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5i hca chj Y ㄅZcUba Ybh
6UhYfmDck YfYX 8 Yj WYg
Gc XgtUHY Xf j Yf

ㄅdi hJc tU YFUb Y. & , J)) J
l d h c & 5 DYU_Ci hdi h7i ffYbh
ck G i hXck b 7i ffYbh) i 5
ck Ei YgWbhcdYfUhb 7i ffYbh) i 5
*J % : YYXUW_FYZfYbWYJc tU Y
&A n Gk HW b : fYei YbVmh
ㄅhY fUHYX, a GXYUbX) a ck GXY
Dck Yf ACG: 9Hg
% 8i lm7mWY AcXY
5Xi gUUVYci hdi hJc tU YZca *J h c) J
5Vmj Yci hdi hXgWUf Y
) a g ㄅhYfbU GcZhgtUfhH a Y
Dck Yf ccX ㄅXWUhf
ㄅhY fUHYXDfchYMc b : YUi fY
7mWY VmWmWY WffYbh a h
l bXYf j c tU Y cW_c i h
77l D Cj Yf cUXDfchYMc b
H Yfa U G i hXck b DfchYMc b. % 7
: 7HE: B%) L& , DUWU Yk h G7H& % % : H5F
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5jU UVY b UK YHUVY: Ub_DUWU Y

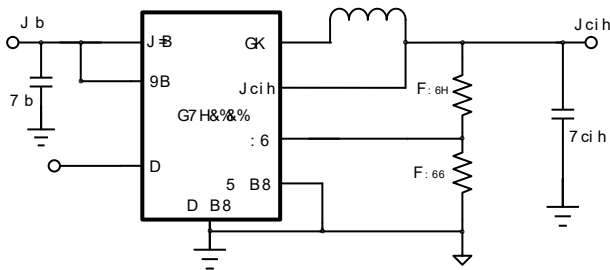
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a cXYW ㄅj YfhYf k h V h b bhYfbU dck Yf ACG: 9Hg
H Y XYj WY UW Yj Yg & 5 cZdYU_c i hdi hWffYbhZca
U& , J h c)) J bdi hJc tU YfUb Y k h Y WY Ybh cUX
UbX b Y fY i Uhcb H Y ci hdi h j c tU Y Wb WY
fY i UhYXh c Ug ck Ug *J

7cbgtUbhcb ha Y 7CH W ㄅhfc dfcj XYg Zgh
hfUb g Ybh fYgdcbgYUbX YUgYg ccdgtUV nUhcb : Ui h
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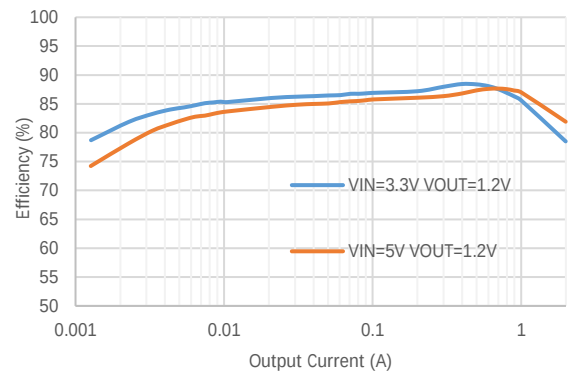
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a Ub tU bg YZWYbVmhXi f b h cUXcdYfUhcb

ㄅ bW XYg Z dfchYMc b ZUi fYg gi W Ug cj Yf
WffYbh dfchYMc b ci hdi h i bXYf j c tU Y dfchYMc b
bdi hi bXYf j c tU Y cW_c i h UbXh Yfa U g i hXck b

H Y G7H& % % fYei fYg U a b a U bi a Vyf cZY hYfbU
W ㄅa dcbYbfg UbX UfY Uj U UVY b U gdUWY gUj b
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5 B8		*	5 bUc fci bX d b
JCI H	(	)	Ci hdi hD b UbXXgWUf Y d b
D B8	)	(	Dck Yf fci bX d b
GK	*		Gk hW ci hdi h GK g Xf j Yb i d h J-B h fci h Y g XY dck Yf ACG: 9H Xi f b cb ha Y H Y bXi Wcf WffYbhXf j Yg GK h bY Uhj Yj c HU Yh fci ck g XY dck Yf ACG: 9H Xi f b cZ ha Y
J-B	+	&	Dck Yf gi dd m bdi h d b
D	,	%	Dck Yf ccX bXWcf H Y ci hdi hcZD g Ub cdYb XfUb h Uh WbbYh h J-B j UUb bhYfbU di i d fYg gcf D cYg Z h Yci hdi h j c HU Y gk h b % cZh Ybca bU j c HU Y

