! " #

$ % && & # $'

( ( ) $ % && & # $

| | | |

7DEOH /LVW RI V 2SHUDWLQJ 2UGHU

| $GGUHVV | 0RGXOH 6\PERO | 5HJLVWHU 1DPH | 5HJLVWHU 6\PERO | 1XPEHU RI %LWV | $FFHVV | 1XPEHU RI $FFHVV &\FOHV ,&/. 3&/. | ,&/. 3&/. | 5HODWHG )XQFWLRQ |
|---|---|---|---|---|---|---|---|---|
| K | 00&,) | 5HVSRQVH 5HJLVWHU | &(5(63 | | | 3&/.% | ,&/. | 00&,) |
| &K | 00&,) | 5HVSRQVH 5HJLVWHU | | &(5(63 | | 3&/.% | ,&/. | 00&,) |
| K | 00&,) | $XWRPDWLFDOO\ ,VVXHG &0' | 5HVSRQVH 5HJLVWHU ' | | &(5 | 3&/.% | ,&/. | 00&,) |
| K | 00&,) | 'DWD 5HJLVWHU | | &('$7$ | | 3&/.% | ,&/. | 00&,) |
| &K | 00&,) | %RRW 2SHUDWLRQ 6HWWLQJ 5HJLVWHU | | | &(%2227 | 3&/.% | ,&/. | 00&,) |
| K | 00&,) | ,QWHUUXSW VWDWXV )ODJ 5HJLVWHU | | | &(,17 | 3&/.% | ,&/. | 00&,) |
| K | 00&,) | ,QWHUUXSW UHTXHVW (QDEOH 5HJLVWHU | | | &(,17( | 3&/.% | ,&/. | 00&,) |
| K | 00&,) | 6WDWXV 5HJLVWHU | | &(+267676 | | 3&/.% | ,&/. | 00&,) |
| &K | 00&,) | 6WDWXV 5HJLVWHU | | &(+267676 | | 3&/.% | ,&/. | 00&,) |
| K | 00&,) | 00& 'HWHFWLRQ DQG 3RUW &RQWURO 5HJLVWHU | | | &(3'(7( | 3&/.% | ,&/. | 00&,) |
| K | 00&,) | 6SHFLDO 0RGH 6HWWLQJ 5HJLVWHU ( | | | &($''02' | 3&/.% | ,&/. | 00&,) |
| &K | 00&,) | 9HUVLRQ 5HJLVWHU | | &(9(56,21 | | 3&/.% | ,&/. | 00&,) |
| K | 6 $' | $ ' &RQWURO 5HJLVWHU | | $'&65 | | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' &KDQQHO 6HOHFW 5HJLVWHU $ | | | $'$16$ | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' &RQYHUWHG 9DOXH $GGLWLRQDO $ &KDQQHO 6HOHFW 5HJLVWHU | &RQYHUWHG $ | YHUDJH )XQFWLRQ | | 3&/.% | ,&/. | 6 $' )D |
| &K | 6 $ | $ ' &RQYHUWHG 9DOXH $GGLWLRQDO $ 5HJLVWHU | &RQYHUWHG $ | YHUDJH &RXQW 6HOHF | | 3&/.% | ,&/. | 6 $' )D |
| (K | 6 $' | $ ' &RQWURO ([WHQGHG 5HJLVWHU | | | $'&(5 | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' &RQYHUVLRQ 6WDUW 7ULJJHU 6RXUFH 5HJLVWHU | 5HF | | | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' &KDQQHO 6HOHFW 5HJLVWHU % | | | $'$16% | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' 'DWD 'XSOLFDWLRQ 5HJLVWHU | | | $''%/'5 | 3&/.% | ,&/. | 6 $' )D |
| (K | 6 $' | $ ' 6HOI 'LDJQRVLV 'DWD 5HJLVWHU | | | $'5' | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' 'DWD 5HJLVWHU | | $''5 | | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' 'DWD 5HJLVWHU | | $''5 | | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' 'DWD 5HJLVWHU | | $''5 | | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' 'DWD 5HJLVWHU | | $''5 | | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' 'DWD 5HJLVWHU | | $''5 | | 3&/.% | ,&/. | 6 $' )D |
| $K | 6 $' | $ ' 'DWD 5HJLVWHU | | $''5 | | 3&/.% | ,&/. | 6 $' )D |
| &K | 6 $ | $ ' 'DWD 5HJLVWHU | | $''5 | | 3&/.% | ,&/. | 6 $' )D |
| (K | 6 $' | $ ' 'DWD 5HJLVWHU | | $''5 | | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' &RQYHUVLRQ 7LPH 6HWWLQJ 5HJLVWHU | $'&RQYHUVLRQ 5HJLVWHU | | | 3&/.% | ,&/. | 6 $' )D |
| K | 6 $' | $ ' 6DPSOH DQG +ROG &RQWURO 5HJLVWHU | | | $'6+& | 3&/.% | ,&/. | 6 $' )D |
| (K | 6 $' | $ ' &RQYHUVLRQ 7LPH 6HWWLQJ 5HJLVWHU | | | $'6$0 | 3&/.% | ,&/. | 6 $' )D |
| $K | 6 $' | $ ' 'LVFRQQHFWLRQ 'HWHFWLRQ &RQWURO 5HJLVWHU | &RQWURO | | | 3&/.% | ,&/. | 6 $' )D |
| &K | 6 $ | $ ' 6DPSOH DQG +ROG 2SHUDWLRQ 6HWWLQJ 5HJLVWHU | 6DPSOH 6HOHFW | | | 3&/.% | ,&/. | 6 $' )D |

