

In the course of this application note, it shall be discussed how the capacitor can be utilized as a simple energy storage device and show how charging as well as operating times can be calculated.

What Are Supercapacitors? Characteristics Construction and Properties of Supercapacitors Applications For Supercapacitors Supercapacitors are electronic devices which are used to store extremely large amounts of electrical charge. They are also known as double-layer capacitors or ultracapacitors. Instead of using a conventional dielectric, supercapacitors use two mechanisms to store electrical energy: double-layer capacitance and pseudocapacitance. Double layer capa... See more on eepower Author: Robert Keim.

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.iacf_head{display:flex;align-items:center;gap:var(--smtc-gap-between-content-small);text-decoration-color:var(--smtc-foreground-content-neutral-primary);box-sizing:border-box;margin-bottom:var(--smtc-gap-between-content-x-small)}.iacfm
.iacf_head span{flex:1 1 0;white-space:nowrap;text-overflow:ellipsis;overflow:hidden;color:var(--smtc-foreground-content-neutral-primary);font:var(--bing-smtc-text-global-body3-strong)}.iacfm
div{display:flex;height:22px;width:22px;justify-content:center;align-items:center;transition:background 300ms ease-out;margin-right:-3px;border-radius:var(--mai-smtc-corner-list-card-default);overflow:hidden}.iacfm
.iacf_head .iacf_chv{color:var(--smtc-foreground-content-neutral-primary)}[dir="rtl"] .iacfm .iacf_head
svg{transform:scaleX(-1)}.rel_ent_w{margin:4px 0 9px}.rel_ent_w
.rel_ent_w:focus-visible{outline-offset:-6px}.rel_ent_w.rel_ent_crs{margin:6px 0 16px}.b_top
.rel_ent_w{margin-top:-4px}.b_top .rel_ent_w.rel_ent_crs{margin-top:0}.b_mm_swipable
.rel_ent_w{margin:4px 0 20px}.b_rich .rel_ent_w{margin:-3px -16px 8px}.rel_ent_w.rel_ent_scr:not(.rel_ent_crs){height:50px;overflow:hidden}.rel_ent_c{white-space:nowrap;overflow:hidden;padding-left:1px;height:50px}.aqptmt:not(.rel_ent_crs) .rel_ent_c{display:flex}.rel_ent_wp
.rel_ent_c{white-space:initial}.rel_ent_scr
.rel_ent_c{overflow-y:hidden;-webkit-overflow-scrolling:touch;overflow-x:auto}.rel_ent_scr:not(.rel_ent_crs)
.rel_ent_c{padding-bottom:12px}.b_mm_swipable
.rel_ent_c{padding-left:10px;margin-top:-2px;margin-bottom:4px}.b_rich
.rel_ent_c{padding-left:15px}.rel_ent_w.rel_ent_crs .slide,.rel_ent_w.rel_ent_crs
.slide:hover{width:auto;height:42px;border-radius:20px!important;box-shadow:none!important;overflow:visible}a.rel_ent{display:inline-block;padding:0 16px 0 12px;margin:4px 8px 4px 0;border-radius:20px;border:1px solid #ddd;text-decoration:none;overflow:hidden;height:40px;max-width:80vw}:not(#lgVidAnsContainer)>.aqptmt
.rel_ent_c a.rel_ent{overflow:initial;display:flex}.slide a.rel_ent{margin:0;box-shadow:none}.b_sidebar
.slide .rel_ent .cico,.rel_ent .cico,.rel_ent>img{display:inline-block;vertical-align:middle;margin:2px 8px 2px -10px;border-radius:50%;background:#f7f7f7;flex-shrink:0}.rel_ent_tw{vertical-align:middle;font-size:12px;color:#444;line-height:16px;height:100%;float:right;display:table}.rel_ent_t{display:table-cell;vertical-align:middle;align-content:center}.aqptmt:not(.spl2) .rel_ent_tw,.aqptmt:not(.spl2) .rel_ent_tw
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.rel_ent_t{overflow:hidden;text-overflow:ellipsis;white-space:nowrap}.aqptmt:not(.spl2)
.rel_ent_tw{display:flex;overflow:hidden;text-overflow:ellipsis;align-items:center;white-space:nowrap}.rel_e
