

World NO.1 to The Only One

VITZRO CELL

Since 1987

The Core of Smart Weaponry System



THERMAL RESERVE BATTERY



ELECTRIC IGNITER BASED

THERMAL RESERVE BATTERY



APPLICATIONS

- \\ Guided Missiles
- \\ Projectiles
- \\ Rockets
- \\ Bombs
- \\ Mines
- \\ Decoys
- \\ Jammers
- \\ Torpedoes
- \\ Space Exploration Systems
- \\ Emergency Escape Systems

ADVANTAGES

- \\ High energy density
- \\ High level of reliability
- \\ **Wide operating temperature range(-54°C to +75°C)**
- \\ **More than 15 years of shelf life**
- \\ Customized design
- \\ No self-discharge
- \\ Wide range of voltage
- \\ Fast activation time

ELECTRIC IGNITER BASED

THERMAL RESERVE BATTERY

THERMAL BATTERY LINE-UP

Model	Size[mm]	Voltage [V]	Current [A]	Activation Time [s]	Functional Life Time [s]	Weight [g]
VT-2010	Φ63.5 X h70.0	26 ~ 34	12A (base) / 20A (peak)	≤0.7	≥100	≤700
VT-PSAO	Φ57.8 X h44.8	18.5 ~ 24	10A (base) / 11A (peak)	≤0.4	≥19	≤340
VT-PSBO	Φ57.0 X h70.0	18.5 ~ 24	6A (base) / 11A (peak)	≤0.5	≥45	≤460
VT-MSIO	Φ63.5 X h74.5	26 ~ 34	2A (base) / 20A (peak)	≤0.6	≥100	≤760
VT-MSMO	Φ63.5 X h125.0	26 ~ 34	25A (base) / 30A (peak)	≤0.7	≥100	≤1,200
VT-MSSO	Φ63.5 X h125.0	50 ~ 64	10A (base) / 20A (peak)	≤0.7	≥100	≤1,230
VT-MSAO	Φ63.5 X h180.0	110 ~ 150	10A (base)	≤0.75	≥100	≤1,560
VT-SASO	Φ38.1 X h160.0	50 ~ 64	15A 0.1s / 20A 0.1s Pulse	≤0.8	≥40	≤550
VT-SAMO	Φ50.0 X h105.0	24 ~ 34	22A 0.005s / 30A 0.005s Pulse	≤0.8	≥40	≤660
VT-SAAO	Φ38.1 X h160.0	50 ~ 64	15A 0.1s / 20A 0.1s pulse	≤0.8	≥40	≤610
VT-FZBO	Φ22.3 X h44.0	24 ~ 34	100mA (base) / 500mA (peak)	≤0.6	≥25	≤60
VT-2031	Φ63.5 X 128.0	25 ~ 34	50A (base)	≤1.0	≥40	≤1,230
VT-2050	Φ38.1 X h95.0	26 ~ 36	5.5A / 7.5A 1Hz	≤0.6	≥30	≤360
VT-LGR01	Φ44.0 X h52.0	24 ~ 32	5 ~ 9A	≤0.4	≥35	≤230
VT-FBAO	Φ48.0 X h68.0	22 ~ 34	9A 0.98s / 11A 0.02s pulse	≤1.0	≥100	≤450
VT-FBA1	Φ48.0 X h68.0	22 ~ 32	9A 0.98s / 11A 0.02s pulse	≤1.0	≥100	≤450
VT-FBBO	Φ110.0 X h130.5	22 ~ 34	12.7A (base) / 26.5A(peak)	≤2.8	≥700	≤4,000