Cj Yf cdYfUhb ZYY Uf hYa dYfUhi fYfUb Yi b Ygg ch Yfk gYbchYX

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	7 Uf YX8Yj WY AcXY 78A dYf5BG= 9897 G & & %gdYWZVhcb U d bg&	%	%	_J
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6	i bVmc b h VcUfX WUfUWYf nUhcb dUfUa YhYf %	%&)	
F _{7hcd}	i bVmc b h WUgYh Yfa U fYg gU bWY %	%& ,)	
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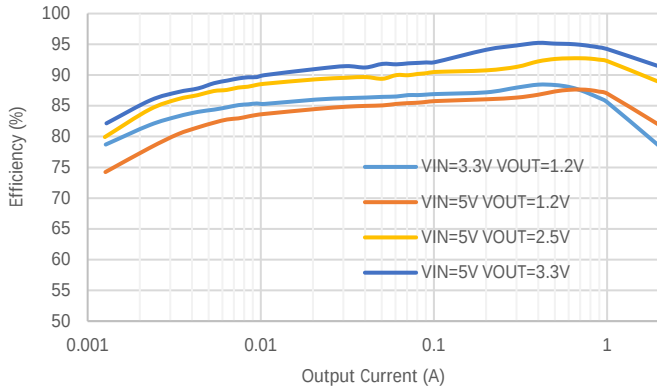
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6	i bVmc b h VcUfX WUfUWYf nUhcb dUfUa YhYf %	%-	
F _{7hcd}	i bVmc b h WUgYh Yfa U fYg gU bWY %	%&	
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% G7H dfcj XYg F₅ UbX F₇ bi a Vyfg cb mUg fYZfYbWY h Ygha UhY i bVmc b hYa dYfUhi fYg cZh Y XYj WYg F₅ UbX F₇ UfY bchU WUfUWYf ghWcZdUWU Y IgYZ Vi hcZa Ubmch Yf gnhYa Yj Y WUfUWYf ghVj gi W Ug h Y XYg b UbX Uhci hcZh Y df bhYX WfW h VcUfX D76 cbk W h Y G7H&%%gaci bhYX h Yfa U dUXgnY UbX Y hYfbU Ybj fcb a YbU ZMfcg H YD76 VcUfX gU YUhg b_h Uh g gc XYfYX h Y YUXg UbXh Yfa U dUXcZh Y G7H&%%7 Ub b h Y XYg b cf VcbZ i fUhcb cZh YD76 VcUfX WUb Ygh Y YZWWbVh cZh Y YUhg b_UbXh YfYZfYh YUWU U F₅ UbX F₇

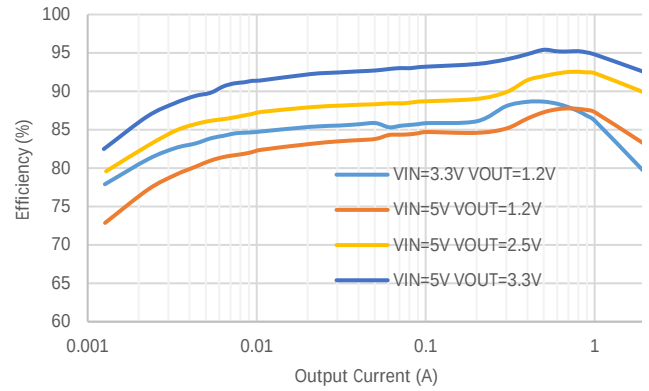
J-B1)J H 1 (7r %&) 7 hmd Wj jUi Yg UfYhYghYXi bXYf &) 7

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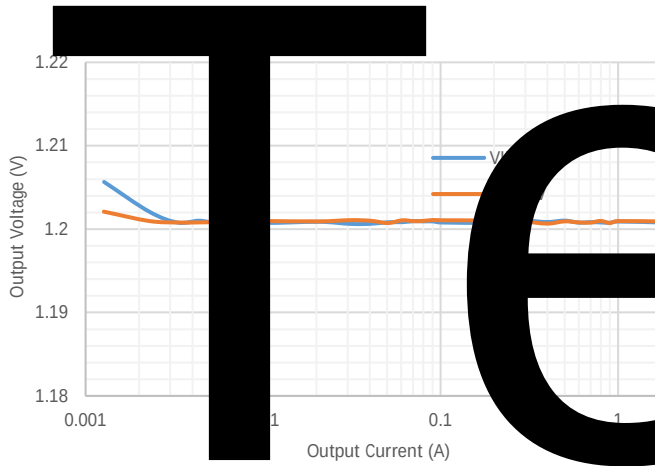
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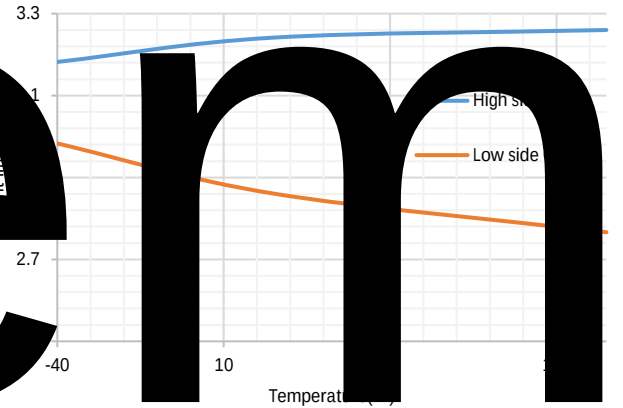
: i fY % 9ZWbVhJg cUX 7i ffYbhZf: H5 F



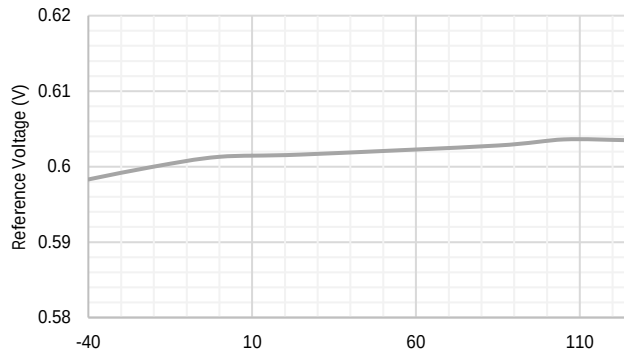
: i fY & 9ZWbVhJg cUX 7i ffYbhZf HH6 F



: i fY cUXFY i Uhcb



: i fY(7i ffYbh a hb Jg HYa dYfUhi fY



: i fY) J: 6 Jg HYa dYfUhi fY

: i fY* I J C Jg HYa dYfUhi fY

H YG7H&%%gU&, J)) J bdi h &5 ci hdi h grbWfcbci g M W Wbj YfhYf k h M h b , a gXYUbX) a
ck gXY dck Yf ACG: 9Hg 4 a d Ya Ybrg WbgfUbhcb ha Y Wbhf c fY i UhY ci hdi h j c tU Y dfcj Xb Yl W Ybh
bYUbX cUXhfUbg YbhYfgdcbgY