nt_w:not(.spl2) .rel_ent_t strong{display:inline-block;font-weight:normal}#b_results phead
.b_attribution{padding-bottom:8px}.iaplanner .b_moreLink{margin-top:11px}.iaplanner.iarnd
.b_moreLink{margin-top:3px}.b_ans .b_rich pserp.b_mBMargin{padding:0;border-top:0}.b_ans #vidans2
.b_rich .rel_ent_w{margin:6px 0 16px}.aqptmt a.rel_ent{border-color:#106ebe}.aqptmt:not(.spl2)
.rel_ent_tw,.aqptmt:not(.spl2) .rel_ent_tw .rel_ent_t{font-size:16px}#b_content .iacfic.mmkiaacf .iacfmit
.imgInfo{color:var(--smtc-ctrl-link-foreground-brand-rest)}#b_content .iacfic.mmkiaacf .iacfmit
a{text-decoration-color:var(--smtc-ctrl-link-foreground-brand-hover)}#b_content .iacfic.mmkiaacf .iacfmit
.imgInfo{font:var(--bing-smtc-text-global-body3)}#b_content .iacfic.mmkiaacf
.iacf_crsI[data-wptds-carousel]>div[data-wptds-carousel-scroll-container]{padding-bottom:52px}#b_content
.iacfic.mmkiaacf .iacfmit{box-sizing:initial;padding-bottom:52px}#b_content .iacfic.mmkiaacf .iacfmit
.imgInfo{text-overflow:ellipsis;display:-webkit-box;-webkit-line-clamp:2;-webkit-box-orient:vertical;align-sel
f:stretch;padding:0 var(--smtc-gap-between-content-xx-small);overflow:hidden}#b_content .iacfic.mmkiaacf
.iacfimgc{padding-bottom:var(--smtc-gap-between-content-x-small)}#b_content .acfImgAns
.salink,#b_content .acfImgAns
.iasalink{text-align:center;display:block;padding-bottom:var(--smtc-gap-between-content-medium)}#b_conte
nt .acfImgAns .salink:hover .iasabt,#b_content .acfImgAns .iasalink:hover
.iasabt{background:var(--smtc-background-ctrl-neutral-hover)}#b_content .acfImgAns .salink:active
.iasabt,#b_content .acfImgAns .iasalink:active
.iasabt{background:var(--smtc-background-ctrl-neutral-pressed)}#b_content .acfImgAns .iasabt,#b_content
.acfImgAns
.iaExp_chevron{height:initial;border-radius:var(--smtc-corner-circular);background:var(--bing-smtc-backgrou
nd-ctrl-neutral-rest);display:inline-block;position:relative;top:0;box-shadow:initial}#b_content .acfImgAns
.iasatxt{font:var(--bing-smtc-text-global-caption1-strong);color:var(--bing-smtc-foreground-content-brand-res
t);padding:var(--smtc-gap-between-content-x-small)
var(--smtc-gap-between-content-small);display:flex;gap:var(--smtc-gap-between-content-x-small);justify-cont
ent:center;align-items:center}#b_content .acfImgAns .salink::before,#b_content .acfImgAns
.iasalink::before{border-bottom:1px solid
var(--smtc-stroke-ctrl-on-neutral-rest);width:100%;display:block;content:"";top:18px;position:relative}#b_con
tent .acfImgAns .svg{vertical-align:top}#b_content .acfImgAns
.svgpath{fill:var(--bing-smtc-foreground-content-brand-rest)}#b_content .acfImgAns .iachevron,#b_content
.acfImgAns .svgicon{width:12px;height:12px;margin-left:0;position:relative;top:0}html[dir=rtl] #b_content
.acfImgAns .iachevron,html[dir=rtl] #b_content .acfImgAns .svgicon{transform:scaleX(-1)}#b_content
.acfImgAns .rel_ent_w a.rel_ent{border:1px solid var(--acf-stroke-neutral-decorative)}#b_content .acfImgAns
.iaheader .iacf_head{text-decoration-color:var(--smtc-foreground-ctrl-neutral-primary-hover)}#b_content
.acfImgAns .iaheader .iacf_head span,#b_content .acfImgAns .iaheader .iacf_head
svg{color:var(--smtc-foreground-content-neutral-primary);forced-color-adjust:auto}#b_content
.iacfic.mmkiaacf .iacf_plan .cico{border-radius:var(--mai-smtc-corner-card-default)}#b_content
.iacfic.mmkiaacf .iacf_plan .cico img{border-radius:var(--mai-smtc-corner-card-default)}#b_content
.iacfic.mmkiaacf{overflow:visible;padding:0}#b_content .iacfic.mmkiaacf

