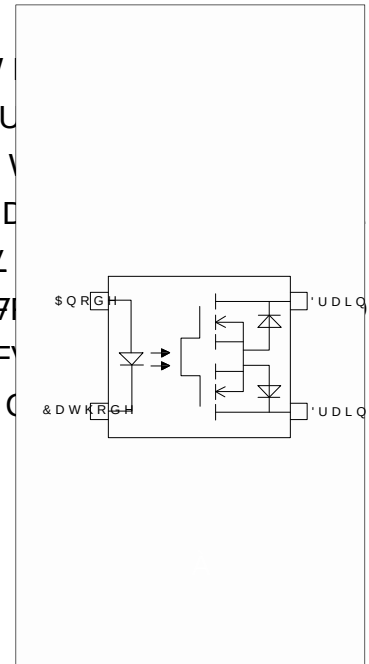




7KH SURGXFWV DUHODSVQ 7KSWGHDFH
VPDOO RXWODQHQRQRWRWUHOD\ VXLW
DVVHPEO\ ,W FRQVLVWV RI DQ LQIU
SKRWR 026)(7 DQG LV3KRXVSHDFNQJH ,V
D YHU\ VPDOO RQ UHVLVWDQFH DQG ID
KLJK IUHTXHQF\ VLJQDQW PDUNVQILWV
LQ KLJK VSHHG WHVWHVH7XHGSHORGX
WHVW HTXLSPHQW KLWVSHHGGRJKF
WHVWHUV DQG PHDVXULQJ LQVWUXPH



DFH PH
OO\ FR
WFKLQ
R
WL

,VRODWLRQ YROMDJH
2SHUDWLQJ WHPSHUDWXUH WR f &
5(\$+ 5R+6 FRPSOLDQFH
+%0 + \$ 00 0 &'0 &
&4& DSSURYHG
9'(DSSURYHG
8/ DSSURYHG

7HPSHUDWXUH f &

Parameter		Symbol	Value	Unit
,QSXW	)RUZDUG &XUUHQW)			
	3HDN)RUZDUG &XUUHQW		7	\$
	5HYHUVH 9ROWDJH 95			
	,QSXW 3RZHU 'LVVLSDWLRQ		3	
'HWHFWRU	2II VWDWH 2XWSXW 7HUPLODO 9ROWDJH 92))			
	2Q VWDWH &XUUHQW 21			
	2Q VWDWH &XUUHQW 21SXOVHG ,			
,VRODWLRQ 9ROWDJH		9LVR	8	9UPV
2SHUDWLQJ 7HPSHUDWXUH		7RSU	a	
-XQFWLRQ 7HPSHUDWXUH		7M		
6WRUDJH 7HPSHUDWXUH		7VWJ	a	

6ROGHULQJ 7HPSHUDWXUH	7VRO		
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-LH-LH 0LFURHOHFWURQLFV &R /WG		2 &	0	\$	\$
2SWR &RXSOHU		026	\$ 12	070 P\$	1 RQH 7 5 7
			9)) 9	\$ 21 \$	3621

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FIG.1: 0D[\$OORZDEOH /(')RUZDUG \$PELHQW 7HPSHUDWXUH