ELECTRIC IGNITER BASED

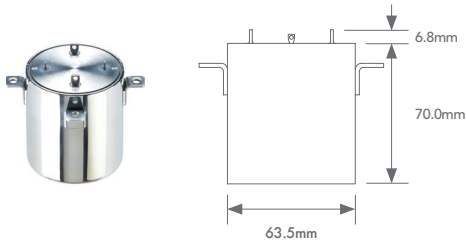
THERMAL RESERVE BATTERY

Vibration	Shock	Acceleration [G]	Operational Temperature[°C]	Activation Mechanism
20 ~ 2,000Hz : 0.05g ² /Hz	Sawtooth wave / 200g, 6ms	X axis 60g / Z axis 30g	-42 ~ +71	Electric Igniter
0.06 inch-double amplitude 10 ~ 70Hz, 15g peak 71 ~ 2,000Hz or 4hours axis	3 times sawtooth / Half-sine 350g peak, 3msec	65g	-40 ~ +60	Electric Igniter
5-2000Hz 36min, 0.2inch 5-14Hz, 2g, 14-33Hz 0.036inch, 33-55Hz, 5g, 52-2000Hz	40g, 11ms	N/A	-40 ~ +71	Shock Igniter
9.08grms, 0.05g ² /Hz @ 20~2,000Hz	200g, 5ms	Axial 30g / Lateral 60g	-32 ~ +75	Electric Igniter
9.4 grms / 20 ~ 2,000 Hz	200g, 5ms	Axial 30g / Lateral 60g	-32 ~ +75	Electric Igniter
9.4 grms / 20 ~ 2,000 Hz	200g, 5ms	Axial 30g / Lateral 60g	-32 ~ +75	Electric Igniter
9.4 grms / 20 ~ 2,000 Hz	200g, 5ms	Axial 30g / Lateral 60g	-32 ~ +75	Electric Igniter
9.08grms, 0.05g ² /Hz @ 20~2,000Hz	200g, 5ms	38.5g Lateral 33.0g Longitudinal	-32 ~ +71	Electric Igniter
9.08grms, 0.05g ² /Hz @ 20~2,000Hz	200g, 5ms	38.5g Lateral 33.0g Longitudinal	-32 ~ +71	Electric Igniter
9.08grms, 0.05g ² /Hz @ 20~2,000Hz	200g, 5ms	38.5g Lateral 33.0g Longitudinal	-32 ~ +71	Electric Igniter
8.23 grms / 20 ~ 2,000Hz	40g, 11ms	N/A	-40 ~ +60	Electric Igniter
0.01 ~ 0.025 g ² /Hz	20g, 11ms	X axis 9g / Z axis 16.5g	-32 ~ +63	Electric Igniter
10 ~ 2,000Hz : 0.05g ² /Hz	Sawtooth wave /40g, 11ms	+X axis 16.5g / -X axis 5.0g / +Z axis 13.2g	-32 ~ +63	Electric Igniter
3.85grms / 5 ~ 500Hz	50g, 10ms	80g	-35 ~ +60	Electric Igniter
15 ~ 2,000Hz : 0.01g ² /Hz	20g, 11ms	X axis 15g / Y axis 11.2g / +Z 18g / -Z 12g, 9.8g	-54 ~ +55	Electric Igniter
15 ~ 2,000Hz : 0.01g ² /Hz	20g, 11ms	X axis 15g / Y axis 11.2g / +Z 18g / -Z 12g, 9.8g	-54 ~ +55	Electric Igniter
113.3 ~ 453.3Hz : 0.311g ² /Hz	20g, 11ms	-X axis 10g	-66 ~ +51	Electric Igniter

ELECTRIC IGNITER BASED

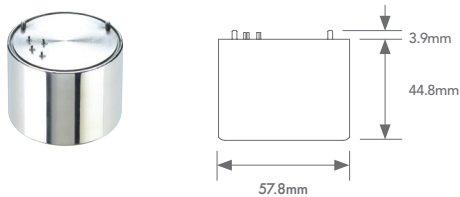
THERMAL RESERVE BATTERY

VT-2010



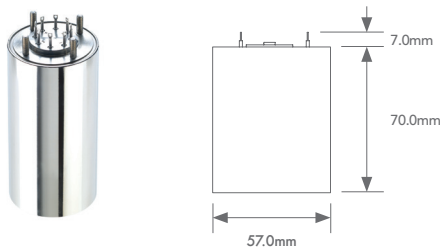
Dimension (mm)	Φ63.5 X h70.0
Open Voltage (V)	26 ~ 34
Current (A)	12A (base) / 20A (peak)
Activation Time (s)	≤0.7
Functional Time, Capacity	≥100
Weight (g)	≤700
Vibration	20 ~ 2,000Hz : 0.05g ² /Hz
Shock	Sawtooth wave / 200g, 6ms
Acceleration (G)	X axis 60g / Z axis 30g
Operating Temperature(°C)	-40 ~ +71
Activation Mechanism	Electric Igniter