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.iacf_crsI[data-wptds-carousel]{margin:0;padding-bottom:var(--smtc-gap-between-content-medium)}#b_cont
ent .iacfic.mmkiaacf .iacf_crsI[data-wptds-carousel]
[data-wptds-carousel-controls]{--wptds-carousel-control-opacity:1}#b_content .iacfic.mmkiaacf
.iacf_crsI[data-wptds-carousel]>div{padding:0}#b_content .iacfic.mmkiaacf .iacf_crsI[data-wptds-carousel]
[data-direction="end"]{margin-right:-22px}#b_content .iacfic.mmkiaacf .iacf_crsI[data-wptds-carousel]
[data-direction="end"] svg{transform:scaleX(-1)}#b_content .iacfic.mmkiaacf .iacf_crsI[data-wptds-carousel]
[data-direction="start"]{margin-left:-22px}#b_content .iacfic.mmkiaacf .iacf_crsI[data-wptds-carousel]
[data-direction="start"] svg{transform:scaleX(1)}#b_content .iacfic.mmkiaacf .iacf_crsI[data-wptds-carousel]
button{background:var(--smtc-background-card-on-primary-default-rest);box-shadow:var(--bing-smtc-shado
ws-card-hover-3);width:36px;border-radius:var(--smtc-corner-ctrl-lg-rest)}#b_content .iacfic.mmkiaacf
.iacf_crsI[data-wptds-carousel]
button: hover{background:var(--smtc-background-card-on-primary-default-hover)}#b_content
.iacfic.mmkiaacf .iacf_crsI[data-wptds-carousel]
button: active{background:var(--smtc-background-card-on-primary-default-pressed)}#b_content
.iacfic.mmkiaacf .iacf_crsI[data-wptds-carousel] button svg{transition:initial}#b_content .iacfic.mmkiaacf
.iacf_crsI[data-wptds-carousel] button svg
path{fill:var(--smtc-foreground-content-neutral-secondary);forced-color-adjust:auto}#b_content
.iacfic.mmkiaacf .iacfmit{position:absolute}#b_content .iacfic.mmkiaacf .iacfimgc{margin:auto}#b_content
.b_ans.b_imgansacf{padding:0!important}#b_content
.b_ans.b_top.b_imgansacf{background-color:initial!important}#b_content .acfImgAns .iaheader
.iacf_head{gap:0;padding:var(--smtc-gap-between-content-medium)
0;display:flex;align-items:center;box-sizing:border-box}#b_content .acfImgAns .iaheader
.iacf_head: hover{text-decoration:none}#b_content .acfImgAns .iaheader .iacf_head: hover
span{text-decoration:underline}#b_content .acfImgAns .iaheader .iacf_head: hover
.iacf_chv{background:initial}#b_content .acfImgAns .iaheader .iacf_head
div{display:flex;align-items:center;transition:background 300ms
ease-out;margin-right:-3px;border-radius:var(--smtc-corner-ctrl-lg-rest);overflow:hidden;color:var(--bing-smtc-f
oreground-content-neutral-secondary-alt)}#b_content .acfImgAns .iaheader .iacf_head
span{width:initial;flex:none;font:var(--bing-smtc-text-global-subtitle1-strong);padding-inline-start:0;max-widt
h:90%;text-overflow:ellipsis;white-space:nowrap;overflow:hidden}#b_content .acfImgAns .iaheader
.iacf_head .iacf_chv{width:22px;justify-content:center;height:22px}#b_content .acfImgAns
.rel_ent_w{margin-top:0}#b_content .acfImgAns .rel_ent_w .b_slideexp{margin:0}#b_content .acfImgAns
.rel_ent_w .btn. rounded{top:initial;margin-top:1px}#b_content .acfImgAns .rel_ent_w
.btn.next{right:-14px}#b_content .acfImgAns .rel_ent_w
.cr>div{width:36px;height:38px;border-radius:var(--smtc-corner-ctrl-lg-rest);background:var(--bing-smtc-bac
kground-container);box-shadow:var(--bing-smtc-shadows-card-hover-3);border:initial}#b_content
.acfImgAns .rel_ent_w .cr>div: after{margin-inline-start:2px;top:0}#b_content .acfImgAns .rel_ent_w
.b_viewport{padding-top:0;margin-left:0;padding-left:0}#b_content .acfImgAns .rel_ent_w .b_viewport
.slide{height:38px;margin-left:0;margin-inline-end:var(--smtc-gap-between-content-x-small)}#b_content
.acfImgAns .rel_ent_w
a.rel_ent{border-radius:var(--smtc-corner-circular);background:var(--smtc-background-card-on-primary-defau