7DEOH /LVW RI V 2 $ G G U H V V 0 R G X O H 5 H J L V W H U 2 U G H U

| $GGUHVV | 0RGXOH 6\PERO | 5HJLVWHU 1DPH | 5HJLVWHU 6\PERO | 1XPEHU RI %LWV | $FFHVV 6L]H | 1XPEHU RI $FFHVV &\FOHV ,&/. 3&/. | ,&/. 3&/. | 5HODWHG )XQFWLRQ |
|---|---|---|---|---|---|---|---|---|
| ( K | */&'& | *DPPD &RUUHFWLRQ * %ORFN 5HJLVWHU | +*&%9(1 | 8 | SGDWH &RQWURO | 3&/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ %ORFN )XQFWLRQ 6HOHFW 5HJLVWHU | %)6(/5(* | 6 | ZLWFK | 3&/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ * 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&&/.$ | ,&/. | */&'& |
| ( &K | */&'& | *DPPD &RUUHFWLRQ * 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&&/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ * 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&&/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ * 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&&/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ * 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&&/.$ | ,&/. | */&'& |
| ( &K | */&'& | *DPPD &RUUHFWLRQ * 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&&/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ * 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&&/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ * 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&&/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ * $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&5/.$ | ,&/. | */&'& |
| ( &K | */&'& | *DPPD &RUUHFWLRQ * $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&5/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ * $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&5/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ * $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&5/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ * $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&5/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ % %ORFN 5HJLVWHU | +*%1(1 | 8 | SGDWH &RQWURO | 3&/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ % 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&%/.$ | ,&/. | */&'& |
| ( &K | */&'& | *DPPD &RUUHFWLRQ % 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&%/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ % 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&%/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ % 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&%/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ % 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&%/.$ | ,&/. | */&'& |
| ( &K | */&'& | *DPPD &RUUHFWLRQ % 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&%/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ % 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&%/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ % 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&%/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ % $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&%/$5 | ,&/. | */&'& |
| ( &K | */&'& | *DPPD &RUUHFWLRQ % $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&%/$5 | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ % $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&%/$5 | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ % $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&%/$5 | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ % $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&%/$5 | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ 5 %ORFN 5HJLVWHU | +*5%1(1 | 8 | SGDWH &RQWURO | 3&/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ 5 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&5/.$ | ,&/. | */&'& |
| ( &K | */&'& | *DPPD &RUUHFWLRQ 5 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&5/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ 5 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&5/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ 5 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&5/.$ | ,&/. | */&'& |
| ( K | */&'& | *DPPD &RUUHFWLRQ 5 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&5/.$ | ,&/. | */&'& |
| ( &K | */&'& | *DPPD &RUUHFWLRQ 5 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&5/.$ | ,&/. | */&'& |
| ( $ K | */&'& | *DPPD &RUUHFWLRQ 5 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&5/.$ | ,&/. | */&'& |
| ( $ K | */&'& | *DPPD &RUUHFWLRQ 5 7DEOH 6HOHFW 5HJLVWHU | *7%/(1 | 7 | | *$&5/.$ | ,&/. | */&'& |
| ( $ K | */&'& | *DPPD &RUUHFWLRQ 5 $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&%/$5 | ,&/. | */&'& |
| ( $&K | */&'& | *DPPD &RUUHFWLRQ 5 $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&%/$5 | ,&/. | */&'& |
| ( % K | */&'& | *DPPD &RUUHFWLRQ 5 $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&%/$5 | ,&/. | */&'& |
| ( % K | */&'& | *DPPD &RUUHFWLRQ 5 $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&%/$5 | ,&/. | */&'& |
| ( % K | */&'& | *DPPD &RUUHFWLRQ 5 $UHD 6HOHFW 5HJLVWHU | *$5(1 | 5 | | *$&%/$5 | ,&/. | */&'& |
| ( & K | */&'& | 2XWSXW &RQWURO %ORFN 5HJLVWHU | 2872&7/ | 18 | SGDWH &RQWURO | 3&/.$ | ,&/. | */&'& |
| ( & K | */&'& | 2XWSXW ,QWHUIDFH 5HJLVWHU | | | 2872(7 | 3&/.$ | ,&/. | */&'& |
| ( & K | */&'& | %ULJKWQHVV $GMXVWPHQW 5HJLVWHU | | | | %5,*+7 3&/.$ | ,&/. | */&'& |
| ( &&K | */&'& | %ULJKWQHVV $GMXVWPHQW 5HJLVWHU | | | | %5,*+7 3&/.$ | ,&/. | */&'& |