H YXYj WcdYfUhg bDi gY: fYei YbVhAcXi Uhcb D: A a cXYUh h cUXb h cdfcj XY h cUXYZZWbVh
H Yei YgWbWffYbh g hmd W m) i 5 i bXYf bc cUX H YG7H&%%ZUhi fYg Ub bhYfbU %) a g gcZghUfha Yhc
Ujc X Uf Y bfi g WffYbhUbXci hdi h j c tU Ycj Yfg cchXi fb gUffi d H YG7H&%% Ug UXYZi h bdi hgtUfhi d
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H YG7H&%%XYj W g &,)) J bdi h &5 ci hdi h grbWfcbci g ghYd Xck b Wbj YfhYfg k h bhYfbU dck Yf ACG: 9Hg
7cbgtUbhcb ha Y 7CH Wbhf c g Ya d cmYXh cdfcj XY ZghfUbg YbhYfgdcbgY UbX YUgm ccd gUUV nUhcb 5hh Y
VY bb b cZYUW W h Y gXYACG: 9H ghi fbYXcb ZfUZ YXcbYg chha YCB ha YdYfcX H YcbYg ch
ha Y g WUW UhYX Vmh Y Wbj YfhYfg bdi h j c tU Y J B UbXh Yci hdi h j c tU Y JCI H W h Vm W h VUgYXh
a UbHUb U dgYi Xc Z YX ZYei YbWhcj Yf h Y bdi h j c tU Y fUb Y G7H&%%h fbg cZ gXYACG: 9H UZf h Y
Z YXcb ha YUbXh fbg cb h Y ck gXYACG: 9H G7H&%%h fbg cZ h Y ck gXYACG: 9H cbW h Yci hdi h j c tU Y
XfcdYX VYck h Yci hdi h fY i Uhcb h YcbYg chha Yf h Yb fYgYhUbXh Y gXYACG: 9H ghi fbYXcb U Ub
H Ycb ha Y g bj YfgYmdfcdcfhcbU h h Y bdi h j c tU YUbXdfcdcfhcbU h h Yci hdi h j c tU Y 4Wb VY W UH YX
i gb h YZ ck b Yei Uhcb %.

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K YfY.

JCIH gh Yci hdi h j c tU Y
J B gh Y bdi h j c tU Y
: 4 gh Ygk hW b ZYei YbVh

5ZYfUb CB ha YdYfcX h YfY i Urcf cYg brc h YC: : ha YdYfcX H YC: : ha YdYfcX Yb h XYdYbXg cb J: 6
ba cghWgYg 4k YbXk Yb h Y: 6 j c tU YXYWUgYg VYck *J Uhk W dc bhh YCB ha YdYfcX ghf YfYX
Zh YC: : ha YdYfcX g Yggh Ub h Ya ba i a C: : ha Y h Ya ba i a C: : ha Yk VYUdd YX k W g Ufci bX
% bg hmd W

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H YG7H&%% Ug U % Xi hmW h a cXY K Yb h Y bdi h j c tU Y fUXi U mUddfcUWYg h Yci hdi h j c tU Y h Y
Xi hmW h g Uf YUbX fYUWYg h Ya ba i a h fbcZha Y % bG h Ygk hW b ZYei YbWhcZh Yci hdi h j c tU Y
VY bg h cXYWUgY K Yb h Y bdi h j c tU YXfcdg h c h YgUa Y Yj Y Ug h Yci hdi h j c tU Y h Y gXYACG: 9H
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H YG7H&%%g XYg bYXk h Dck Yf GUj Y AcXY DGA Uh h cUX WbXhcbg Zf dck Yf YZZWbVh H Y
fY i Urcf Ui hca UhW mfYXi Wg h Ygk hW b ZYei YbVhUbX Y hYbXg HcZk Ybc Hcb WUb b Xi fb h Y h
cUXWbXhcb h Yh YZZWbVhUbX ck ci hdi h fdd Y 5gh Yci hdi h WffYbhXYWUgYg Zca YUjm cUXWbXhcb
h Y bXi W h WffYbhXYWUgYg Ug k Y Yj Ybhi U mbYUf b nYfc WffYbh h g g h Y Vci bXUfm VYk Yb 77 A UbX
87 A H Y ck gXYACG: 9H ghi fbYXcZk Yb h Y bXi W h WffYbh fYUWYg nYfc Yj Y H Y cUX g dfcj XYXcbm
Vmci hdi h WdUW h k Yb : 6 j c tU Y g ck Yf h Ub *J h Y bY h CB W h VY bg K Yb h Yci hdi h WffYbh

bWYUgYg Zca htc YUjm cUXh Ygk hW b ZYei YbVh bWYUgYg htc _YYd ci hdi hj c HU Y H YfUbg hcb dc bhlc
h cUXcdYfUhcb WUb VY WUW UhYXi gb h YZ ck b Yei Uhcb & .

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K YfY.

J_{ci} H gh Yci hdi hj c HU Y
J_b gh Y bdi hj c HU Y
H_{cb} g cb ha Y
gh Y bXi WUbWY cZ bXi Wfcf

H YG7H&%&%fY i UhYg h Y bhYfbU fYZfYbWY j c HU YUh *J H Yci hdi hj c HU Y g gYhVmU fYg gfcf Xj XYf Zca
h Yci hdi hbcXYh h Y: 6 db 3 g fYWta a YbXYXh c i gY % htc YfUbWY cf VYhYf fYg gfcf I gY9ei Uhcb & htc WUW UhY
fYg gUbwWY cZ fYg gfcf Xj XYfg Hc a dfcj Y YZZWYbVh Uh h cUXg Uf Yf jUi Y fYg gfcf UfY fYWta a YbXYX
ck Yj Yf Zh YjUi Yg UfYhcc h YfY i Urcfk VYa cfYgi gWdhVYh bc gYUZZWmb ci hdi hj c HU YUWV fUWh

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K YfY.