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lt-rest);padding-left:0;height:38px}#b_content .acfImgAns .rel_ent_w
a.rel_ent: hover{background:var(--smtc-background-card-on-primary-default-hover)}#b_content .acfImgAns
.rel_ent_w a.rel_ent: active{background:var(--smtc-background-card-on-primary-default-pressed)}#b_content
.acfImgAns .rel_ent_w .cico{margin:var(--smtc-gap-between-content-xx-small)
var(--smtc-gap-between-content-x-small) var(--smtc-gap-between-content-xx-small)
var(--smtc-gap-between-content-xx-small)}#b_content .acfImgAns .rel_ent_w
.rel_ent_tw{font:var(--bing-smtc-text-global-caption1-strong)}#b_content .acfImgAns .rel_ent_w
.rel_ent_c{padding-left:0}#b_content .acfImgAns .rel_ent_w .b_slidebar{padding-inline-start:0}#b_content
.acfImgAns .rel_ent_w .rel_ent_c
.rel_ent: first-child{margin-inline-start:var(--mai-smtc-padding-card-default);align-items:center}html[dir=rtl]
#b_content .acfImgAns .iaheader .iacf_head svg{transform:scaleX(-1)}html[dir=rtl] #b_content .acfImgAns
.iacf_crsI[data-wptds-carousel] [data-direction="end"]{transform:scaleX(-1)}html[dir=rtl] #b_content
.acfImgAns .iacf_crsI[data-wptds-carousel] [data-direction="start"]{transform:scaleX(-1)}.iacfm .iacfmit
a:focus .isp_imgcont img,.iacfm .iacfmit a:focus .iacfimgc img,.iacfm .iacfmit a:focus .iacf_smol{outline:3px
dotted #1aebff;outline-offset:-5px}.iacfm .iacfmit .cico{position:relative}.iacfm .iacfmit
.cico::after{content:"";position:absolute;left:0;top:0;width:100%;height:100%;background:rgba(0,0,0,.03)}.gs
_card .iacfmit img,.b_wpt_container .iacfmit img,.b_acf_card .iacfmit img{transition:transform .3s
ease-out}.gs_card .iacfmit: hover .iacfimgc img,.b_wpt_container .iacfmit: hover .iacfimgc img,.b_acf_card
.iacfmit: hover .iacfimgc
img{transform:scale(1.1)}.iacfic{position:relative;height:100%;width:100%;background:#fff;overflow:hidden
;border-radius:inherit}.iacf_plan{position:relative}.iacfmit
.mimg{width:100%;height:100%;position:relative}.iacfic .iacfmit{position:absolute}.iacfic .iacfmit
.cico{border-radius:0}.iacfca{padding:var(--mai-smtc-padding-card-default);box-sizing:border-box;overflow:
hidden;border-radius:var(--mai-smtc-corner-card-default)}.iacfca .iacf_crsI
.iacfmit{overflow:hidden;position:relative}.iacfca .iacf_crsI .iacfmit
.cico{overflow:hidden;border-radius:var(--mai-smtc-corner-list-card-default)}.iacfca .iacf_crsI .iacfmit .cico
img{border-radius:inherit;transition:transform 300ms ease-out}.iacfca .iacf_crsI .iacfmit: hover .cico
img{transform:scale(1.1)}.iacfca .iacfmit a:focus,.iacfca .iacfmit a:focus img{outline:0}.iacfca .iacfmit
a:focus .cico::after{border-radius:inherit;box-shadow:inset 0 0 0 3px
var(--bing-smtc-background-card-on-primary-alt-rest);outline:2px solid
var(--smtc-foreground-content-neutral-secondary);outline-offset:-2px}.iacfca
[data-wptds-carousel][data-default][data-variant="Normal"]{margin:0
calc(-1*var(--mai-smtc-padding-card-default));height:auto}.iacfca
[data-wptds-carousel][data-default][data-variant="Normal"] [data-wptds-carousel-scroll-container]{padding:0
var(--mai-smtc-padding-card-default)}.iacfca [data-wptds-carousel][data-default][data-variant="Normal"]
[data-wptds-carousel-scroll-container] ol{width:fit-content;align-items:center}.iacfca
[data-wptds-carousel][data-default]
[data-wptds-carousel-control][data-direction="end"]{margin-right:24px}.iacfca
[data-wptds-carousel][data-default]
[data-wptds-carousel-control][data-direction="start"]{margin-left:24px}.iacfca
.iacf_pag{position:absolute;bottom:8px;left:50%;transform:translate(-50%,0)}.cards.large