1RWH 7KH ORZ SRZHU [QUIXRQWLRQ LV HQDEOHG@DQGE'((3&8
1RWH 5HIHUHQFH YDOXH

7DEOH '& &KDUDFWHULVWLFV 3URGXFW IRU 86%\WR&RQWURO[ PHPRU\

&RQGLWLRQV 9&& $9&&&&B86% 9WR "95()+ 9" $9&&
966 $966 $966 95()/ 966B86% 9

7D 7RS

| | | | | | ' YHUVLRQ | | * YHUVLRQ | | 8QLW | 7HVW &RQGLWLRQ |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ,WHP | | 6\PERO | 7\S | 0D[ | 7\S | 0D[ | | |
| 6XSSO\ FXUUHQW | +LJK VSHHG RSHUDWLQJ PRGH | 0D[ | | ,&& | [2] | | [2] | | P$ | ,&/. 0+] |
| | | 1RUPDO 3HULSKHUDO IXQFWLRQV DQG&38 FRUH RSHUDWLQJ | | | | | | | | 3&/.$ 0+] |
| | | | 3HULSKHUDO IXQFWLRQV DUH RSHUDWLQJ | | [2] | | [2] | | | 3&/.% 0+] |
| | | &RUH 0DUN | 3HULSKHUDO IXQFWLRQV DUH RSHUDWLQJ | | [2] | | [2] | | | 3&/.& 0+] |
| | | | | | | | | | | 3&/.' 0+] |
| | | 6OHHS PRGH 7KH FORFN VLJQDO WR SHULSKHUDO PRGXOHV LV VXSSOLHG | | | [2] | | [2] | | | 3&/. 0+] |
| | | $OO PRGXOH FORFN VWRS PRGH UHIHUHQFH YDOXH | | | | | | | | %&/. 0+] |
| | | ,QFUHDVHG 5HDG&RQ RSHUDWLQJ PRGH | 5HDGLQJ IURP WKH FRGH IODVK PHPRU\ ZKLOH WKH GDWD IODVK PHPRU\ LV EHLQJ SURJUDPPHG | | | [2] | | [2] | | %&/. 0+] |
| | | | 5HDGLQJ IURP WKH FRGH IODVK PHPRU\ ZKLOH WKH FRGH IODVK PHPRU\ LV EHLQJ SURJUDPPHG | | | [2] | | [2] | | %&/. SLQ 0+] |
| | | ,QFUHDVHG E\ 7UXVWHG 6HFXUH ,3 RSHUDWLQJ | | | | | | [2] | [2] | |
| | /RZ VSHHG RSHUDWLQJ PRGH | /RZ VSHHG RSHUDWLQJ PRGH WR SHULSKHUDO PRGXOHV LV VWRSSHG | | 6&/6 | [2] | | [2] | | | $OO FORFNV 0+] |
| | /RZ VSHHG RSHUDWLQJ PRGH | /RZ VSHHG RSHUDWLQJ PRGH WR SHULSKHUDO PRGXOHV LV VWRSSHG | | 6&/6 | [2] | | [2] | | | $OO FORFNV N+] |