J_{ci} H gh Yci hdi hj c HU Y
J_{F9}: gh Y fYZfYbWY j c HU Y
F: 6H gh Y fYg gfcf WbbYVmb h Yci hdi htc h Y: 6 db
F: 66 gh Y fYg gfcf WbbYVmb h Y: 6 db htc h Y fci bX

H YG7H&%&%d bXYfJ c HU Y cW_Ci h I J C XYZJi hgtUffi dh fYg c X g hmd WU & +J k h J-B fg b UbXg i hXck b
h fYg c X g &) J k h J-B ZJ b

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9B gUX HU Wbhf c dbh UhWUb hi fbh YfY i Urcfcb UbXcZZK Yb9B gdi YXVYck h YZJ b h fYg c Xj c HU Y
(J h YW dg i hg Xck b : cfWY9B UVcj Y hg fg b h fYg c Xj c HU Y %&J htc hi fbh YdUfhcb YUj Y9B ZcUhb
cf di hXck b htc fci bXh XgUVYh YG7H&%&%H YfY g Ub bhYfbU % A fYg gfcf WbbYVYXZca h Y9B db
h fci bX K Yb h YXYj WY g XgUVYX h YdUfhUi hca UhWU m cYg bhc ci hdi hXgWUf Y a cXY UbX hg bhYfbU
XgWUf YACG: 9H dfcj XYg U fYg ghj YXgWUf YdUh Zfh Yci hdi hWUdUWfcf

H YG7H&%&% Ug U V X b gcZgtUfh h UhUa dgi dh Yci hdi hj c HU Y b U Wbhf c YXg Yk fUhYUj c Xb cj Yfg cch
UhgtUffi d H YgcZgtUfhha Y g UVci h%) a g hmd WU

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3 YUW gk hW b WfWY h Y bXi Wfcf WffYbh g gYbgYX Vma cb hcf b h Y gXYACG: 9H Xi fb h YCB dYfcX
UbXh Y ck gXYACG: 9H Xi fb h YC: : dYfcX K Yb h Y bXi Wfcf WffYbh = fYUWYgh Y gXYACG: 9H
dYU_WffYbh a h hmd WU m &5 Xi fb h YCB dYfcX h Y gXYACG: 9H g ZfWYXcZZ a a YXUhmhc dfYj Ybh

h YWffYbhZca fgb Zfh Yf H Yb h Y ck gXYACG: 9Hh fbg cb UbXgUhg cb i bh = Xfdg VYck h Y ck gXY
ACG: 9HjU YmWffYbh a h lmd WU m 5 Zci hdi h cUXb Vbhbhi Yg h bVYUgY ci hdi hk Xfd VYck h Y I J D
UbXGGdb g XgWUf YXgi W h Uci hdi h g J H Yb h YXYj Wk Vbi bhZf + WfWYg cZgcZghUfhha YZf Wd
k Uhb ha YUbXfYgtUfhbcfa U mUZyf + WfWYg gcZghUfhdfcX

7

H YG7H&%% Ug cbYdck Yf ccX D ci hdi htc bXWUybcfa U cdYfUhc bUZyf h YgcZghUfhha Y D gUb cdYb
XfUb cZUb bhYfbU di i d fYgghcf)) K Yb: 6 gk h b % cZh YfY i Uhc bjcU Y *J D gdi YXi d
hc J-B Vmh Y bhYfbU fYgghcf Zh Y: 6 jcU Y gci hgXYh Y % k bXck D gdi YXhc fci bXVmUb bhYfbU
ACG: 9H

H YG7H&%%adYa Ybth YCj Yf jcU YDfchVWcb CJD WfW hfmhc a ba nYci hdi hjcU Ycj Yfg cchXi fb
cUXhfUbg Ybh fYVj Yfb Zca ci hdi hZi hVbXhcb cf h cUXhfUbg Ybh H Ycj YfjcU YVta dUfUhf b CJD
WfW hVta dUfYgh Y: 6 dbjcU Yhc h Y bhYfbU fYZfYbWj cU Y K Yb h YZYXWUj cU YfgYg Yfh Ub
%% cZh YZYXWUj cU Y h YCJD Vta dUfUhf ci hdi h cYg UbXh YWfW hhi fbg cZh Y G: 9H Xfj Yf
H Y G: 9H Xfj Yf h fbg cb i bh hf Yf bY Uhj YWffYbh a hcf: 6 VYck fYZfYbWj cU Y H Yb G: 9H h fbg
cbk h bcfa U CB ha YUbXh fb cZZ Z ck b k h U G: 9H cb i bh bY Uhj YWffYbh a hYXhf YfYXcf: 6 ck Yf
h Ub fYZfYbWj cU Y H YXYj WY lgh g fY i Uhc b dYfcXk Yb h YZYXWUj cU YZU g VYck % + cZh Y
fYZfYbWj cU Y

CbW h Y i bVmb hYa dYfUi fY b h Y G7H&%%Y WYXg % °7 h Y h Yfa U gYbg b WfW h ghcdg Vbj YfhYf
gk hV b UbXfYgtUfhgk h h Y i bVmb hYa dYfUi fYZU b VYck % °7 H Yfa U g i hXck b dfYj Ybth h Y XJa U Y
cb XYj WY Xi fb Y Wggj Y YUhUbX dck Yf Xgg dUhc b VbXhcb

H Y ci hdi h j c hU Y g gYh VmUb Y hYfbU fYg ghcf Xj XYf
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$$\sqrt{\frac{1}{2} \left(\frac{1}{12} \right)^2} +$$

K YfY.