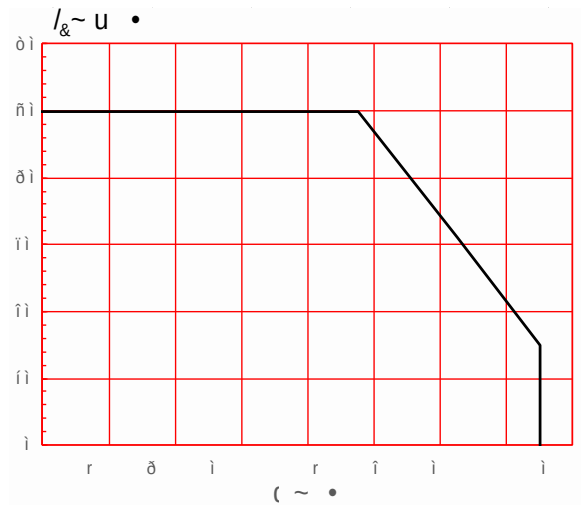


FIG.2: 2QVWDWH &XUUHQW YV \$PELHQW 7HPSHUDWXUH

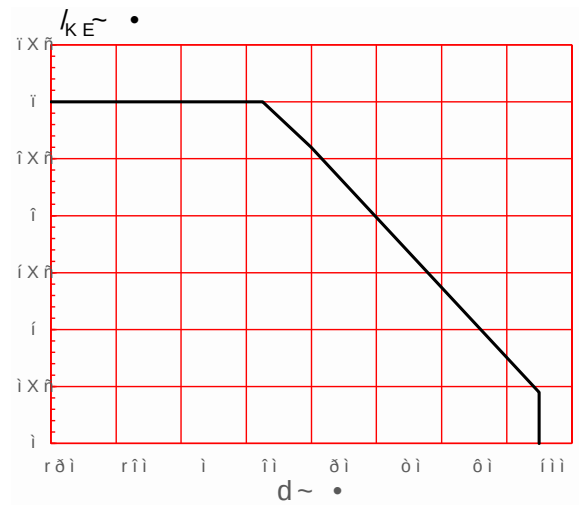


FIG.3: /(')RUZDUG &XUUHQW YV /(' '9ROWDJH

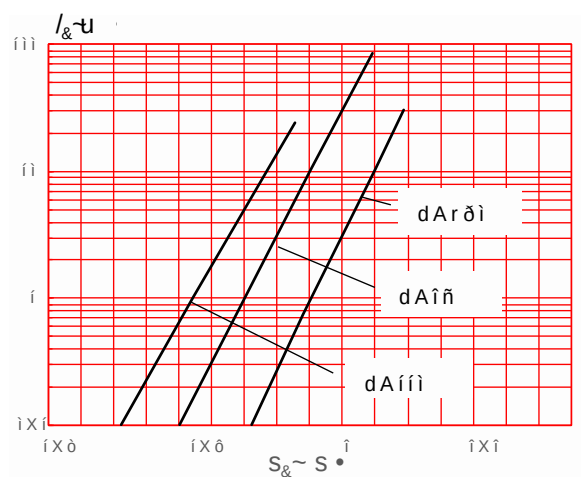


FIG.4: 2QVWDWH &XUUHQW YV 2QV

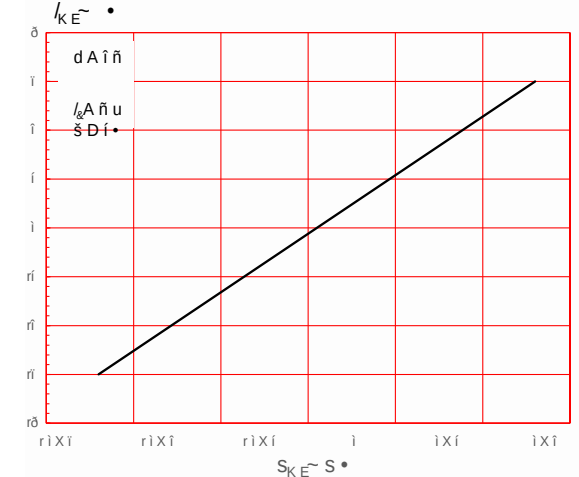


FIG.5: 2Q 5HVLVWDQRUEHHQW 7HPSHUDWXUH

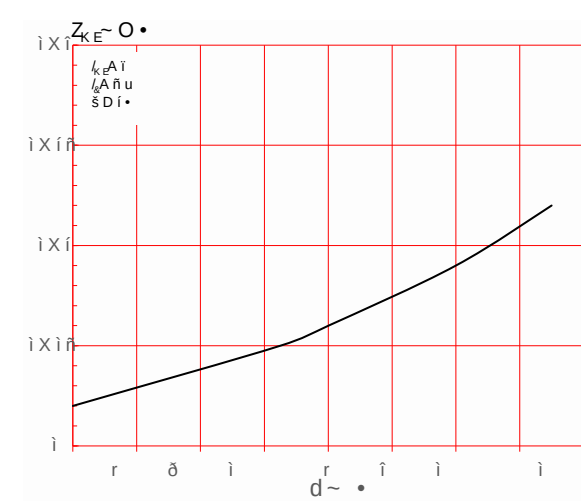


FIG.6: 2QVWDWH &XUUHQW YV \$PELHQW 7HPSHUDWXUH