| | 6RIWZDUH VWDQGE\ PRGH | | | | | | | | | |
| 'HHS VRIWZDUH VWDQGE\ PRGH | | 3RZHU VXSSOLHG WR VWDQGE\ 5$0 DQG 86% UHVXPH GHWHFWLQJ XQLW 86% RQO\ | | | | | | | $ | |
| | | 3RZHU QRW VXSSOLHG WR VWDQGE\ 5$0 DQG 86% UHVXPH GHWHFWLQJ XQLW 86% RQO\ | 3RZHU RQ UHVHW FLUFXLW DQG ORZ VSHHG RSHUDWLQJ IXQFWLRQ HQDEOHG | | | | | | | |
| | | | 3RZHU RQ UHVHW FLUFXLW DQG ORZ VSHHG RSHUDWLQJ IXQFWLRQ HQDEOHG | | | | | | | |
| | | ,QFUHDVHG E\ 57& RSHUDWLQJ | :KHQ D FU\VWDO LV LQ XVH | [2] | | | | [2] | | |
| | | | :KHQ D VWDQGDUG FU\VWDO LV LQ XVH | | | | | [2] | | |
| | | 57& RSHUDWLQJ IXQFWLRQ 9&& LV RII ZLWKRXW EDWWHU\ EDFNXS IXQFWLRQ RQO\ WKH 57& DQG VXE FORFN RSFLOODWRU RSHUDWH | :KHQ D FU\VWDO RVFLOODWRU IRU ORZ VSHHG FORFN ORDGV LV LQ XVH | [2] | | | | [2] | | 9%$77 9 9&& 9 |
| | | | | | [2] | | [2] | | | 9%$77 9 9&& 9 |
| | | | :KHQ D FU\VWDO RVFLOODWRU IRU VWDQGDUG FORFN ORDGV LV LQ XVH | [2] | | | | [2] | | 9%$77 9 9&& 9 |
| | | | | | [2] | | [2] | | | 9%$77 9 9&& 9 |
| | | ,QXVK FXUUHQW ,QUXVK FXUUHQW UHWXUQLQJ IURP GHHS VRIWZDUH VWDQGE\ PRGH | | ,586+ | [2] | | [2] | | P$ | |
| | | | (QHUJ\ RI LQXVK FXUUHQW | ,586+ | [2] | | [2] | | & | |

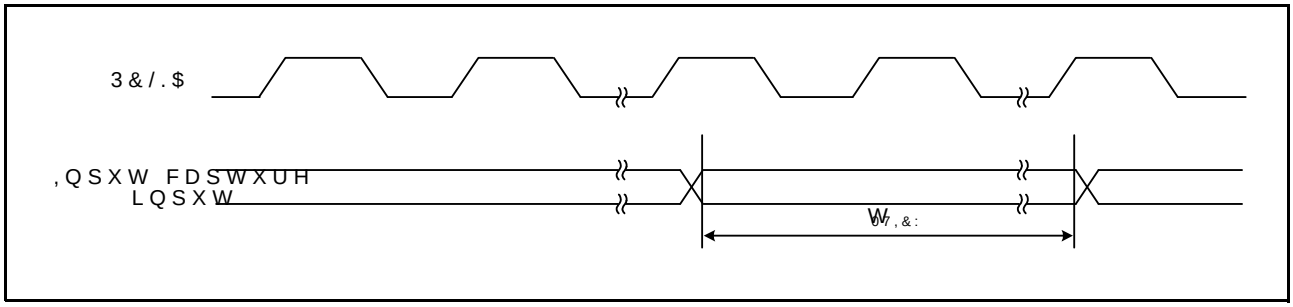
1RWH 6XSSO\ FXUUHQW YDOXHV DUH&ZLWKRXW SRUW RXWSXW FXUUHQW IRU WKH 0&8
1RWH 6XSSO\ RI WKH FORFN VLJQDO WR HDFK SHULSKHUDO PRGXOH LV VWRS
1RWH &&GHSHQGV RQ I ,&/. DV IROORZV ,&/. 3&%&/3&%&%. 3&/&3&/.' ZKHQ (;7$/ 0+]
>' YHUVLRQ@
&&0D[ î I PDLQ RSHUDWLQJ IUHT VHHG RSHUDWLQJ PRGH
&&7\S î I ,&/PD[0+]QRUPDO RSHUDWLQJ LQ KLJK VHHG RSHUDWLQJ PRGH
&&7\S î I ORZ VHHG RSHUDWLQJ PRGH
&&0D[ î I VOHHS PRGH
>* YHUVLRQ@