=_{D95} gh Y bXi Wfcf dYU_ WffYbh
 =_{CIH} gh Y87 cUX WffYbh
 =_{DD} gh Y bXi Wfcf dYU_ hc dYU_ WffYbh
 =_{FAG} gh Y bXi Wfcf FAG WffYbh

⊕ cj Yf cUXb cf cUXfUbg Ybh WbXhcbg h Y bXi Wfcf dYU_ WffYbh WUb bWYUgYi d hc h Ygk HW WffYbh a hcZ h YXYj WYk W ghnd WUm &5 H Ya cgh VebgYfj Uhj YUddfcUW ghc WccgYUb bXi Wfcf h UgUhi fUhcb WffYbh fUhb fYUhf h Ub &5 6YUWi gYcZh YaU aia =_{D95} a hYX VmXYj WY h YaU aia ci hdi h WffYbh Uh Y G7H&%%WUb XY j Yf Ugc XYdYbXg cb h Y bXi Wfcf WffYbh fdd Y H i g h YaU aia XYg fYXci hdi h WffYbh Ugc UZZWgh Y gY YWfc b cZ bXi WUb WY H Yga U Yf bXi Wfcf fYgi hg b Uf Yf bXi Wfcf WffYbh fdd Y YUXb hc U ck Yf aU aia ci hdi h WffYbh

3

H Y bdi h WffYbh hc h YghYd Xck b 8787 Wbj YfhYf g XgWbhbi ci g h YfYZfY hfYei fYg U WdUWfcf hc gi dd mh Y 57 WffYbh hc h YghYd Xck b 8787 Wbj YfhYf k Ya UbUbb h Y87 bdi hjcUJ Y l gY WdUWfcf gk h ck 9GF Zcf VfhYf dYfZfa UbW 7 YfUa WUdUWfcf gk h L) F cfL +F XYWmf Wj UfYi gi U mgi YghYX VYUWi gYcZh Yf ck 9GF UbXga U hYa dYfUhi fY Wt YZWWbhg UbX h g ghcb mfYWt a a YbXYXhc i gYUbch Yf ck Yf jUi Y WdUWfcf Y %: k h ga U dUWU YgnY * hc ZhYf ZYei YbVhngk HW b bc gY D UWh Yga U gnY WdUWfcf Ug WcgYhc J B UbX B8 d bg Ug d cgg VY

H YjcUJ YfUhb cZh Y bdi h WdUWfcf a i gh VY fYUhf h Ub h YaU aia bdi hjcUJ Y 5bXh Y WdUWfcf a i gh Ugc Uj Y U fdd Y WffYbh fUhb fYUhf h Ub h YaU aia bdi h WffYbh fdd Y H Y FAG WffYbh b h Y bdi h WdUWfcf WUb VY WUW UhYXi gb 9ei Uhcb -

$$\sqrt{1 - \frac{1}{2}}$$

H Yk cfgh WUgY WbXhcb cWVfg UhJ ⊖1 & J_{CIH} k YfY.

$$\frac{1}{2} \%$$

K YfY.

⊖_{FAG} gh Y FAG WffYbh b h Y bdi h WdUWfcf
 =_{CIH} gh Y87 cUX WffYbh
 J_{CIH} gh Yci hdi hjcUJ Y
 J_{⊖au} gh YaU aia bdi hjcUJ Y

: cf ga d ZWUhcb WccgYUb bdi h WdUWfcf k h Ub FAG WffYbh fUhb fYUhf h Ub UZcZh YaU aia cUX WffYbh

K Yb gY YWmb WYfUa WUdUWfcf g hbYYXg hc Wtbg XYf h Y YZZWj Y jUi YcZU WdUWfcf XYWYUg b Ug h Y87 VUg jcUJ YUWfcg U WdUWfcf bWYUg b

H Y bdi hWdUWUbwV jUi YXYfYa bYg h Y bdi hfddYjcHU YcZh YfY i Uhf H Y bdi hjcHU YfddY WU b VY WU W UhYXi gb 9ei Uhcb %U bXh Ya U aia bdi hjcHU YfddYcWUfg Uh) Xi hmWUWU

————— (1 ———)

%%

K YfY.

gh Y bdi hjcHU YfddY
: α gh Ygk hW b ZYei YbWU
7 b gh Y bdi hWdUWUbwV
J_{CIH} gh Yci hdi hjcHU Y
J_b gh Y bdi hjcHU Y

: cf h g Yl Ua dY % : L+F WUfUa WUdUWUfg fUHYXZf % J b dUfU Y UfYi gYX 5bXU %: Zf ZYei YbWU
ZhYf b WUdUWUfg g d UWYXUg WcgYUg dceg VYhc h YXYj WU d bg

3

H YgYWUcb cZci hdi hWdUWUfg k UZZWUci hdi hjcHU YfddY b ghYUXmgUHY U bX cUXfUbg YbhdYfZfa UbWU

H Yci hdi hfddY g YggYbhU mWUa dcgYXcZk c dUfUg CbY g WU gYX Vmh Y bXi WUf WffYbhfddY c b h fci
h Y9ei jUYbhGYf Yg FYg gU bWU9GF cZh Yci hdi hWdUWUfg U bXh Ych Yf g WU gYX Vmh Y bXi WUf WffYbhfddY
WUf b UbX XgWUf b h Yci hdi hWdUWUfg Hc UW Yj Yga U ci hdi hjcHU YfddY WccgYU ck 9GF ci hdi h
WdUWUfg _Y WUfUa WUdUWUfg : cf WUfUa WUdUWUfg h Y WdUWUbwV Xca bUHYg h Y ci hdi hfddY : cf
ga d ZUhc b h Yci hdi hjcHU YfddY WU b VY Ygha UhYX Vm9ei Uhcb %XYg fYX