VT-PSA0



Dimension (mm)	Φ57.8 X h44.8
Open Voltage (V)	18.5 ~ 24
Current (A)	10A (base) / 11A (peak)
Activation Time (s)	≤0.4
Functional Time, Capacity	≥19
Weight (g)	≤340
Vibration	0.06 inch-double amplitude 10 ~ 70Hz, 15g peak 71 ~ 2,000Hz or 4hours axis
Shock	3 times sawtooth / Half-sin 350g peak, 3msec
Acceleration (G)	65
Operating Temperature(°C)	-40 ~ +60
Activation Mechanism	Electric Igniter

VT-PSB0

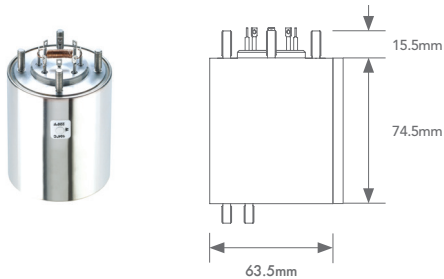


Dimension (mm)	Φ57.0 X h70.0
Open Voltage (V)	18.5 ~ 24
Current (A)	6A (base) / 11A (peak)
Activation Time (s)	≤0.5
Functional Time, Capacity	≥45
Weight (g)	≤460
Vibration	5-2000Hz 36min, 0.2inch 5-14Hz, 2g, 14-33Hz 0.036inch, 33-55Hz, 5g, 52-2000Hz
Shock	40g, 11ms
Acceleration (G)	N/A
Operating Temperature(°C)	-40 ~ +71
Activation Mechanism	Shock Igniter

ELECTRIC IGNITER BASED

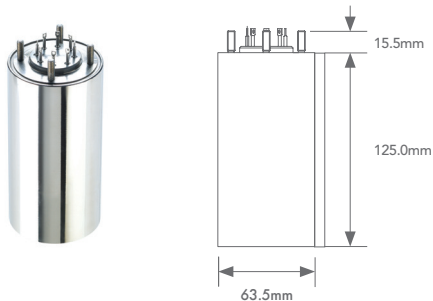
THERMAL RESERVE BATTERY

VT-MS10



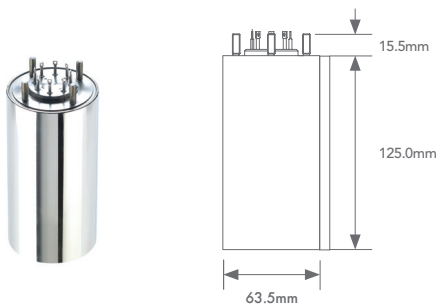
Dimension (mm)	Φ63.5 X h74.5
Open Voltage (V)	26 ~ 34
Current (A)	2A (base) / 20A (peak)
Activation Time (s)	≤0.6
Functional Time, Capacity	≥100
Weight (g)	≤760
Vibration	9.08 grms 0.05 g2/Hz @20~2,000Hz
Shock	200g, 5ms
Acceleration (G)	Axial 30g / Lateral 60g
Operating Temperature(°C)	-32 ~ +75
Activation Mechanism	Electric Igniter

VT-MSM0



Dimension (mm)	Φ63.5 X h125.0
Open Voltage (V)	26 ~ 34
Current (A)	25A (base) / 30A (peak)
Activation Time (s)	≤0.7
Functional Time, Capacity	≥100
Weight (g)	≤1,200
Vibration	9.4 grms / 20 ~ 2,000 Hz
Shock	200g, 5ms
Acceleration (G)	Axial 30g / Lateral 60g
Operating Temperature(°C)	-32 ~ +75
Activation Mechanism	Electric Igniter

VT-MSS0

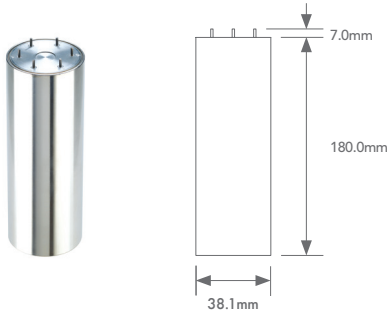


Dimension (mm)	Φ63.5 X h125.0
Open Voltage (V)	50 ~ 64
Current (A)	10A (base) / 20A (peak)
Activation Time (s)	≤0.7
Functional Time, Capacity	≥100
Weight (g)	≤1,230
Vibration	9.4 grms / 20 ~ 2,000 Hz
Shock	200g, 5ms
Acceleration (G)	Axial 30g / Lateral 60g
Operating Temperature(°C)	-32 ~ +75
Activation Mechanism	Electric Igniter