7DEOH 078 7LPLQJ

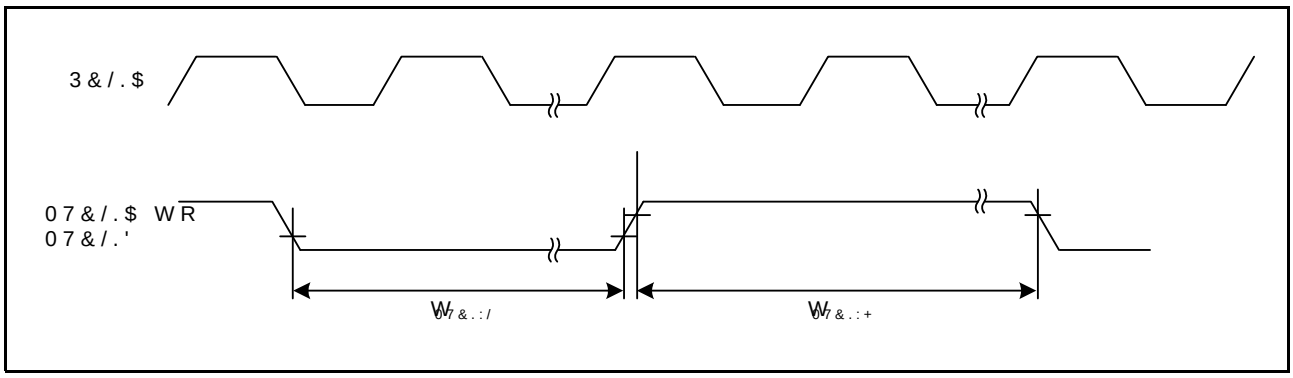
&RQGLWLRQV 9&&$9&& 9&& 9&&B86% 9 WR 9 9 ” 95()+ ” $9&&
966 $966 $966 95()/ 966B86% 9
3&/.$ WR 0+] 3&/.% WR 0+] 7
2XWSXW ORDG FRQGLWLRQV &/ 3) 5/ .Ω 9 9&& î & S)
+LJK GULYH RXWSXW LV VHOHFWHG LQ WKH GULYLQ DELOLW\ FRQWURO UH

| ,WHP | | | 6\PERO | 0LQ | 0D[ | 8QLW | 7HVW &RQGLWLRQV |
|---|---|---|---|---|---|---|---|
| 078 | ,QSXW FDSWXUH LQSXW KLJK ZLGWK | 6LQJOH HGJH VHWWLQJ | W7,&: | | 2 | W3$F\F | )LJXUH |
| | | %RWK HGJH VHWWLQJ | | | 2 | | |
| | 7LPHU FORFN SXOVH ZLGWK | 6LQJOH HGJH VHWWLQJ | W7&.:+ W7&.:/ | | 2 | W3$F\F | )LJXUH |
| | | %RWK HGJH VHWWLQJ | | | 2 | | |
| | | 3KDVH FRXQWLQJ PRGH | | | 2 | | |