—————² (1 ———)

%&

K YfY.

gh Yci hdi hjcHU YfddY
: α gh Ygk hW b ZYei YbWU
gh Y bXi WU bWU cZ bXi WUf
7_{CIH} gh Yci hdi hWdUWUbwV
J_{CIH} gh Yci hdi hjcHU Y
J_b gh Y bdi hjcHU Y

8i Yhc WUdUWUfg XY fUXb i bXYf 87 VUg h Y VUg jcHU Y WU b g b ZWUbm fYXi WU WdUWUbwV 7 YfUa W
WUdUWUfg WU b cgY a cghcZh Yf WdUWUbwV Uh fUHYX jcHU Y H YfYZfY YUj Ya Uf b cb h YjcHU Y fUhb hc
Ybgi fYUXYei UhYZZYm j Y WdUWUbwV Hnd WU m tk c % : WUfUa Wci hdi hWdUWUfg k cf_Zf a cghUdd WUhc b g

3

2 = 3 6 1

VOUT	L1	COUT	R1	R2	C5
1.2V	0.47uH	20uF	10.2K	10.2K	&& d:
1.8V	0.68uH	20uF	20K	10.2K	% d:
&) J	1uH	20uF	32.4K	10.2K	% d:

1

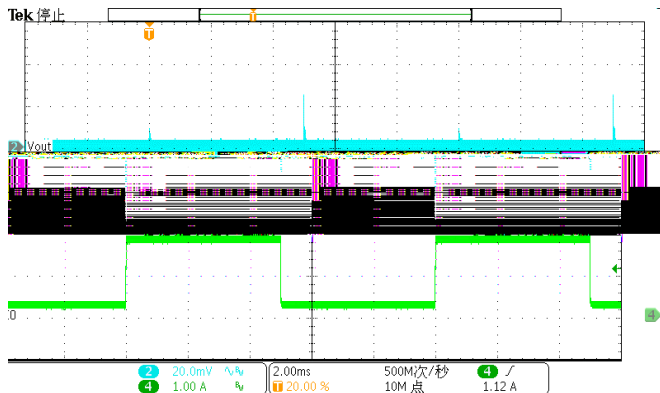
J-B1)J J Cl H1 %&J i b Ygg ch Yfk gYbchYX

: i fY- Dck Yfi d =C581&5

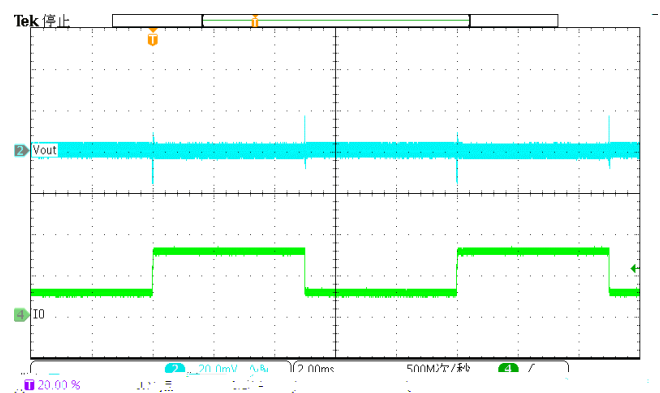
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: i fY % 9B hc Y =C581 % a 5

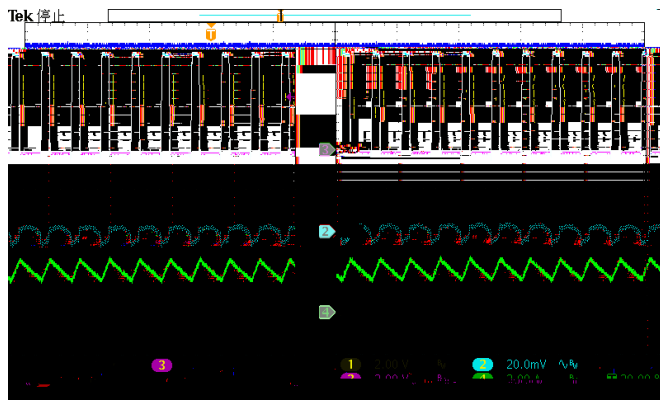
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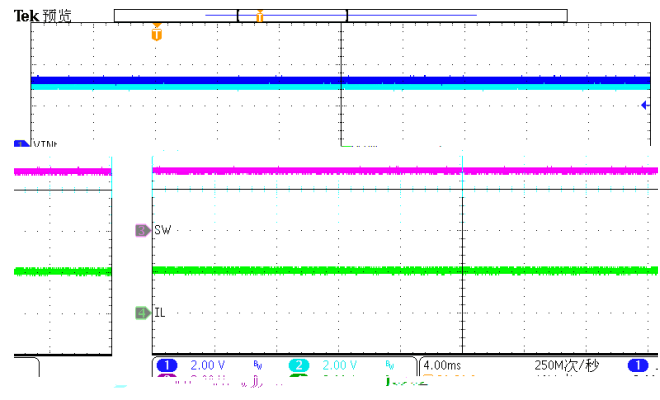
: i fY % cUXHfUbg Ybh &5 % , 5 %*5# g



