

HT Series 4 Terminals Snap-in Type 105°C



Features

Applications

- ◆ Professional power supplies
- ◆ Frequency converters
- ◆ Uninterruptible power supplies
- ◆ Used for air conditioner, general-purpose inverter

Features

- ◆ High reliability
- ◆ Long useful life
- ◆ High ripple current capability
- ◆ Aluminum case designed explosion-proof vent
- ◆ RoHS-compatible

Construction

- ◆ Charge-discharge proof, polar
- ◆ Aluminum case with insulating sleeve
- ◆ Aluminum case designed explosion-proof vent
- ◆ Snap-in solder pins to hold component in place on PC-board

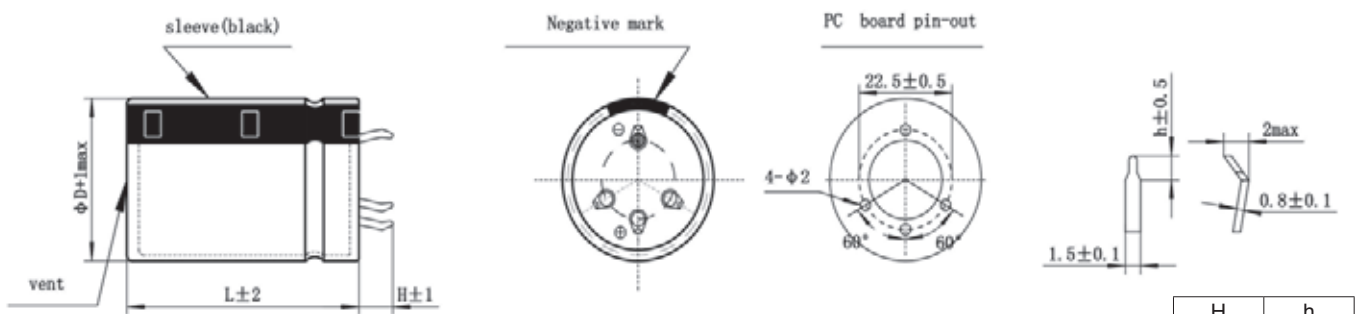
Specifications

Item	Performance Characteristics			
Operating Temperature Range	-40 to +105°C	-25 to +105°C		
Rated voltage V_R	160 to 350 V DC	400 to 450 V DC		
Surge voltage V_S	$V_R \leq 315V$ 1.15 V_R $V_R > 315V$ 1.10 V_R			
Rated capacitance C_R	180 to 2700 μF	82 to 1800 μF		
Capacitance tolerance	$\pm 20\%$ (120Hz, +20°C)			
Leakage Current I_{leak} (+20°C, max.)	$I \leq 3 \sqrt{CV}$ (μA) After 5 minutes with rated working voltage applied			
Dissipation Factor ($\tan \delta$, at 20°C, 120Hz)	Less than the value under table (%)			
	W.V.(V)	160~420 450		
	D.F.(%) max	15 20		
Self-inductance ESL	approx. 20 nH			
Useful life 105°C; $V_R, I_{AC,R}$	>5000 h	Requirements:		
		$\Delta C/C \leq \pm 20\%$ of initial value $\tan \delta \leq 2$ times initial specified limit $I_{leak} \leq$ initial specified limit		
Voltage Endurance test 105°C; V_R	2000 h	Post test requirements:		
		$\Delta C/C \leq \pm 10\%$ of initial value $\tan \delta \leq 1.3$ times initial specified limit $I_{leak} \leq$ initial specified limit		
Shelf Life 105°C	1000 h	Post test requirements:		
		$\Delta C/C \leq \pm 10\%$ of initial value $\tan \delta \leq 1.3$ times initial specified limit $I_{leak} \leq$ initial specified limit		
Vibration Resistance test	To IEC 60068-2-6, test Fc:			
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3x2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.			
Characteristics at low temperature	Max. impedance ratio at 120 Hz			
	$V_R(V)$	160-250	300-350	400-500 V
	$Z_{25^\circ C} / Z_{20^\circ C}$	4	8	8
	$Z_{-40^\circ C} / Z_{20^\circ C}$	8	12	-
Sectional specification	IEC 60384-4 and JIS-C-5101			