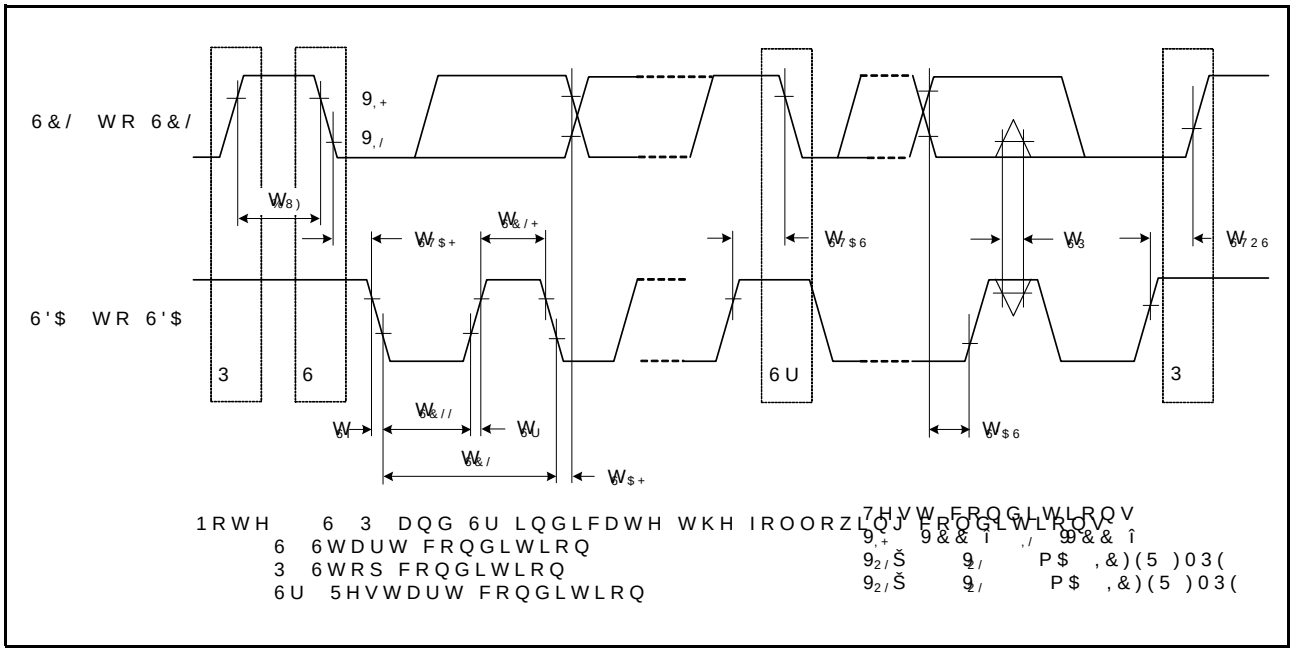
1RWH W3&/.$ F\FOH




)LJXUH 078 ,QSXW &DSWXUH ,QSXW 7LPLQJ



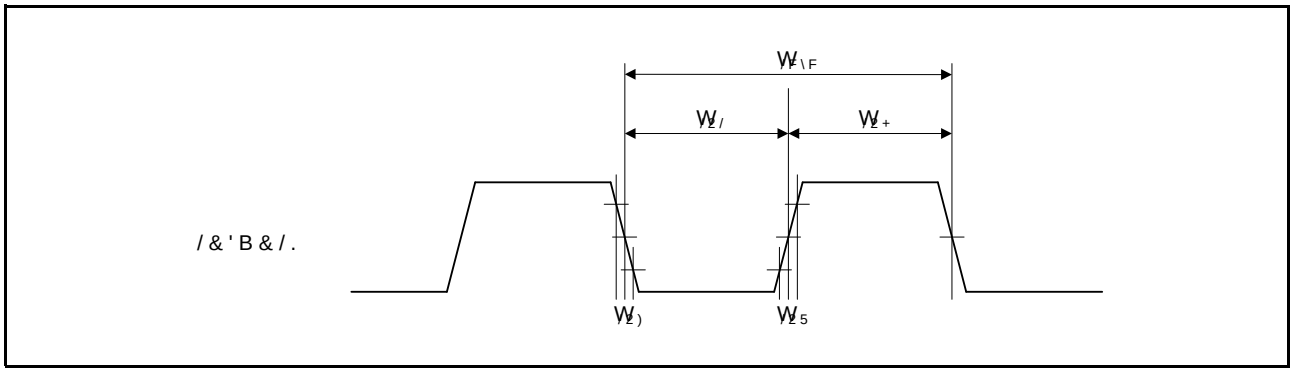

)LJXUH 078 &ORFN ,QSXW 7LPLQJ



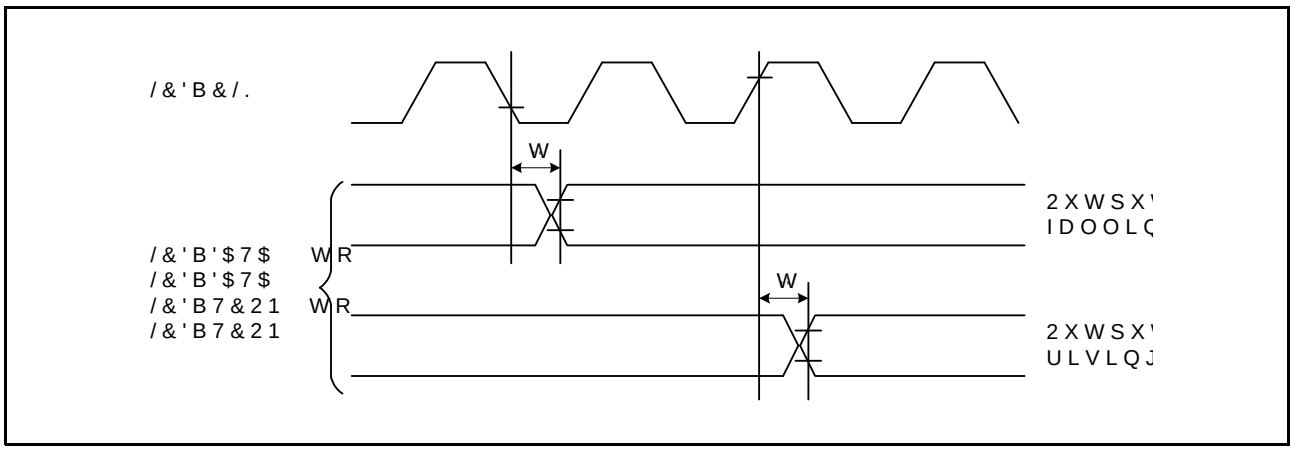

1RWH 6 3 DQG 6U LQGLFDWH WKH IROORZLQJ FRQGLWLRQV
6 6WDUW FRQGLWLRQ
3 6WRS FRQGLWLRQ
6U 5HVWDUW FRQGLWLRQ

7HVW FRQGLWLRQV
9,+ 9&& î ,/ 9&& î
92/Š 92/ P$ ,&)(5 )03(
92/Š 92/ P$ ,&)(5 )03(

)LJXUH 5,,& %XV ,QWHUIDFH ,QSXW 2XWSXW ,QWHUIDFH 7LPLQJ




)LJXUH /&'B&/. 2XWSXW 7LPLQJ




)LJXUH /&' 2XWSXW 'DWD 7LPLQJ

7DEOH %LW $&RQYHUWHU &KDUDFWHULVWLFV

&RQGLWLRQV 9&&$9&& 9&&B86% 9 WR 9 9 ” 95()+ ” $9&&
966 $966 $966 95()/ 966B86% 9
3&/.% 3&/.' 0+] WR 0+] 77

| ,WHP | | 0LQ | 7\S | 0D[ | 8QLW | 7HVW &RQGLWLRQV |
|---|---|---|---|---|---|---|