: i fY % cUXHfUbg Ybh)5 %)5 %*5# g



: i fY % Ci hdi hF dd Y =C581&5



: i fY % % 8i lm J -B1 J J CI H1 J =C581&5



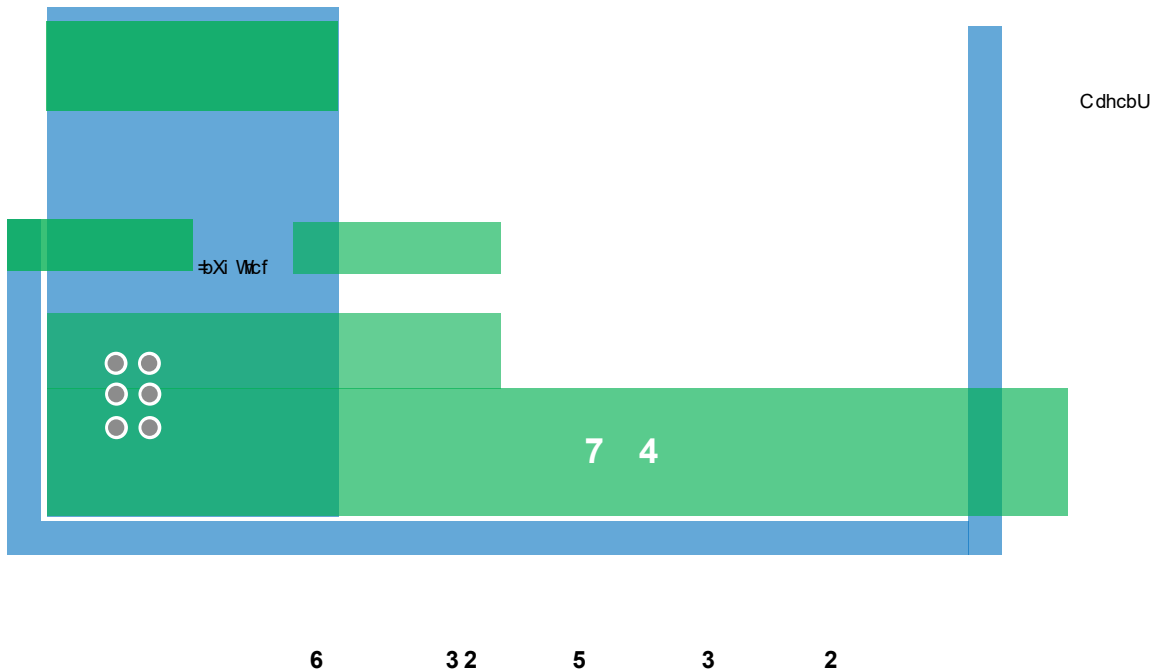
: i fY % H Yfa U J -B1)J J CI H1 %&J -B1&5 HH6F

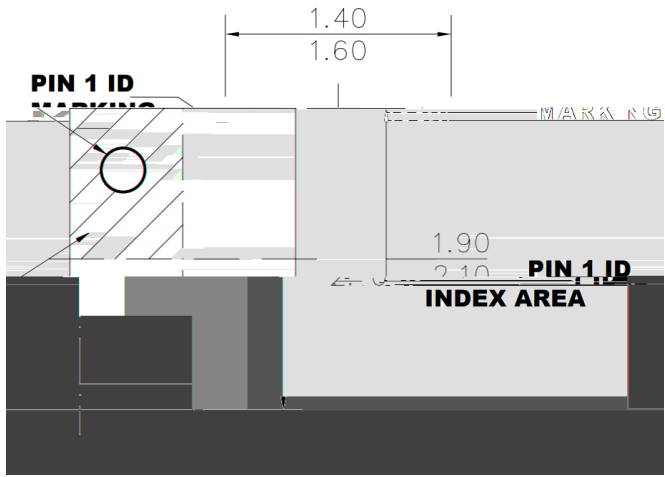


: i fY & H Yfa U J -B1)J J CI H1 %&J -B1&5 : H5F

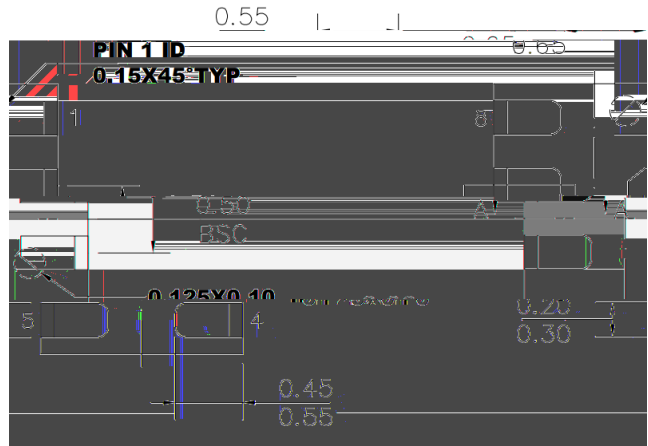
DfedYf D7 6 Uñci h g U W h W U Z f G7 H&%&%g g h U V Y U b X Y Z W b h c d Y f U h c b H Y h f U W g V b X i V m b Z J g h g k h W b W f f Y b r g c f j c h U Y g U f Y Y g m h c b h Y f U m k h g h U m b X i V m U b W U b X d U f U g h W W U d U W U b W h c Y b Y f U h Y b c g Y U b X X Y f U X Y d Y f Z f a U b W V : c f V m h Y f Y g i h g Z c k h Y g Y i X Y b Y g U g V Y c k .

