	181	5.6	B1	7	-
	PE12V24		24.0	175	175	125	166	8.7	B1	8	-
	PE12V24A ^{*2}		24.0	125	125	166	175	8.7	B1	10	FR / -
	PE12V40		40.0	174	174	163	197	13.0	B2	7	-

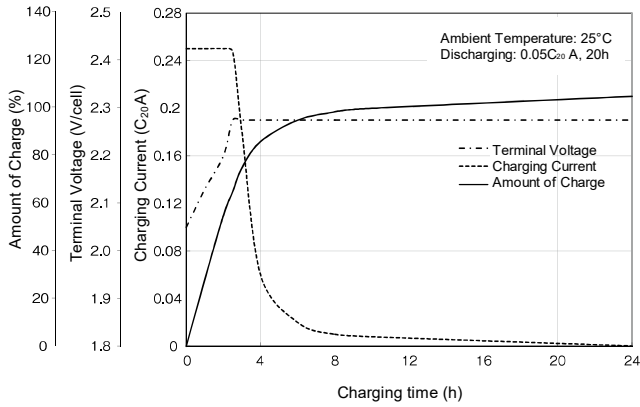
*1 Expected life is the number of years estimated by converting the endurance period obtained from the high-temperature float accelerated life test into the period of actual use at 25°C. The expected life is the estimated value applied for not all conditions but under certain condition.

*2 The dimensions of PE12V24A are for the installation with the printing side facing up.

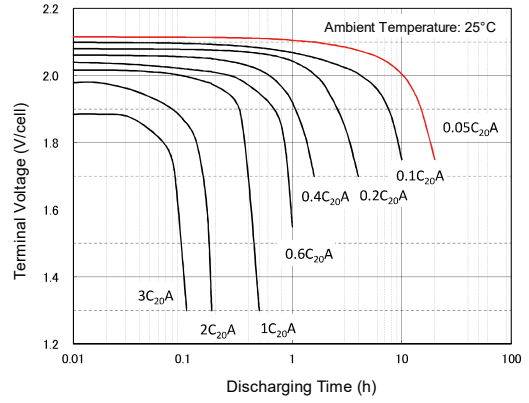
NP Series Characteristics

*All values of these graphs are for reference only (not guaranteed value).