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.iacfca{height:200px}[dir="rtl"]
.iacf_crsI[data-wptds-carousel]
[data-wptds-carousel-control]{background:var(--bing-smtc-background-ctrl-neutral-rest);border:0;height:56px;
width:16px;transition:width
.3s;background
.3s;color:var(--smtc-foreground-ctrl-neutral-primary-hover)}.iacfm.iacfca .iacf_crsI[data-wptds-carousel]
[data-wptds-carousel-control] svg{transition:transform .3s}.iacfm.iacfca .iacf_crsI[data-wptds-carousel]
[data-wptds-carousel-control]:hover{width:24px;background:var(--smtc-background-ctrl-neutral-hover)}.iacf
m.iacfca .iacf_crsI[data-wptds-carousel] [data-wptds-carousel-control] path{fill:currentColor}.iacfm.iacfca
.iacf_crsI[data-wptds-carousel] ol [data-direction="start"]{border-radius:0 8px 8px
0;margin-left:16px}.iacfm.iacfca .iacf_crsI[data-wptds-carousel] ol [data-direction="start"]
svg{transform:scale(.7)}.iacfm.iacfca .iacf_crsI[data-wptds-carousel] ol [data-direction="start"]:hover
svg{transform:scale(1)}.iacfm.iacfca .iacf_crsI[data-wptds-carousel] ol
[data-direction="end"]{border-radius:8px 0 0 8px;margin-right:16px}.iacfm.iacfca
.iacf_crsI[data-wptds-carousel] ol [data-direction="end"] svg{transform:scale(-.7)}.iacfm.iacfca
.iacf_crsI[data-wptds-carousel] ol [data-direction="end"]:hover svg{transform:scale(-1)}.iacfm.iacfca.iacf_fb
.iacf_crsI[data-wptds-carousel] [data-wptds-carousel-control],.iacfm.iacfca.iacf_ss
.iacf_crsI[data-wptds-carousel]
[data-wptds-carousel-control]{background:var(--mai-smtc-background-ctrl-on-image-rest);color:var(--mai-sm
tc-foreground-ctrl-on-image-rest)}.iacfm.iacfca.iacf_fb .iacf_crsI[data-wptds-carousel]
[data-wptds-carousel-control] path,.iacfm.iacfca.iacf_ss .iacf_crsI[data-wptds-carousel]
[data-wptds-carousel-control] path{fill:currentColor}.iacfca .iacf_colg_crsI
[data-wptds-carousel-list]{width:fit-content}.iacfca .iacf_colg_crsI .iacfmit{position:absolute}.iacfca
.iacf_colg_crsI
.cico{border-radius:0}.iacfca:not(.iacfh):has(>.iacf_colg_crsI){height:100%;width:100%;padding:0;overflow:
hidden;border-radius:inherit}.iacfca:not(.iacfh):has(>.iacf_colg_crsI)
.iacfmit{border-radius:0}.iacfca:not(.iacfh):has(>.iacf_colg_crsI) [data-wptds-carousel][data-default]
[data-wptds-carousel-controls]{inline-size:calc(100% + var(--wptds-carousel-control-size) -
var(--mai-smtc-padding-card-default)*2);transform:translateX(calc(0rem +
var(--mai-smtc-padding-card-default) - (var(--wptds-carousel-control-size)/2)))
translateY(-50%)}[data-wptds-carousel][data-default],[data-wptds-carousel][data-default]::before,[data-wptds-
carousel][data-default]::after,[data-wptds-carousel][data-default] *,[data-wptds-carousel][data-default]
*::before,[data-wptds-carousel][data-default]
*::after{box-sizing:border-box;margin:0;padding:0}[data-wptds-carousel][data-default][hidden],[data-wptds-c
arousel][data-default]
[hidden]{display:none}[data-wptds-carousel][data-default][data-visually-hidden],[data-wptds-carousel][data-d
efault] [data-visually-hidden]{block-size:.0625rem;border:0;clip:rect(0 0 0
0);inline-size:.0625rem;margin:-.0625rem;overflow:hidden;padding:0;position:absolute}[data-wptds-carousel]
[data-default]{--wptds-carousel-control-bg-color:#fff;--wptds-carousel-control-border-color:#ddd;--wptds-car
ousel-control-box-shadow:0rem .125rem .1875rem
rgba(0,0,0,.1);--wptds-carousel-control-fg-color:#767676;--wptds-carousel-control-size:2rem;display:block;po
sition:relative;block-size:100%}[data-wptds-carousel][data-default]