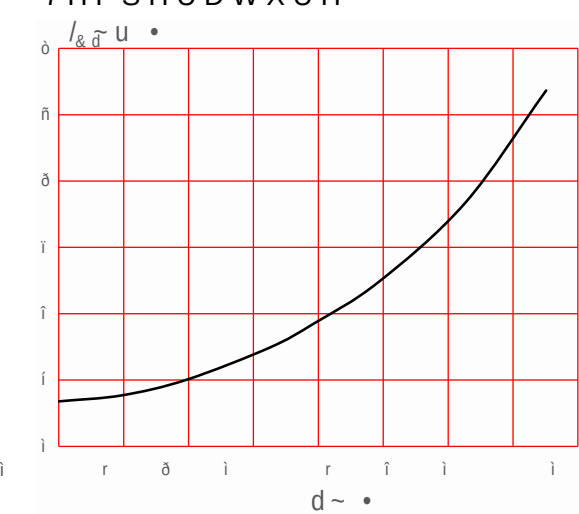


FIG.7: $I_{AS} \sim U_{DS}$ YV $I_{AS} \sim U_{DS}$ &XUUHQW V FIG.8: $I_{AS} \sim U_{DS}$ YV $I_{AS} \sim U_{DS}$ 7HPSHUD

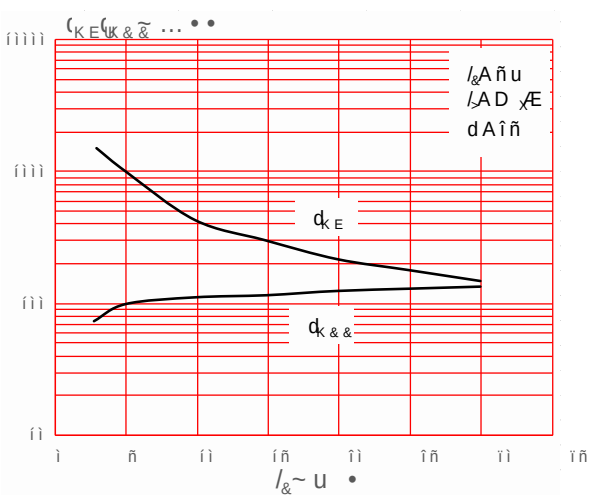
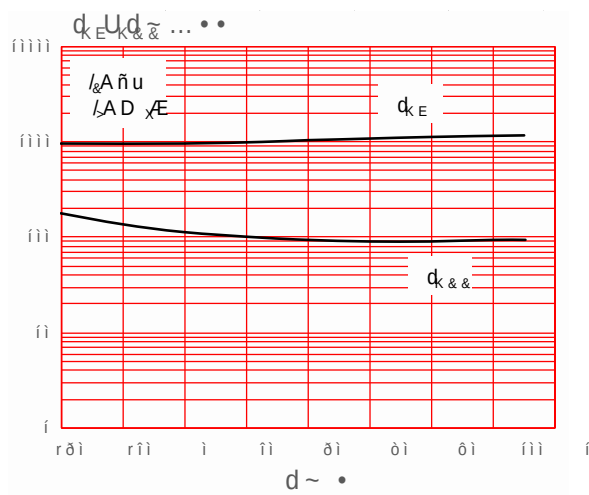


FIG.9: $I_{AS} \sim U_{DS}$ &XUUHQW YV $I_{AS} \sim U_{DS}$ FIG.10: $I_{AS} \sim U_{DS}$ &XUUHQW YV $I_{AS} \sim U_{DS}$ 7HPSHUDWXUH