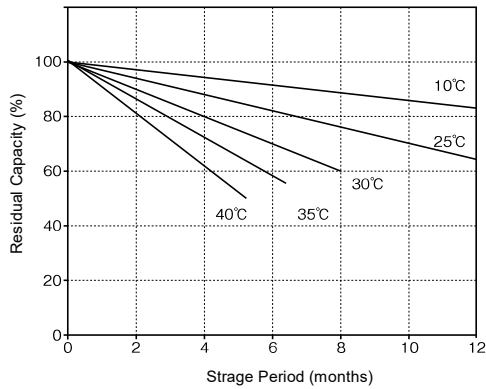
Constant Voltage Charging



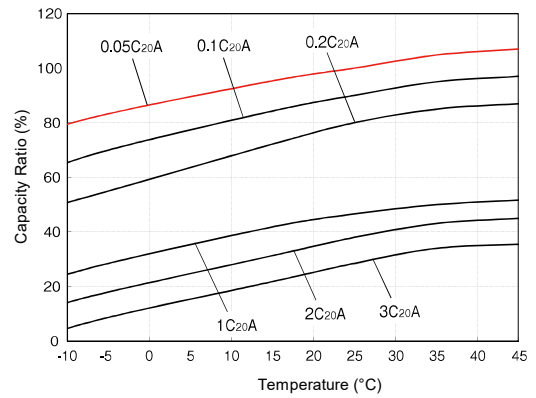
Discharging Curves



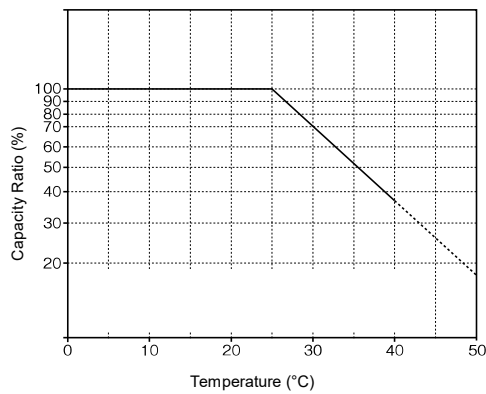
Capacity Retention



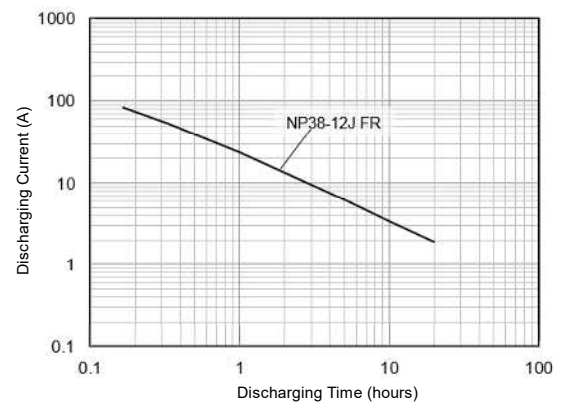
Capacity at Various Temperature



Expected Life at Various Temperature



Selection Chart

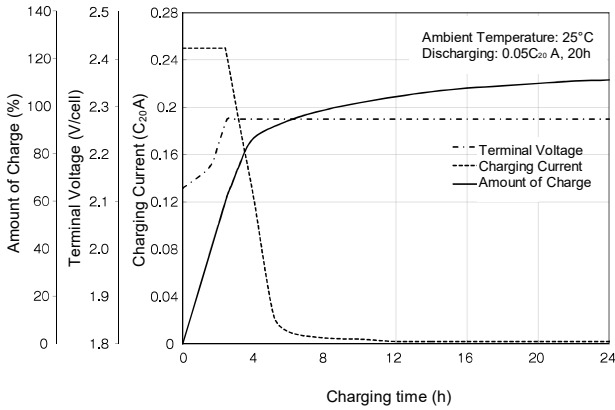


*Plotting a point of discharging current (multiplied by aging factor) against time of discharge. The nearest and larger capacity line from the point is the suitable battery.

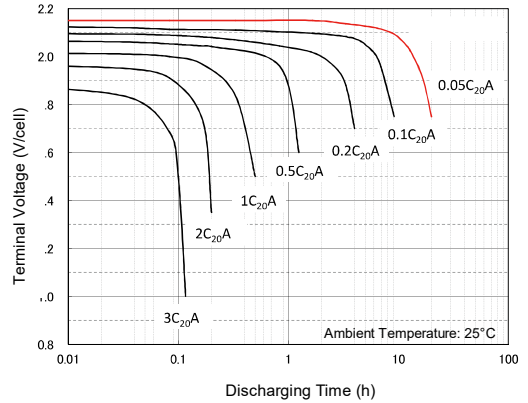
PE Series Characteristics

*All values of these graphs are for reference only (not guaranteed value).