% Dck Yf fci bXBb gWYa Y g j Yfm VhWU VYU gY cZ Wffmb dck Yf h Yfa U UbX HW#AcI bWb bc gY
UggcWUHyXk h WcW_ZYei YbVh H Y h i a VcZfi Y g t c a U_Y fci bXhUWY ck Ygh a dYbXYbWY UbX dck Yf UfY
XgM(Y)hX VY Yb mCb D7Ug Qi ZZYbhm dWb h fci bXUfYUk Yf c h a HcduYfa U-8b4bdu VUm g b Gcj Y8 7U hUfYU - %& *%& +
& DUWYU ck 9GF WfUa WUdUWfc Ug Wc gYtc J-B d b UbXh Y fci bXUg d cgg VYtc fYXi WY dUfUg hWYZVIM
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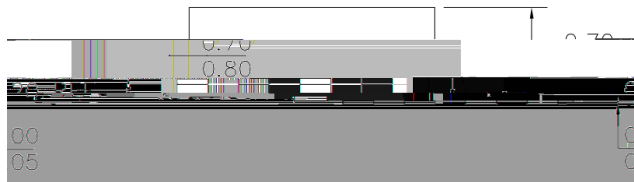




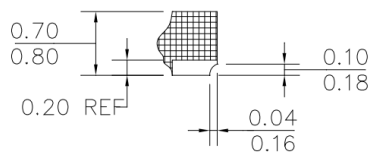
HCD J ØK



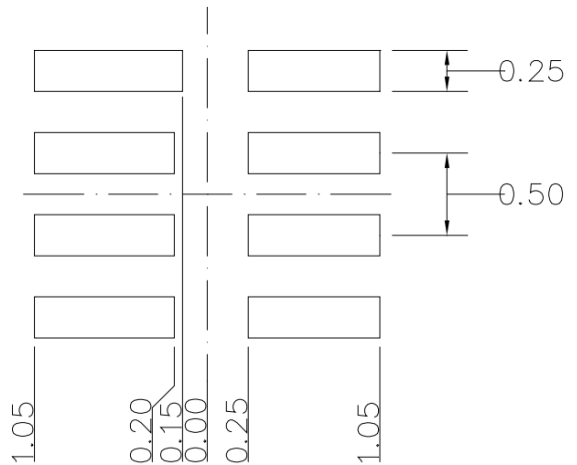
6CHCA J ØK



G89 J ØK



G97HCB 5 5

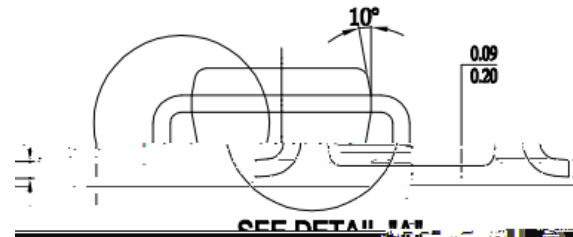
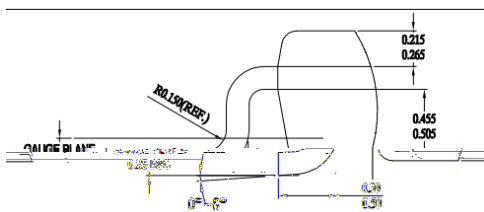
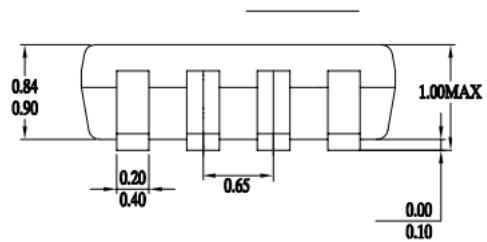
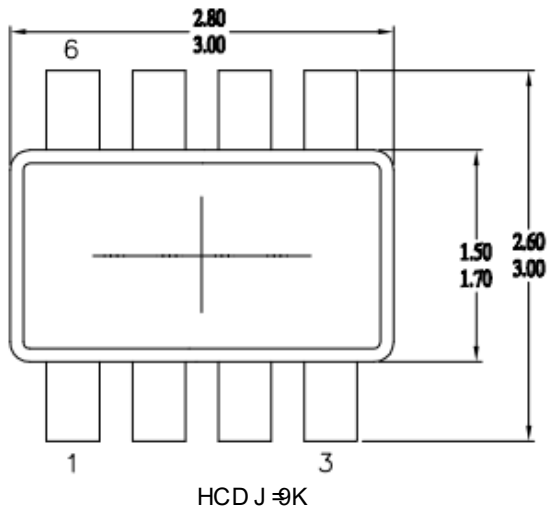


F97CAA9B898 5B8 D5HH9FB

: 7HE: B%)L & , DUWU YCi h bY8 a Ybg cbg

5

% H 9 958 G89 ØK 9HH56 9
 & 5 8A9BGCBG5F9 B A= A9H9FG
 958 7CD 5B5FIMG 5 69 , A= A9H9FGA5L
 (9897 F9: 9F9B79 ØAC &&
) 8F5K B ØBCHHC G75 9



5
% 958 : F5A97+ &) H 7 B9GG %&+AA
& 958 : ~~B~~G GC 89F D 5H98
6CH D57 5 9 9B H 5B8 K ~~H~~ 8C BCH ~~B~~7 I 89 : 5G
(: CFA98 958 G 5 69D 5B5F K ~~H~~ F9GD97HHFC CB9 5BCH 9F K ~~H~~ ~~B~~ % ()
) 7CBHFC ~~B~~ 8=A9BG~~C~~B AA
* I BF9ACJ98 : 5G 69HK 99B 958G D57 5 9 9B8 : 5G G 5
BCH9L7998 % AA : FCA 6CHHCA 6C8MD9F G~~8~~9
+ H 9 DC8 5 GC 5DD MHC : 7HGCH G9F ~~9~~G
, H 9 * 8 DFC8I 7HGK ~~H~~ CI HD~~B~~) A95BG) 8 DFC8I 7HG