Multiplier for Ripple Current vs. Frequency

$V_R(V)/$ Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
$160 \leq V_R \leq 250$	0.81	1	1.17	1.32	1.45	1.5
$315 \leq V_R \leq 450$	0.77	1	1.16	1.30	1.41	1.43

Dimensional drawings



Standard snap-in terminals: length (6.0 ± 1) mm
 Also available with length of (4.0 ± 1) mm

H	h
6	2.5
4	1.5

Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	< 55	/	600	6	100
22	≥ 55	/	400	4	100
25	< 65	/	500	5	100
25	≥ 65	/	400	4	100
30	≤ 36	< 6(L=35、36)	400	8	50
30	$35 \leq L \leq 65$	≥ 6 (L=35、36)	300	6	50
30	> 65	/	200	4	50
35	≤ 25	/	400	8	50
35	$25 < L < 45$	/	300	6	50
35	$45 \leq L \leq 85$	/	200	4	50
35	> 85	/	100	2	50
40	35	< 6	200	5	40
40	35	≥ 6	160	4	40
40	$40 \leq L \leq 45$	/	160	4	40
40	$45 < L \leq 75$	/	120	3	40
40	> 75	/	80	2	40
45	$40 \leq L \leq 65$	/	140	4	35
45	$65 < L \leq 100$	/	70	2	35