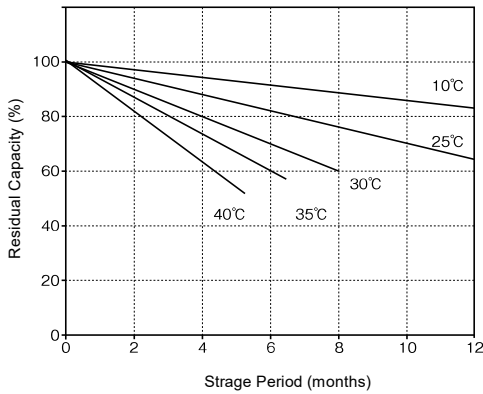
Constant Voltage Charging



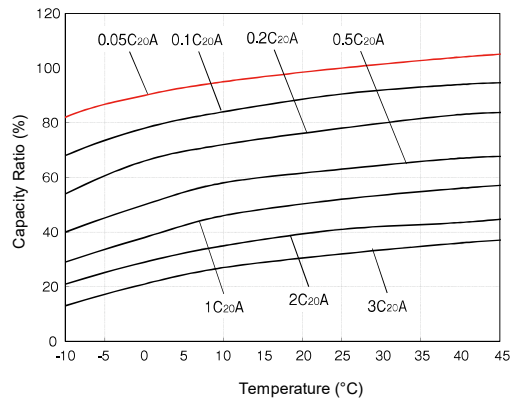
Discharging Curves



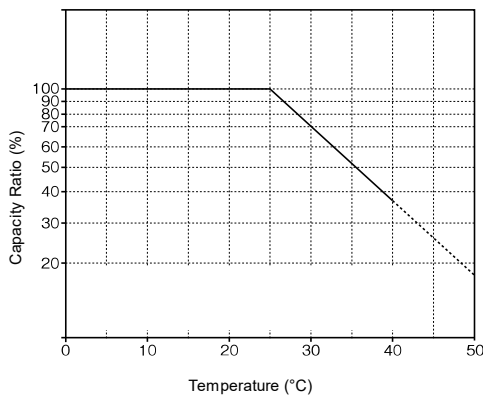
Capacity Retention



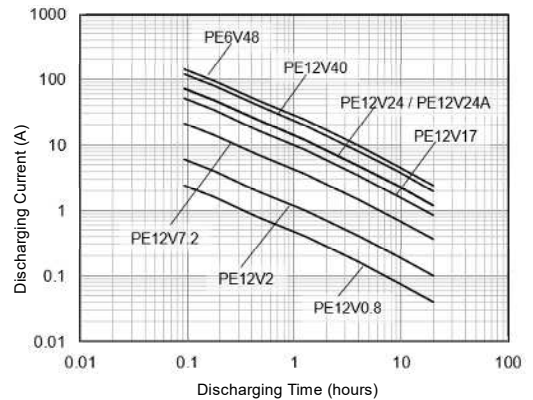
Capacity at Various Temperature



Expected Life at Various Temperature



Selection Chart



*Plotting a point of discharging current (multiplied by aging factor) against time of discharge. The nearest and larger capacity line from the point is the suitable battery.

Ex) Discharging current 2A, time 2h: PE6V8

High Rate Type

PX



PX Series

*The actual appearance may differ from these images.

Charging Method:
Constant Voltage

Float Charging Voltage:
2.275V/cell

Temperature Compensation:
-3mV/°C/cell

Initial Max. Charging Current:
0.25C₂₀A

Operating Temperature:
-15°C to +40°C

Expected Life:
3 years

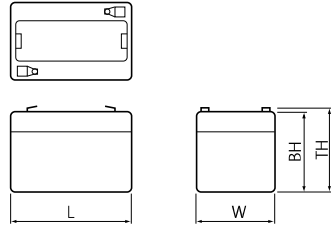
Base Temperature for Compensation:
+25°C

Recommended Operating Temperature:
+5°C to +30°C

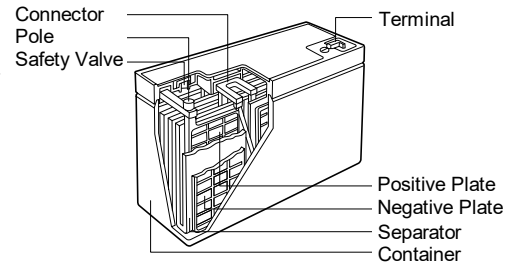
Final Discharging Voltage (F.V.)

Series	Discharging Current	F.V.
PX	less than 0.01C ₂₀ A	1.90V/cell
	0.01C ₂₀ A ~ 0.2C ₂₀ A	1.75V/cell
	0.2C ₂₀ A ~ 0.5C ₂₀ A	1.70V/cell
	0.5C ₂₀ A ~ 1.0C ₂₀ A	1.60V/cell
	1.0C ₂₀ A ~ 2.0C ₂₀ A	1.50V/cell
	2.0C ₂₀ A ~ 3.0C ₂₀ A	1.35V/cell
	more than 3.0C ₂₀ A	1.00V/cell

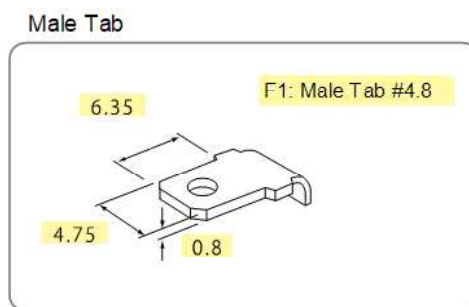
Outline



Structure



Terminal Type



Terminal Position

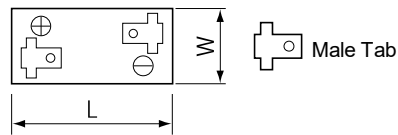
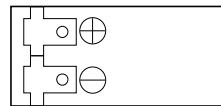


Fig.3



Specification

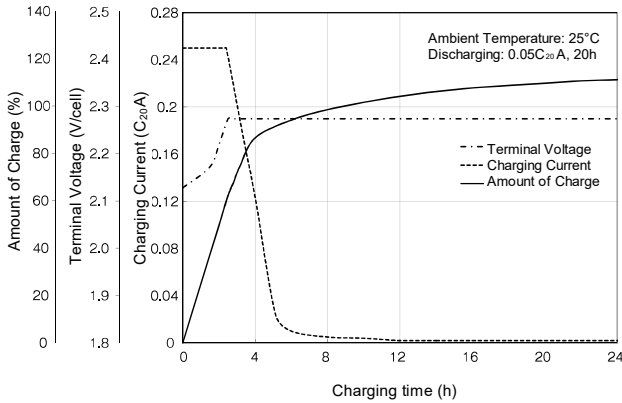
Series	Type	Nominal Voltage [V]	Nominal Capacity [Ah] (20Ah)	Outline Dimension [mm]				Weight [kg] (approx.)	Terminal Type	Terminal Position	Flame Retardancy
				Total Height (TH)	Box Height (BH)	Width (W)	Length (L)				
PX	PX12026	12	2.6	65	60	34.5	178	1.0	F1	3	FR

*1 Expected life is the number of years estimated by converting the endurance period obtained from the high-temperature float accelerated life test into the period of actual use at 25°C. The expected life is the estimated value applied for not all conditions but under certain condition.