ELECTRIC IGNITER BASED

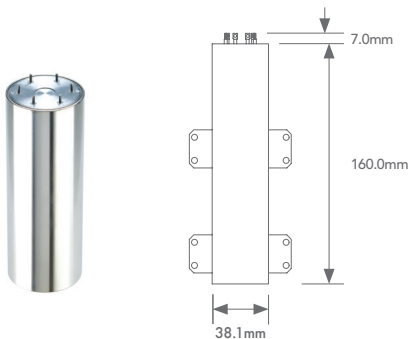
THERMAL RESERVE BATTERY

VT-MSA0



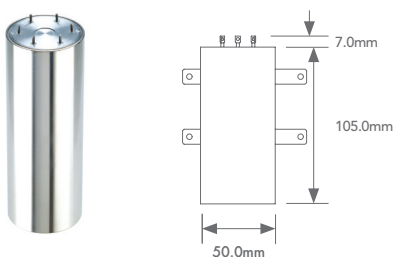
Dimension (mm)	Φ63.5 X h180.0
Open Voltage (V)	110 ~ 150
Current (A)	10A (base)
Activation Time (s)	≤0.75
Functional Time, Capacity	≥100
Weight (g)	≤1,560
Vibration	9.4 grms / 20 ~ 2,000 Hz
Shock	200g, 5ms
Acceleration (G)	Axial 30g / Lateral 60g
Operating Temperature(°C)	-32 ~ +75
Activation Mechanism	Electric Igniter

VT-SAS0



Dimension (mm)	Φ38.1 X h160.0
Open Voltage (V)	50 ~ 64
Current (A)	15A 0.1s / 20A 0.1s
Activation Time (s)	≤0.8
Functional Time, Capacity	≥40
Weight (g)	≤550
Vibration	9.08grms, 0.05g2/Hz @ 20-2,000Hz
Shock	200g, 5ms
Acceleration (G)	38.5g Lateral 33.0g Longitudinal
Operating Temperature(°C)	-32 ~ +71
Activation Mechanism	Electric Igniter

VT-SAM0

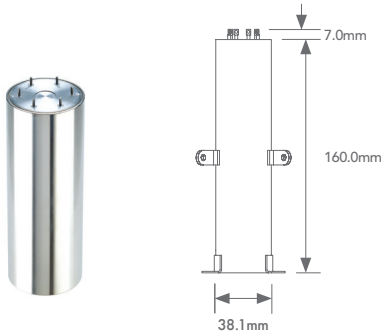


Dimension (mm)	Φ50.0 X h105.0
Open Voltage (V)	24 ~ 34
Current (A)	22A 0.005s / 30A 0.005s Pulse
Activation Time (s)	≤0.8
Functional Time, Capacity	≥40
Weight (g)	≤660
Vibration	9.08grms, 0.05g2/Hz @ 20-2,000Hz
Shock	200g, 5ms
Acceleration (G)	38.5g Lateral 33.0g Longitudinal
Operating Temperature(°C)	-32 ~ +71
Activation Mechanism	Electric Igniter