| 5HVROXWLRQ | | | [2] | | %LW | |
| &RQYHUVLRQ WLPH 2SHUDWLRQ DW 3&/. 0+] | 1RPLQDO VLJQDO VRXUFH | | [2] | | V | 6DPSOLQJ LQ VWDWHV $'6$0 6$0 |
| &RQYHUVLRQ WLPH 2SHUDWLRQ DW 3&/. 0+] | | | [2] | [2] | V | 6DPSOLQJ LQ VWDWHV $'6$0 6$0 |
| $QDORJ LQSXW FDSDFLWDQFH | | | | [2] | [2] | S) |
| 2IIVHW HUURU | | | [2] | “ | “ | /6% |
| )XOO VFDOH HUURU | | | [2] | “ | “ | /6% |
| 4XDQWL]DWLRQ HUURU | | | | [2] | “ | [2] /6% |
| $EVROXWH DFFXUDF\ | | | [2] | “ | “ | /6% |
| '1/ GLIIHUHQWLDO QRQOLQHDULW\ HUURU 2SHUDWLRQ DW 3&/. 0+] | | | | “ | | /6% |
| '1/ GLIIHUHQWLDO QRQOLQHDULW\ HUURU 2SHUDWLRQ DW 3&/. 0+] | | | | “ | | /6% |
| ,1/ LQWHJUDO QRQOLQHDULW\ HUURU 2SHUDWLRQ DW 3&/. 0+] | | | “ | “ | | /6% |
| ,1/ LQWHJUDO QRQOLQHDULW\ HUURU 2SHUDWLRQ DW 3&/. 0+] | | | “ | “ | | /6% |