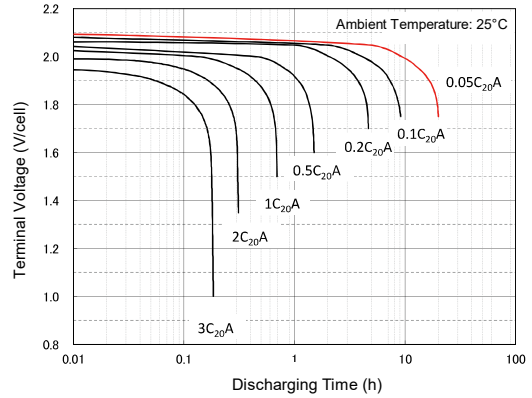
PX Series Characteristics

*All values of these graphs are for reference only (not guaranteed value).

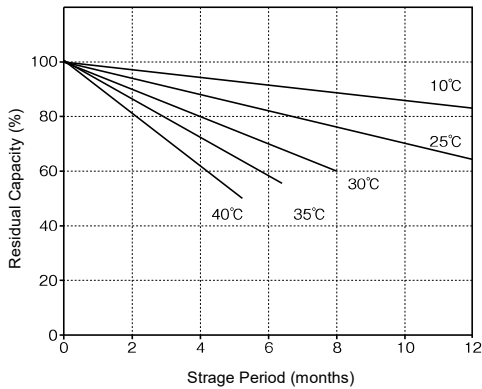
Constant Voltage Charging



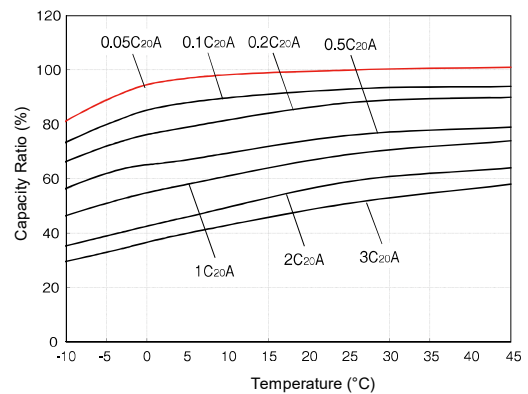
Discharging Curves



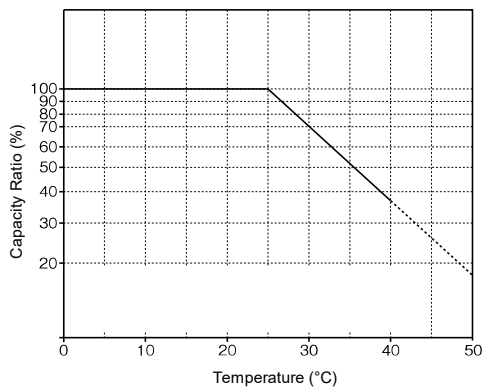
Capacity Retention



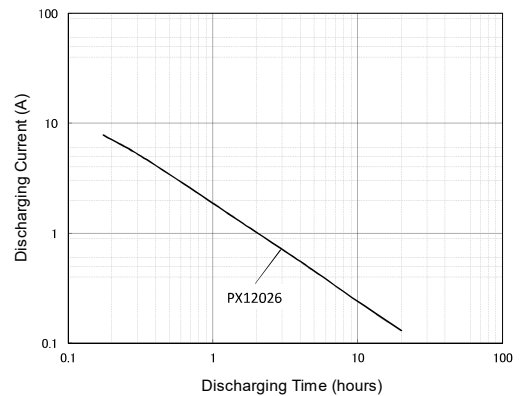
Capacity at Various Temperature



Expected Life at Various Temperature



Selection Chart



*Plotting a point of discharging current (multiplied by aging factor) against time of discharge. The nearest and larger capacity line from the point is the suitable battery.

High Rate and Long Life Type

PXL



PXL Series

*The actual appearance may differ from these images.