Packing of snap-in

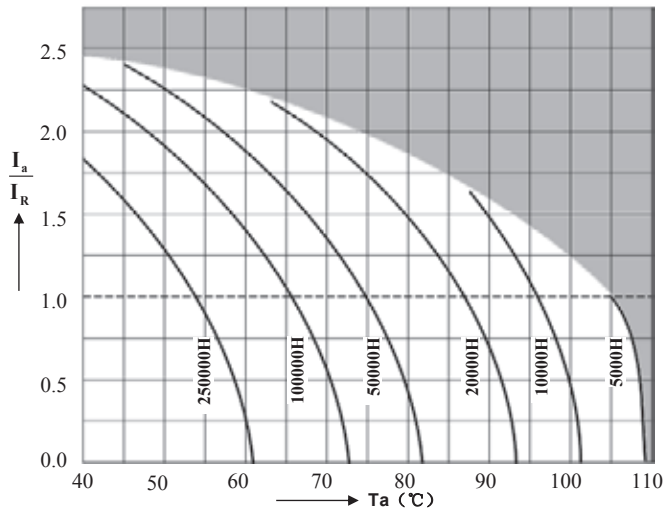


Case Size

VV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (Arms/105°C /120Hz)	Typ. ESR 20°C 120Hz (mΩ)	MAX ESR 20°C 120Hz (mΩ)
160	330	30x25	1.39	310	600
160	390	30x25	1.47	260	510
160	470	30x30	1.64	220	420
160	560	30x30	1.76	180	360
160	680	30x35	1.98	150	290
160	680	35x30	1.98	150	290
160	820	30x40	2.36	120	240
160	820	35x30	2.36	120	240
160	1000	30x55	2.80	100	200
160	1000	35x35	2.60	100	200
160	1200	30x55	3.23	87	170
200	220	30x25	1.15	460	900
200	270	30x25	1.22	380	740
200	330	30x30	1.53	310	600
200	390	30x30	1.57	260	510
200	390	35x25	1.57	260	510
200	470	30x35	1.74	220	420
200	470	35x30	1.74	220	420
200	560	30x40	1.89	180	360
200	560	35x30	1.89	180	360
200	680	30x45	2.30	150	290
200	680	35x35	2.30	150	290
200	820	30x50	2.74	120	240
200	820	35x40	2.74	120	240
250	180	30x25	0.98	570	1110
250	220	30x30	1.17	460	900
250	270	30x30	1.32	380	740
250	330	30x35	1.66	310	600
250	330	35x30	1.66	310	600
250	390	30x40	1.77	260	510
250	390	35x30	1.77	260	510
250	470	30x40	1.88	220	420
250	470	35x35	1.88	220	420
250	560	30x50	2.06	180	360
250	560	35x40	2.06	180	360
350	390	35x40	1.97	260	510
350	470	35x45	2.22	220	420
350	560	35x45	2.46	180	360
350	560	40x40	2.51	180	360
350	680	35x55	2.84	150	290
350	680	40x45	2.84	150	290
350	820	35x65	3.26	120	240
350	820	40x50	3.20	120	240
350	820	45x40	3.16	120	240
350	1000	35x75	3.76	100	200
350	1000	40x60	3.68	100	200
350	1000	45x45	3.57	100	200
350	1200	35x85	4.31	87	170
350	1200	40x65	4.15	87	170
350	1200	45x50	4.00	87	170
350	1500	40x80	4.96	67	130
350	1500	45x65	4.80	67	130
350	1800	40x95	5.72	56	110
350	1800	45x75	5.45	56	110
350	2200	45x90	6.32	46	90
350	2700	45x100	7.30	38	74

VV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (Arms/105°C /120Hz)	Typ. ESR 20°C 120Hz (mΩ)	MAX ESR 20°C 120Hz (mΩ)
400	82	30x25	0.73	1250	2430
400	100	30x30	0.82	1020	1990
400	120	30x35	0.87	850	1660
400	120	35x25	0.87	850	1660
400	150	30x40	1.00	680	1330
400	150	35x30	1.00	680	1330
400	180	30x45	1.16	570	1110
400	180	35x35	1.14	570	1110
400	220	30x50	1.28	460	900
400	220	35x40	1.28	460	900
400	330	35x40	1.83	310	600
400	390	35x45	2.05	260	510
400	470	35x45	2.32	220	420
400	470	40x40	2.33	220	420
400	560	35x55	2.60	180	360
400	560	40x45	2.61	180	360
400	560	45x40	2.60	180	360
400	680	35x65	2.99	150	290
400	680	40x50	2.95	150	290
400	680	45x40	2.93	150	290
400	820	35x75	3.43	120	240
400	820	40x60	3.37	120	240
400	820	45x45	3.30	120	240
400	1000	35x85	3.98	100	200
400	1000	40x65	3.84	100	200
400	1000	45x50	3.73	100	200
400	1200	35x100	4.59	87	170
400	1200	40x75	4.38	87	170
400	1200	45x60	4.26	87	170
400	1500	40x95	5.30	67	130
400	1500	45x70	5.05	67	130
400	1800	45x90	5.82	56	110
450	270	35x40	1.62	500	980
450	330	35x45	1.85	410	800
450	390	35x50	2.07	350	680
450	390	40x40	2.08	350	680
450	470	35x55	2.35	290	560
450	470	40x45	2.35	290	560
450	470	45x40	2.36	290	560
450	560	35x65	2.66	240	470
450	560	40x50	2.64	240	470
450	560	45x40	2.63	240	470
450	680	35x75	3.07	200	390
450	680	40x60	3.02	200	390
450	680	45x45	2.97	200	390
450	820	35x85	3.54	160	320
450	820	40x65	3.43	160	320
450	820	45x50	3.30	160	320
450	1000	35x100	4.13	140	270
450	1000	40x70	3.75	140	270
450	1000	40x80	3.98	140	270
450	1000	45x60	3.86	140	270
450	1200	40x95	4.66	110	220
450	1200	45x75	4.50	110	220
450	1500	45x90	5.30	92	180

Useful life



depending on ambient temperature T_a versus under ripple current operating conditions