1RWH 7KH DERYH VSHFLILFDWLRQV DSSO\ RQO\ WR WKH QRUPDO RSHUDWLQJ WHPSHUDWXUH UDQJH $ ' FRQYHUVLRQ
1RWH 7KH FRQYHUVLRQ WLPH LQFOXGHV WKH VDPSOLQJ WLPH
1RWH 7KH YDOXH LV VSHFLILHG IRU WKH VDPSOLQJ WLPH

7DEOH $ ' ,QWHUQDO 5HIHUHQFH &KDUDFWHULVWLFV

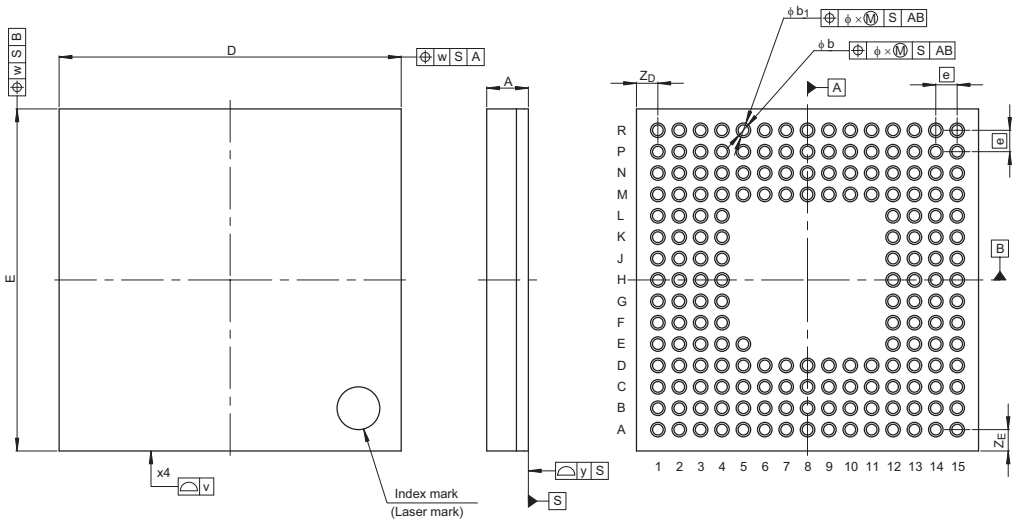
&RQGLWLRQV 9&&$9&& 9&&B86% 9 WR 9 9 ” 95()+ ” $9&&
966 $966 $966 95()/ 966B86% 9
3&/.% 3&/.' 0+] 77

| ,WHP | 0LQ | 7\S | 0D[ | 8QLW | 7HVW &RQGLWLRQV |
|---|---|---|---|---|---|
| $ ' LQWHUQDO UHIHUHQFH YROWDJH | | | | 9 | |

# $SSHQGL[ 3DFNDJH 'LPHQVLRQV

,QIRUPDWLRQ RQ WKH ODWHVW GDWDVKHHW IRU WKLV SDFNDJH LV VKRZQ EHORZ 5HIHU WR WKH PDQXDO IRU WKH GUDZLQJ
(OHFWURQLFV &RUSRUDWLRQ ZHEVLWH

| JEITA Package Code | RENESAS Code | Previous Code | MASS[Typ.] |
|---|---|---|---|
| P-TFLGA177-8x8-0.50 | PTLG0177KA-A | 177F0E-A | 0.2g |




| Reference Symbol | Dimension in Millimeters | | |
|---|---|---|---|
| | Min | Nom | Max |
| D | — | 8.0 | — |
| E | — | 8.0 | — |
| v | — | — | 0.15 |
| w | — | — | 0.20 |
| A | — | — | 1.05 |
| e | — | 0.5 | — |
| b | 0.21 | 0.25 | 0.29 |
| $b_1$ | 0.29 | 0.34 | 0.39 |
| x | — | — | 0.08 |
| y | — | — | 0.08 |
| $Z_D$ | — | 0.5 | — |
| $Z_E$ | — | 0.5 | — |

)LJXUH $ 3LQ 7)/*$ 37/* .$ $