Charging Method:
Constant Voltage

Float Charging Voltage:
2.275V/cell

Temperature Compensation:
-3mV/°C/cell

Initial Max. Charging Current:
0.25C₂₀A

Operating Temperature:
-15°C to +40°C

Expected Life:
6 years

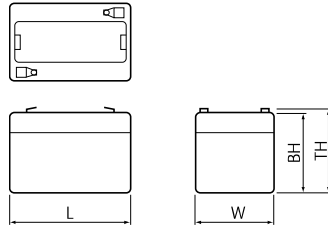
Base Temperature for Compensation:
+25°C

Recommended Operating Temperature:
+5°C to +30°C

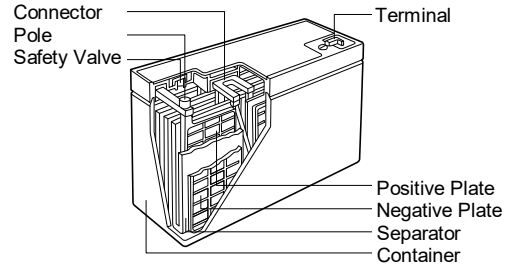
Final Discharging Voltage (F.V.)

Series	Discharging Current	F.V.
PXL	less than 0.01C ₂₀ A	1.90V/cell
	0.01C ₂₀ A ~ 0.2C ₂₀ A	1.75V/cell
	0.2C ₂₀ A ~ 0.5C ₂₀ A	1.70V/cell
	0.5C ₂₀ A ~ 1.0C ₂₀ A	1.60V/cell
	1.0C ₂₀ A ~ 2.0C ₂₀ A	1.50V/cell
	2.0C ₂₀ A ~ 3.0C ₂₀ A	1.35V/cell
	more than 3.0C ₂₀ A	1.00V/cell

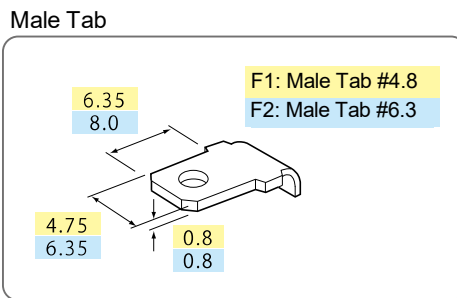
Outline



Structure



Terminal Type



Terminal Position

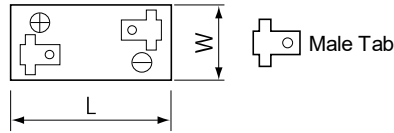


Fig.3

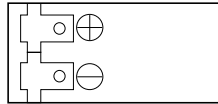
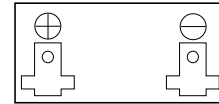


Fig.11



Specification

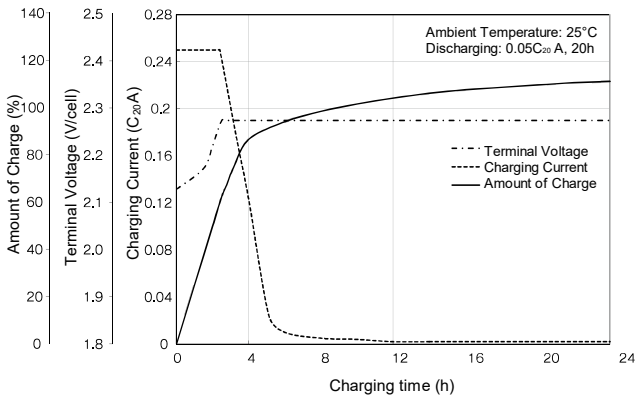
Series	Type	Nominal Voltage [V]	Nominal Capacity [Ah] (20HR)	Outline Dimension [mm]			Weight [kg] (approx.)	Terminal Type	Terminal Position (Fig. No.)	Flame Retardancy	
				Total Height (TH)	Box Height (BH)	Width (W)					Length (L)
PXL	PXL12023	12	2.3	65	60	34.5	178	1.0	F1	3	-
	PXL12050J FR		5.0	105.5	102	70	90	2.0	F2	11	FR
	PXL12072J FR		7.2	98	94	65	151	3.0	F1	3	FR
	PXL12072H FR		7.2	98	94	65	151	3.0	F2	3	FR

*1 Expected life is the number of years estimated by converting the endurance period obtained from the high-temperature float accelerated life test into the period of actual use at 25°C. The expected life is the estimated value applied for not all conditions but under certain condition.

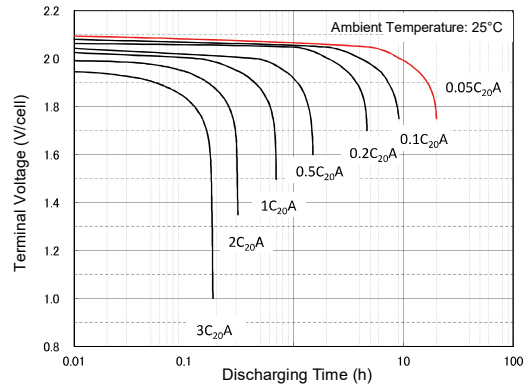
PXL Series Characteristics

*All values of these graphs are for reference only (not guaranteed value).