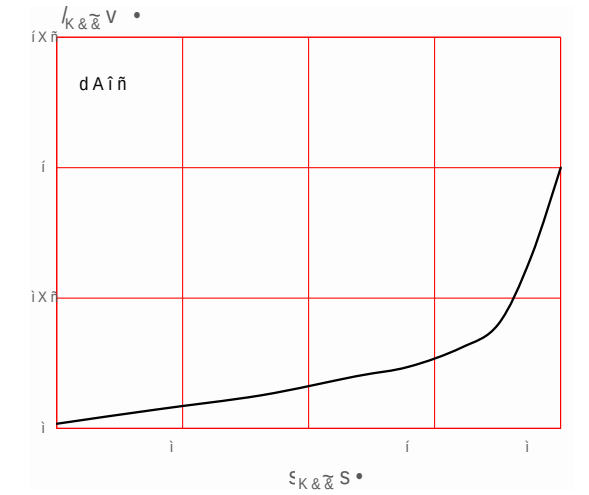
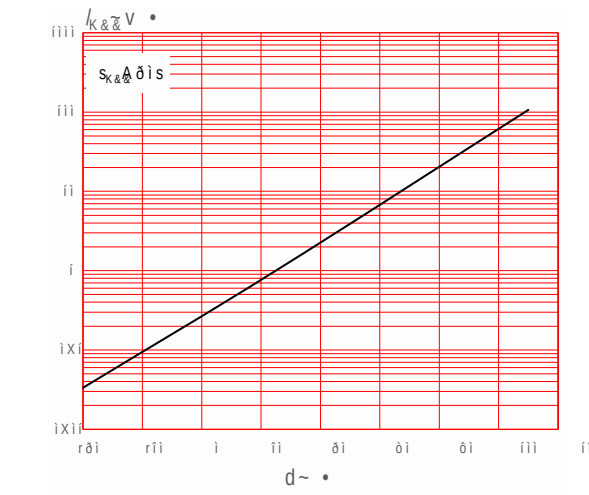
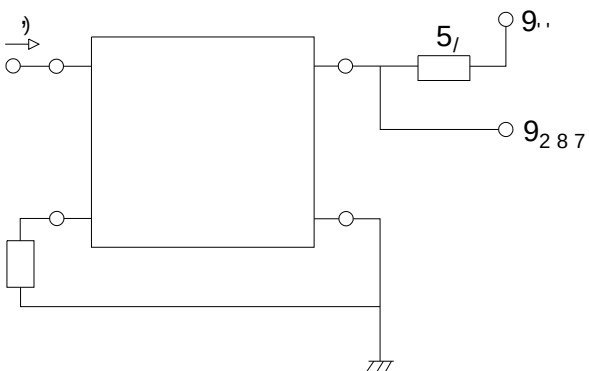
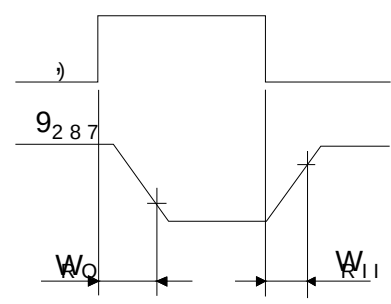
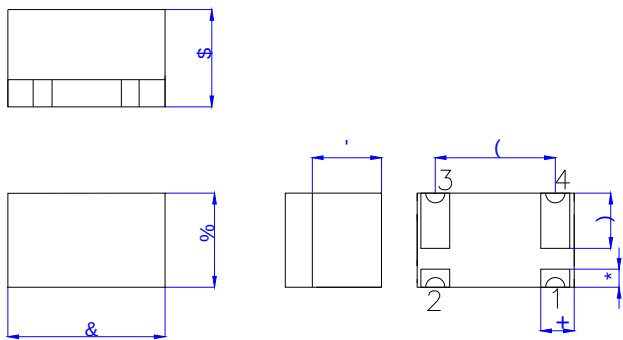
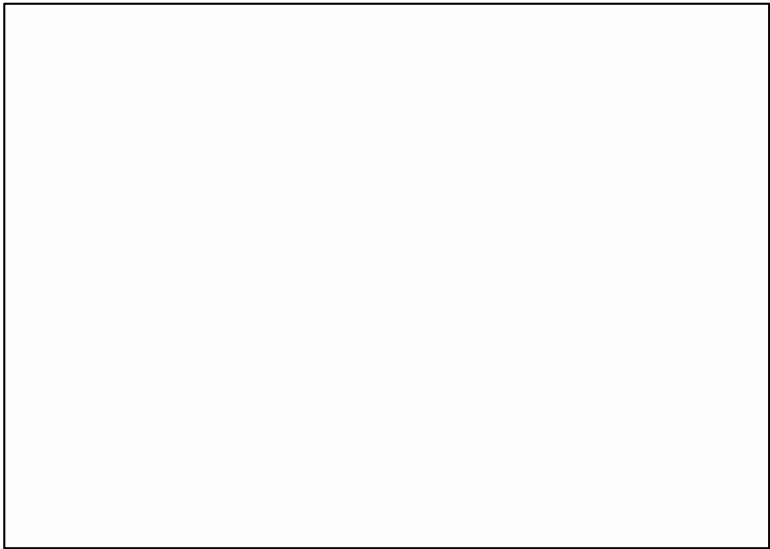