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[data-wptds-carousel-scroll-container]{overflow-x:auto;overflow-y:clip;scroll-behavior:smooth;block-size:100%;-ms-overflow-style:none;scrollbar-width:none}[data-wptds-carousel][data-default]
[data-wptds-carousel-scroll-container]::-webkit-scrollbar{display:none}[data-wptds-carousel][data-default]
[data-wptds-carousel-scroll-container]:focus-visible{outline-color:Highlight;outline-color:-webkit-focus-ring-color;outline-offset:.0625rem;outline-style:auto;outline-width:.0625rem}[data-wptds-carousel][data-default]
[data-wptds-carousel-list]{display:flex;gap:.5rem;list-style:none;block-size:100%}[data-wptds-carousel][data-default]
[data-wptds-carousel-list]>*[flex-grow:0;flex-shrink:0][data-wptds-carousel][data-default]
[data-wptds-carousel-list]>:not([data-wptds-carousel-item]){display:none}[data-wptds-carousel][data-default]
[data-wptds-carousel-item]{block-size:100%}[data-wptds-carousel][data-default]
[data-wptds-carousel-item]>*[block-size:100%][data-wptds-carousel][data-default]
[data-wptds-carousel-item]>img{display:block;inline-size:auto}[data-wptds-carousel][data-default]
[data-wptds-carousel-controls]{list-style:none;position:absolute;inline-size:calc(100% + var(--wptds-carousel-control-size));inset-block-start:50%;transform:translateX(calc(0rem - (var(--wptds-carousel-control-size)/2))) translateY(-50%);display:flex;align-items:center;justify-content:space-between;pointer-events:none}[data-wptds-carousel][data-default]
[data-wptds-carousel-controls]>*[flex-grow:0;flex-shrink:0][data-wptds-carousel][data-default]
[data-wptds-carousel-control]{cursor:pointer;inline-size:var(--wptds-carousel-control-size);aspect-ratio:1;display:grid;place-content:center;border-radius:50%;background-color:var(--wptds-carousel-control-bg-color);border:.0625rem solid var(--wptds-carousel-control-border-color);box-shadow:var(--wptds-carousel-control-box-shadow);color:var(--wptds-carousel-control-fg-color);opacity:var(--wptds-carousel-control-opacity);pointer-events:all}[data-wptds-carousel][data-default]
[data-wptds-carousel-control]:active{--wptds-carousel-control-bg-color:#fff;--wptds-carousel-control-border-color:#ddd;--wptds-carousel-control-box-shadow:0rem .125rem .1875rem rgba(0,0,0,.1);--wptds-carousel-control-fg-color:#767676}[data-wptds-carousel][data-default]
[data-wptds-carousel-control]:focus-visible{outline-color:Highlight;outline-color:-webkit-focus-ring-color;outline-offset:.0625rem;outline-style:auto;outline-width:.0625rem}[data-wptds-carousel][data-default]
[data-wptds-carousel-control]*{pointer-events:none}[data-wptds-carousel][data-default]
[data-wptds-carousel-control]>svg{display:block}[data-wptds-carousel][data-default]
[data-wptds-carousel-control][data-direction="start"]>svg{transform:scaleX(1)}[data-wptds-carousel][data-default]
[data-wptds-carousel-control][data-direction="end"]>svg{transform:scaleX(-1)}[data-wptds-carousel][data-default]
[data-wptds-carousel-control][aria-disabled="true"]{visibility:hidden;cursor:not-allowed}[data-wptds-carousel][data-default]
[data-wptds-carousel-announce]{block-size:.0625rem;border:0;clip:rect(0 0 0 0);inline-size:.0625rem;margin:-.0625rem;overflow:hidden;padding:0;position:absolute}[data-wptds-carousel][data-default]
[data-wptds-carousel-announce][data-variant="Normal"],[data-wptds-carousel-announce][data-variant="FullWidth"]{--wptds-carousel-control-opacity:0}[data-wptds-carousel][data-default]
[data-wptds-carousel-announce][data-variant="Normal"]:has([data-wptds-carousel-scroll-container]:focus-visible),[data-wptds-carousel-announce][data-variant="FullWidth"]:has([data-wptds-carousel-control]:focus-visible),[data-wptds-carousel-announce][data-variant="FullWidth"]:has([data-w