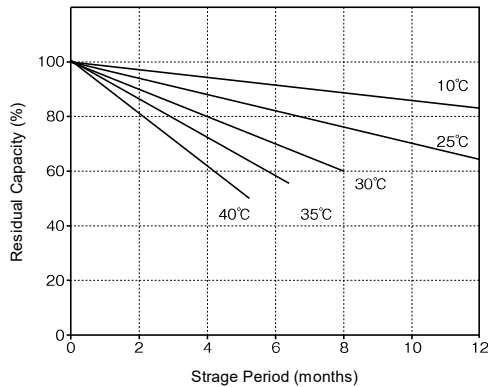
Constant Voltage Charging



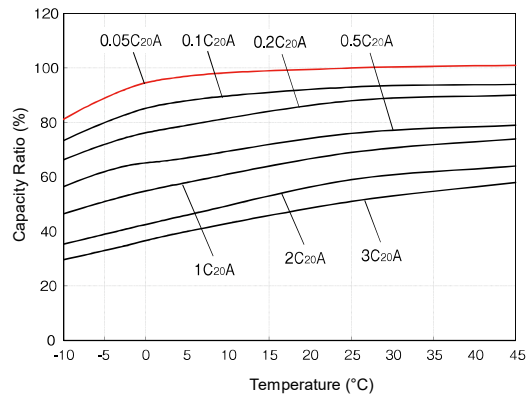
Discharging Curves



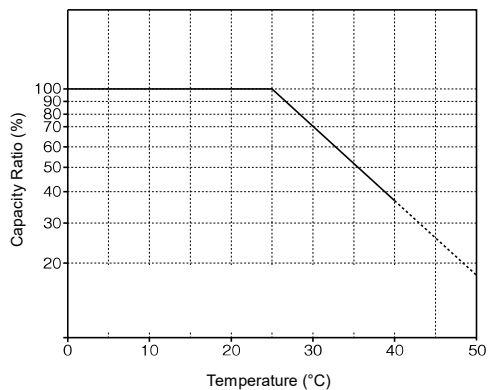
Capacity Retention



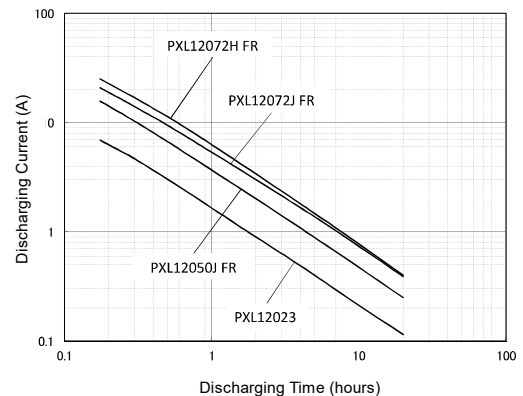
Capacity at Various Temperature



Expected Life at Various Temperature



Selection Chart



*Plotting a point of discharging current (multiplied by aging factor) against time of discharge. The nearest and larger capacity line from the point is the suitable battery.

Ex) Discharging current 0.8A, time 3h: PXL12050JFR

Very Long Life Type

PWL



PWL Series

*The actual appearance may differ from these images.

Charging Method:
Constant Voltage

Float Charging Voltage:
2.230V/cell

Temperature Compensation:
-3mV/°C/cell

Initial Max. Charging Current:
0.25C₂₀A

Operating Temperature:
-15°C to +40°C

Expected Life:
13 years

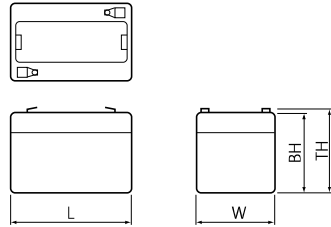
Base Temperature for Compensation:
+25°C

Recommended Operating Temperature:
+5°C to +30°C

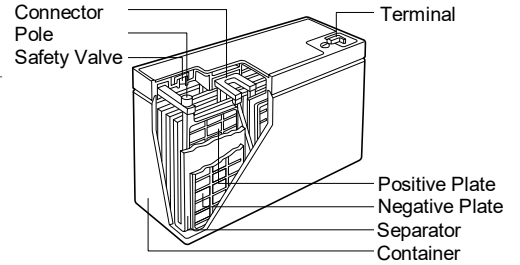
Final Discharging Voltage (F.V.)