ELECTRIC IGNITER BASED

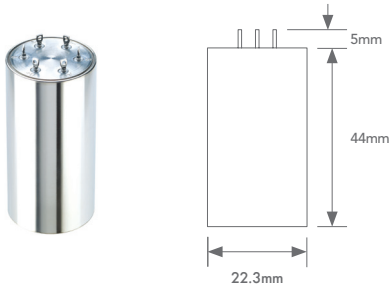
THERMAL RESERVE BATTERY

VT-SAA0



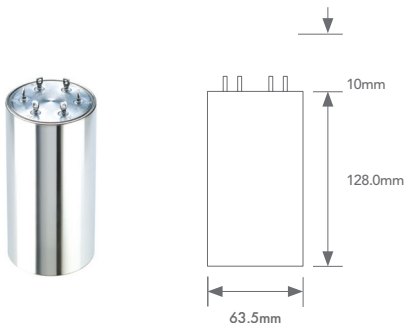
Dimension (mm)	Φ38.1 X h160.0
Open Voltage (V)	50 ~ 64
Current (A)	15A 0.1s / 20A 0.1s pulse
Activation Time (s)	≤0.8
Functional Time, Capacity	≥40
Weight (g)	≤610
Vibration	9.08 grms, 0.05g ² /Hz @ 20-2,000Hz
Shock	200g, 5ms
Acceleration (G)	38.5g Lateral 33.0g Longitudinal
Operating Temperature(°C)	-32 ~ +71
Activation Mechanism	Electric Igniter

VT-FZB0



Dimension (mm)	Φ22.3 X h44.0
Open Voltage (V)	24 ~ 34
Current (A)	100mA (base) / 500mA (peak)
Activation Time (s)	≤0.6
Functional Time, Capacity	≥25
Weight (g)	≤60
Vibration	8.23 grms / 20 ~ 2,000Hz
Shock	40g, 11ms
Acceleration (G)	N/A
Operating Temperature(°C)	-40 ~ +60
Activation Mechanism	Electric Igniter

VT-2031

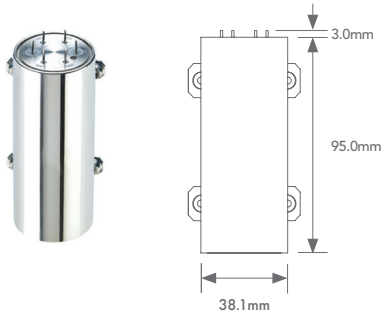


Dimension (mm)	Φ63.5 X 128.0
Open Voltage (V)	25 ~ 34
Current (A)	50A (base)
Activation Time (s)	≤1.0
Functional Time, Capacity	≥40
Weight (g)	≤1,230
Vibration	0.01 ~ 0.025 g ² /Hz
Shock	20g, 11ms
Acceleration (G)	X axis 9g / Z axis 16.5g
Operating Temperature(°C)	-32 ~ +63
Activation Mechanism	Electric Igniter

ELECTRIC IGNITER BASED

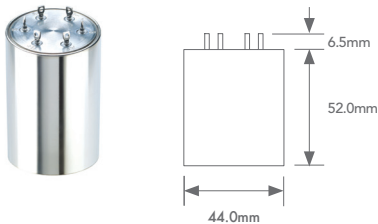
THERMAL RESERVE BATTERY

VT-2050



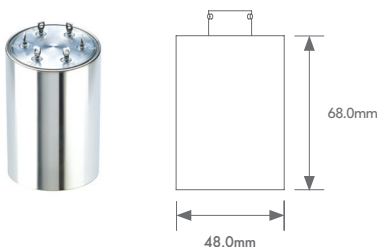
Dimension (mm)	Φ38.1 X h95.0
Open Voltage (V)	26 ~ 36
Current (A)	5.5A / 7.5A 1Hz
Activation Time (s)	≤0.6
Functional Time, Capacity	≥30
Weight (g)	≤360
Vibration	10 ~ 2,000Hz : 0.05g ² /Hz
Shock	Sawtooth wave / 40g, 11ms
Acceleration (G)	+X axis 16.5g / -X axis 5.0g / +Z axis 13.2g
Operating Temperature(°C)	-32 ~ +63
Activation Mechanism	Electric Igniter

VT-LGR01



Dimension (mm)	Φ44.0 X h52.0
Open Voltage (V)	24 ~ 32
Current (A)	5 ~ 9A
Activation Time (s)	≤0.4
Functional Time, Capacity	≥35
Weight (g)	≤230
Vibration	2.18grms / 5 ~ 500Hz
Shock	50g, 10ms
Acceleration (G)	80g
Operating Temperature(°C)	-35 ~ +60
Activation Mechanism	Electric Igniter