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ptds-carousel-scroll-container]:focus-visible),[data-wptds-carousel][data-default][data-variant="FullWidth"]:h
as([data-wptds-carousel-control]:focus-visible){--wptds-carousel-control-opacity:1}[data-wptds-carousel][dat
a-default][data-variant="Normal"][data-snap] [data-wptds-carousel-scroll-container]{scroll-snap-type:x
proximity}[data-wptds-carousel][data-default][data-variant="Normal"][data-snap]
[data-wptds-carousel-item]{scroll-snap-align:center;scroll-snap-stop:always}[data-wptds-carousel][data-defau
lt][data-variant="Normal"][data-snap]
[data-wptds-carousel-item]:first-of-type{scroll-snap-align:start}[data-wptds-carousel][data-default][data-variant="Normal"][data-snap]
[data-wptds-carousel-item]:last-of-type{scroll-snap-align:end}[data-wptds-carousel][data-default][data-variant="FullWidth"]
[data-wptds-carousel-scroll-container]{scroll-snap-type:x
mandatory}[data-wptds-carousel][data-default][data-variant="FullWidth"]
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ousel][data-default][data-variant="FullWidth"]
[data-wptds-carousel-item]:first-of-type{scroll-snap-align:start}[data-wptds-carousel][data-default][data-variant="FullWidth"]
[data-wptds-carousel-item]:last-of-type{scroll-snap-align:end}[data-wptds-carousel][data-default][data-variant="FullWidth"]
[data-wptds-carousel-item]>{*{inline-size:100%}[data-wptds-carousel][data-default][data-bleed-inline]
[data-wptds-carousel-controls]{--control-side-gap:.25rem;inline-size:calc(100%
(var(--control-side-gap)*2));transform:translateX(calc(0rem + var(--control-side-gap)))
translateY(-50%)}[data-wptds-carousel][data-desktop]
[data-wptds-carousel-control]:hover:not([aria-disabled="true"]):not(:active){--wptds-carousel-control-bg-color:
#fff;--wptds-carousel-control-border-color:#ddd;--wptds-carousel-control-box-shadow:0rem .125rem .3125rem
rgba(0,0,0,.14);--wptds-carousel-control-fg-color:#111}[data-wptds-carousel][data-desktop][data-variant="No
rmal"]:has([data-wptds-carousel-scroll-container]:hover),[data-wptds-carousel][data-desktop][data-variant="N
ormal"]:has([data-wptds-carousel-control]:hover),[data-wptds-carousel][data-desktop][data-variant="FullWidt
h"]:has([data-wptds-carousel-scroll-container]:hover),[data-wptds-carousel][data-desktop][data-variant="Full
Width"]:has([data-wptds-carousel-control]:hover){--wptds-carousel-control-opacity:1}[dir="rtl"]
[data-wptds-carousel][data-default] [data-wptds-carousel-controls]{transform:translateX(calc(0rem +
(var(--wptds-carousel-control-size)/2))) translateY(-50%)}[dir="rtl"] [data-wptds-carousel][data-default]
[data-wptds-carousel-control][data-direction="start"]>svg{transform:scaleX(-1)}[dir="rtl"]
[data-wptds-carousel][data-default]
[data-wptds-carousel-control][data-direction="end"]>svg{transform:scaleX(1)}[dir="rtl"]
[data-wptds-carousel][data-default][data-bleed-inline]
[data-wptds-carousel-controls]{transform:translateX(calc(0rem - var(--control-side-gap)))
translateY(-50%)}[data-wptds-carousel][data-default],.b_drk
[data-wptds-carousel][data-default]{--wptds-carousel-control-bg-color:#484644;--wptds-carousel-control-bord
er-color:#545250;--wptds-carousel-control-box-shadow:0rem .125rem .1875rem
rgba(0,0,0,.1);--wptds-carousel-control-fg-color:#d2d0ce}.b_dark [data-wptds-carousel][data-default]
[data-wptds-carousel-control]:active,.b_drk [data-wptds-carousel][data-default]