Series	Discharging Current	F.V.
PWL	less than 0.01C ₂₀ A	1.90V/cell
	0.01C ₂₀ A ~ 0.2C ₂₀ A	1.75V/cell
	0.2C ₂₀ A ~ 0.5C ₂₀ A	1.70V/cell
	0.5C ₂₀ A ~ 1.0C ₂₀ A	1.60V/cell
	1.0C ₂₀ A ~ 2.0C ₂₀ A	1.50V/cell
	2.0C ₂₀ A ~ 3.0C ₂₀ A	1.35V/cell
	more than 3.0C ₂₀ A	1.00V/cell

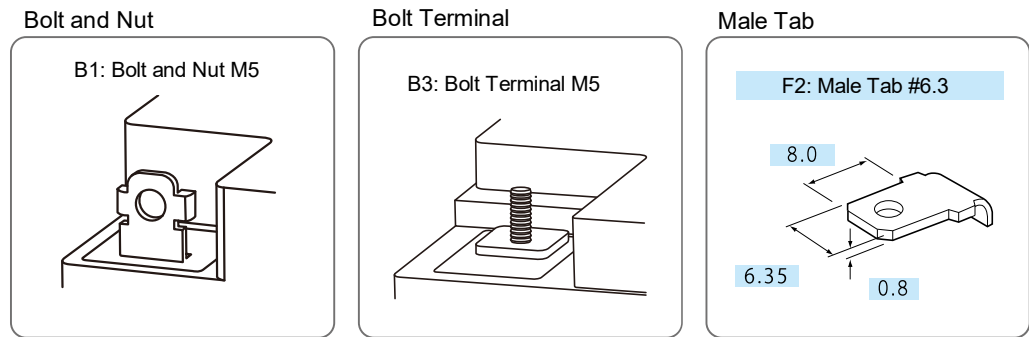
Outline



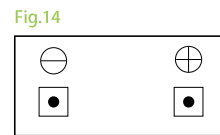
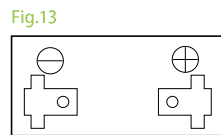
Structure



Terminal Type



Terminal Position



Specification

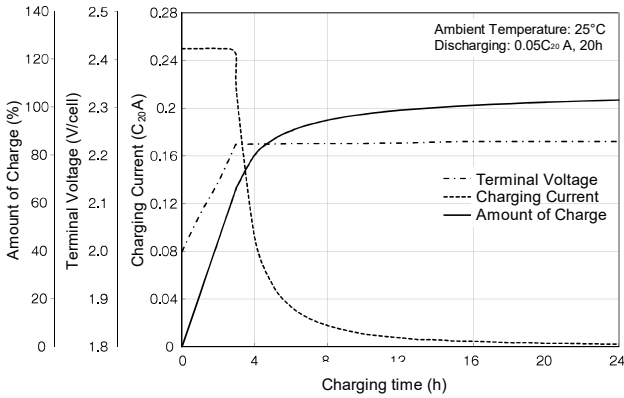
Series	Type	Nominal Voltage [V]	Nominal Capacity [Ah] (20HR)	Outline Dimension [mm]				Weight [kg] (approx.)	Terminal Type	Terminal Position (Fig. No.)	Flame Retardancy
				Total Height (TH)	Box Height (BH)	Width (W)	Length (L)				
	PWL12V15		15.0	167	167	76	181	6.1	F2	13	FR
PWL	PWL12V24	12	24.0	175	175	125	166	9.1	B1	8	FR
	PWL12V38		38.0	174	174	163	197	14.0	B3	14	FR

*1 Expected life is the number of years estimated by converting the endurance period obtained from the high-temperature float accelerated life test into the period of actual use at 25°C. The expected life is the estimated value applied for not all conditions but under certain condition.

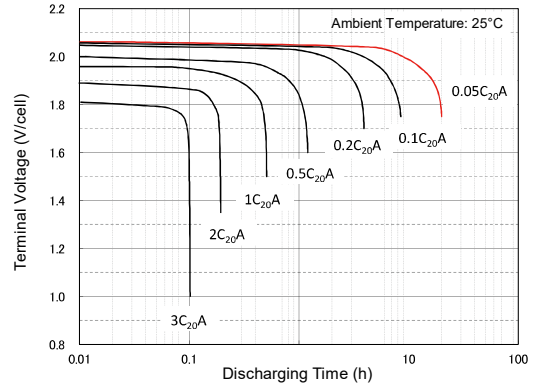
PWL Series Characteristics

*All values of these graphs are for reference only (not guaranteed value).