VT-FBA0

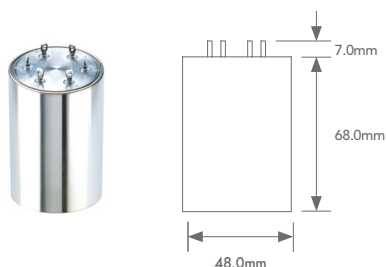


Dimension (mm)	Φ48.0 X h68.0
Open Voltage (V)	22 ~ 34
Current (A)	9A 0.98s / 11A 0.02s pulse
Activation Time (s)	≤1.0
Functional Time, Capacity	≥100
Weight (g)	≤350
Vibration	15 ~ 2,000Hz : 0.01g ² /Hz
Shock	20g, 11ms
Acceleration (G)	X axis 15g / Y axis 11.2g / +Z 18g / -Z 12g, 9.8g
Operating Temperature(°C)	-54 ~ +55
Activation Mechanism	Electric Igniter

ELECTRIC IGNITER BASED

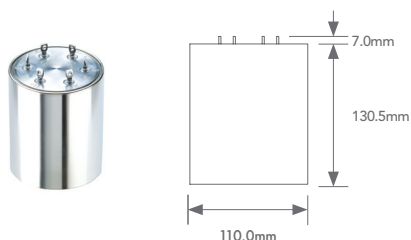
THERMAL RESERVE BATTERY

VT-FBA1



Dimension (mm)	Φ48.0 X h68.0
Open Voltage (V)	22 ~ 32
Current (A)	9A 0.98s / 11A 0.02s pulse
Activation Time (s)	≤1.0
Functional Time, Capacity	≥100
Weight (g)	≤450
Vibration	15 ~ 2,000Hz : 0.01g ² /Hz
Shock	20g, 11ms
Acceleration (G)	X axis 15g / Y axis 11.2g / +Z 18g / -Z 12g, 9.8g
Operating Temperature(°C)	-54 ~ +55
Activation Mechanism	Electric Igniter

VT-FBBO

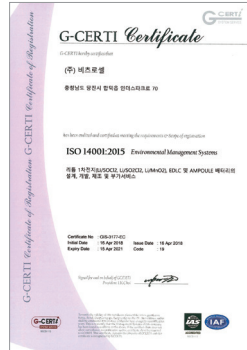


Dimension (mm)	Φ110.0 X h130.5
Open Voltage (V)	22 ~ 34
Current (A)	12.7A (base)
Activation Time (s)	≤2.8
Functional Time, Capacity	≥700
Weight (g)	≤4000
Vibration	113.3 ~ 453.3Hz : 0.311g ² /Hz
Shock	20g, 11ms
Acceleration (G)	-X axis 10g
Operating Temperature(°C)	-66 ~ +51
Activation Mechanism	Electric Igniter

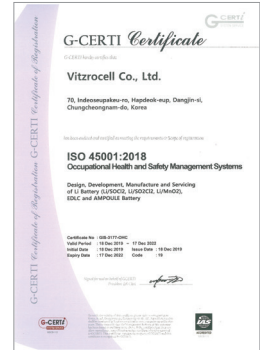
CERTIFICATES



ISO 9001



ISO 14001



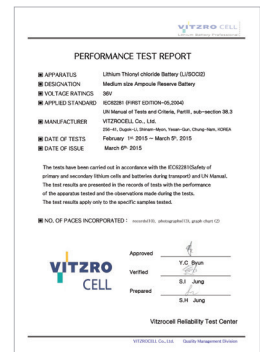
ISO 45001



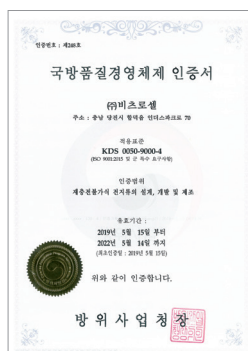
ROHS(Intertek)



UN Transportation Certificate



UN Performance Test Report



DQMS(Defense Quality Management System)

THE OPTIMUM POWER SOLUTIONS FOR DEFENSE APPLICATIONS

LITHIUM PRIMARY SOLUTIONS



Li-SOCl₂
Li-MnO₂



EDLC
(Electric Double Layer Capacitor)

LITHIUM RECHARGEABLE SOLUTIONS



VLB(Rechargeable Battery)
VHC(Hybrid Capacitor)

APPLICATIONS



MILITARY
OPTICAL DEVICE



MILITARY
COMMUNICATION
DEVICE



GAS MASK



HAND
GRENADE



DRONE



UAV

VITZRO CELL

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