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[data-wptds-carousel-control]:active{--wptds-carousel-control-bg-color:#484644;--wptds-carousel-control-border-color:#545250;--wptds-carousel-control-box-shadow:0rem .125rem .1875rem rgba(0,0,0,.1);--wptds-carousel-control-fg-color:#d2d0ce}.b_dark [data-wptds-carousel][data-desktop] [data-wptds-carousel-control]:hover:not([aria-disabled="true"]):not(:active),.b_drk [data-wptds-carousel][data-desktop] [data-wptds-carousel-control]:hover:not([aria-disabled="true"]):not(:active){--wptds-carousel-control-bg-color:#605e5c;--wptds-carousel-control-border-color:#545250;--wptds-carousel-control-box-shadow:0rem .125rem .3125rem rgba(0,0,0,.14);--wptds-carousel-control-fg-color:#faf9f8}.gs_card .iacfic .iacfmit .iacfimgc,.gs_card .iacfic .iacfmit .cico,.b_wpt_container .iacfic .iacfmit .iacfimgc,.b_wpt_container .iacfic .iacfmit .cico{width:100%!important;height:100%!important;border-radius:0}.gs_card .iacfic .iacfmit.iacfstc img,.gs_card .iacfic .iacfmit .iacfimgc img,.b_wpt_container .iacfic .iacfmit.iacfstc img,.b_wpt_container .iacfic .iacfmit .iacfimgc img{width:100%;height:100%;object-fit:cover}#slideexp4_9EBAA6 .slide { margin-right: 8px; }#slideexp4_9EBAA6c .b_slidebar .slide { border-radius: 6px; }#slideexp4_9EBAA6 .slide:last-child { margin-right: 1px; }#slideexp4_9EBAA6c { margin: -4px; } #slideexp4_9EBAA6c .b_viewport { padding: 4px 1px 4px 1px; margin: 0 3px; } #slideexp4_9EBAA6c .b_slidebar .slide { box-shadow: 0 0 0 1px rgba(0, 0, 0, 0.05); -webkit-box-shadow: 0 0 0 1px rgba(0, 0, 0, 0.05); } #slideexp4_9EBAA6c .b_slidebar .slide.see_more { box-shadow: 0 0 0 0px rgba(0, 0, 0, 0.00); -webkit-box-shadow: 0 0 0 0px rgba(0, 0, 0, 0.00); } #slideexp4_9EBAA6c .b_slidebar .slide.see_more: hover { box-shadow: 0 0 0 0px rgba(0, 0, 0, 0.00); -webkit-box-shadow: 0 0 0 0px rgba(0, 0, 0, 0.00); }Images of Super Farad Capacitor StandardSuper Farad Capacitor5 Farad Capacitor1 Farad Capacitor Size6 Farad Capacitor100 Farad Super CapacitorCapacitor Farad UnitsFarad Capacitor10 Farad Capacitor3 Farad CapacitorStore Home Products FeedbackStore Home Products Feedback2PCS super capacitor farad capacitor 2.7V 2F 3.3F 4F 4.7F 5F 6F 7F 8F ...1PCS New Super Capacitor Farad Capacitor Combination Type 5.5V 0.5F 1F ...5.5V Super Farad Capacitor 0.1F 0.22F 0.33F 0.47F 0.68F 1F 1.5F 4.0F ...Store Home Products Feedback2.7V 500F Super Farad Capacitor Single Row With Protection Board 5.4V ...2.7V 500F SAMWHA Super Farad Capacitor - UGE Electronics EgyptSuper Farad Capacitors 6pcs 2.7v 120f Super Capacitor With Protection ...10 farad super capacitor 2.7v manufacturerStore Home Products Feedback1PCS2-7V-Super-Farad-Capacitor-2-7V-2F-3-3F-4F-4-7F-5F-6F-7F.jpgUS \$1.996PCS-1Set-17V-116F-Single-Row-Farad-Capacitor-Super-Capacitor-2-85V ...See allsciencequizbook All You Need to Know About 500Farad Super ...This blog post will explain what a 500 Farad super capacitor is, how it operates and applications and why it is such a big deal in plain English in an easy-to ...

This blog post will explain what a 500 Farad super capacitor is, how it operates and applications and why it is such a big deal in plain English in an easy-to-understand manner.

Super capacitors act like any other kind of capacitor, only they can store tremendous amounts of energy. Many capacitors that you'd have seen in audio circuits have capacitances such as 470uf or 680uf ...

When correctly used, supercapacitors can support high power levels, high pulse power loads, and long-term back-up power needs. Understanding the nuances of supercapacitor ...

These capacitors offer very large capacitances in smaller form factor but have several pitfalls like they have minimum voltage requirement. Like li-ion batteries there should not be ...

OverviewHistoryBackgroundDesignStylesTypesMaterialsElectrical parametersIn the early 1950s, General Electric engineers began experimenting with porous carbon electrodes in the design of capacitors, from the design of fuel cells and rechargeable batteries. Activated charcoal is an electrical conductor that is an extremely porous "spongy" form of carbon with a high specific surface area. In 1957 H. Becker developed a "Low voltage electrolytic capacitor with porous carbon electrodes". He believed tha...

Feature high capacitance value (Farad) for energy storage, voltage hold-up and battery back-up applications. Double layer capacitors bridge the gap (see graph below) between conventional ...

They are also known as double-layer capacitors or ultracapacitors. Instead of using a conventional dielectric, supercapacitors use two mechanisms to store electrical energy: double-layer capacitance ...

This design gave a capacitor with a capacitance on the order of one farad, significantly higher than electrolytic capacitors of the same dimensions. This basic mechanical design remains the basis of ...

Supercapacitors, also known as ultracapacitors and electric double layer capacitors (EDLC), are capacitors with capacitance values greater than any other capacitor type available today.

These electrochemical type capacitors are small in size and can offer capacitance in tens, hundreds, or even thousands of Farad. They cannot only store a large amount of charge, but they ...

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