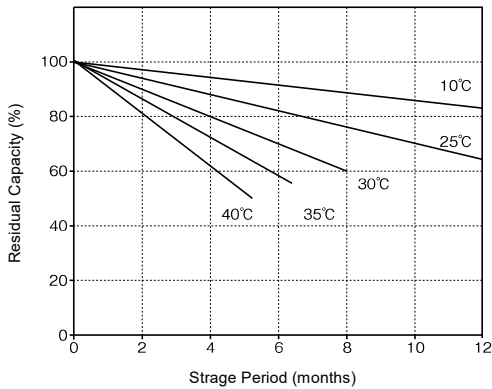
Constant Voltage Charging



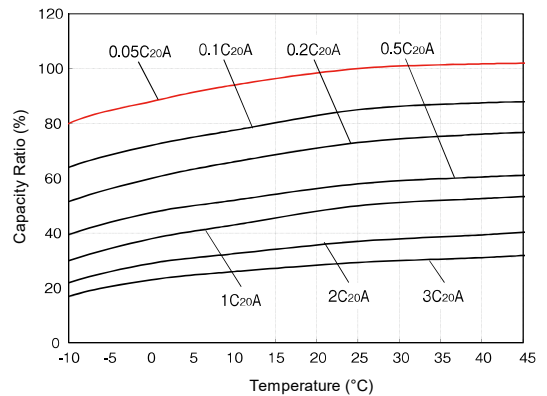
Discharging Curves



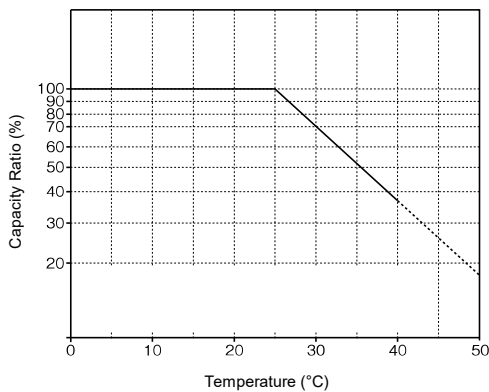
Capacity Retention



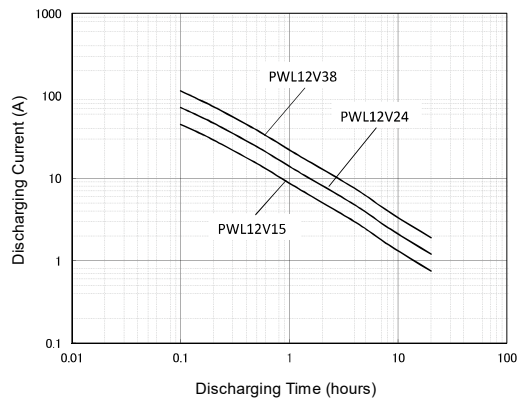
Capacity at Various Temperature



Expected Life at Various Temperature



Selection Chart

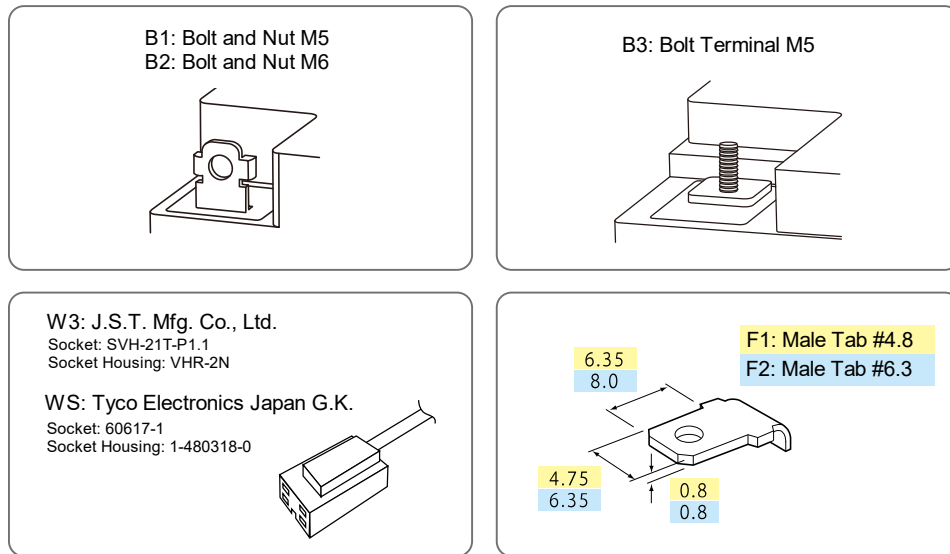


*Plotting a point of discharging current (multiplied by aging factor) against time of discharge. The nearest and larger capacity line from the point is the suitable battery.

Ex) Discharging current 8A, time 1h: PWL12V24

Terminal Type and Position

Terminal Type



Terminal Position