Fig.11: Switching Time Test Circuit and Waveform





5 H I	' L P H Q V L R Q V					
	0 L O O L P H W H U V			, Q F K H V		
	0 L Q	7 \ S	0 D [	0 L Q	7 \ S	0 D [
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Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
7HPSHUDWXUH 0LQ	7VPLQ	
7HPSHUDWXUH 0D[	7VPD[	
7LPH WV IURP 7VPLQ WR 7VPD[		VHFRQGV
5DPS XS 5DWH W/ WR W3	VHFRQG PD[	VHFRQG PD[
/LTXLGXV 7HPSHUDWXUH 7/		
7LPH W/ 0DLQWDLQHG \$ERYH 7/		VHFRQGV
3HDN %RG\ 3DFNDJH	7HPSHUDWXUH	
7LPH W3 ZLWKLQ	VHFRQGV	VHFRQGV
5DPS GRZQ 5DWH 73 WR 7/	VHFRQG	VHFRQG
7LPH WR 3HDN 7HPSHUDWXUH	PLQXWPLQXW HV PD[	

1RWH

5HIORZ VROGHULQJ LV UHFRPPHQGHG/ DWRZQH QHPSHWDWWDQWQW
 \$YRLG GLUHFV FRQWHDVSRPHQZDQVWRUDFRU H[FHHGLQJ LWV PD
 VWRUDJH WHPSHUDWXUH
 \$SSOLFDWLRQ RKHUSRYXERGRQWLSOHGDDWHG WHPSHUDWXUHV ,QV
 VFHQDULRV DQHPSVOLHQWRHFFHHG 1
 (QVXUH WKH FRPSRQHGW KDV FRROHG WRDFHFWLQWZMXPSHWDWWDQWQW
 PDQXIDFWXULQJ VWHSV
 7KH FRPSRQHGW KDV BQKHODUZKHQVWRDQGHGKFRQGLWLRQV
 5HFRPPHQG VWRUDJH 7HPS a f &
 5HFRPPHQG VWRUDJH KXPLGLW\
 06/ OHYHO 06/

,QIRUPDWLRQ IXUQXPHQW ILQWKOLHGRHG WR EH DFFXUDWH
 -LDQJYX -LH-LH 0LRRHWHGWDVROLFFHVQLVUHVSRQVHLERQVHT
 RI XVH ZLWKRXW FRQVLGHUDWLRQ IRG MWFKQLQIRUPDWLRQ
 LQ WKLV GRFXPHQWLDQJYXZLWHRXWQRWLH DSDUW IURP V
 VLJQH -LDQJYXOLHVLZLWKPWKH DJUHHPHQW
 3URGXFVV DQG LQIRUPDWLRQ SURYLGHGLQJHQRVVRGSDXPH
 -LDQJYX -LH-LH DVVXPHLOQW\URVSDQVLQIULQJHPPHQW RI RW
 ZKLFK PD\ UHVXOW IURP WKH XVH RI VXLV SURFXPHQWVQXSH
 DQG UHSODFHV DOO LQIRUPDWLRQ SUHYLRXVO\ VXSSOLHG
 LV D UHJLVWHUHGDQJYXGLHUNRUFULRHWGFWURQLFV &R
 &RS\UKJKW -LDQJYX -LH-LH OLVRHOFHFWUSQDGLJKWV UHVH