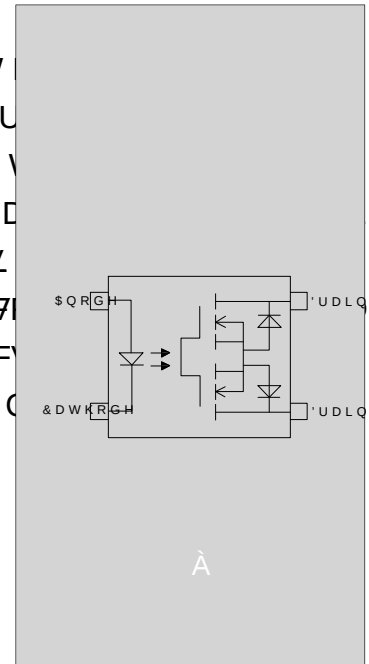




7KH SURGXFWV DUHODSVQ 7KSWGHDFH
VPDOO RXWODQHQRQRWRRUHOD\ VXLW
DVVHPEO\B,W FRQVLVWV RI DQ LQIUUD
SKRWR 026)(7 DQG LV3KRXVSHDFNQJHB,V
D YHU\ VPDOO RQ UHVLVWDQFH DQG ID
KLJK IUHTXHQF\ VLJQDQW PDUNVQILWV
LQ KLJK VSHHG WHVWHWV7XHGSHORGXV
WHVW HTXLSPHQW KLWVSHHGGRJKF
WHVWHUV DQG PHDVXULQJ LQVWUXPHQ



DFH PF
OO\ FF
WFKLQ
R
WL

,VRODWLRQYRMDJH
2SHUDWLQJ WHPSHUDWXU & WR &
5(\$+ 5R+6 FRPSOLDQFH
+%0 + \$ 00 0 &'0 &
&4& DSSURYHG
9'(DSSURYHG
8/ DSSURYHG

7HPSHUDWXUH D&

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



6ROGHULQJ 7HPSHUDWXUH	7VRO		
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-		2 &	0	\$	\$
-LH-LH 0LFURHOHFWURQLFV &RB /WGB					1 RQH 7
2SWR &RXSOHU					5 7
		026			3 6 2 1
			\$ 12		070 P\$
			9)) 9	\$ 21 \$	

W ^KE ð	í ñ ì hv] š • IZ o

FIG.1: 0D[B\$OORZDEOH /(')RUZDUG &XUHHQW YVB\$PEL\$PELHQW 7HPSHUDWXUH

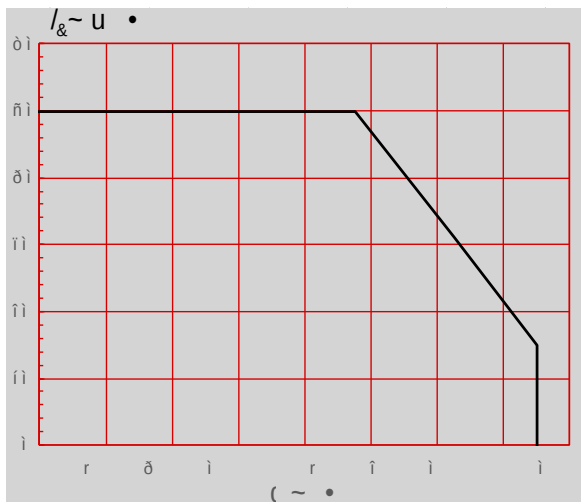


FIG.2: 2QVWYWBH &XUHHQW YVB\$PEL\$PELHQW 7HPSHUDWXUH

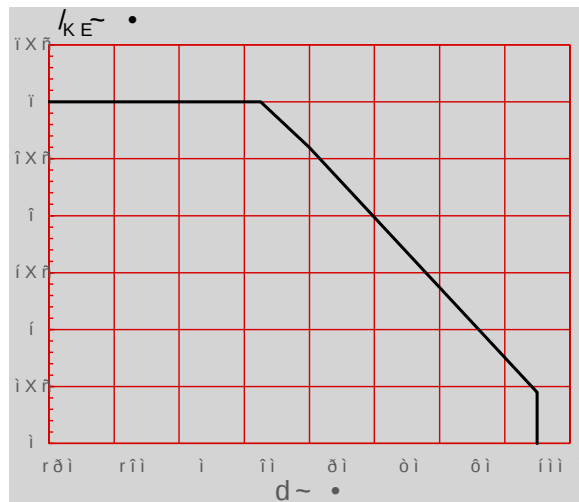


FIG.3: /(')RUZDUG &XUHHQW YVB /(' 'FIG.4: 2QVWYWBH &XUHHQW YVB 2Q V 9ROWDJH

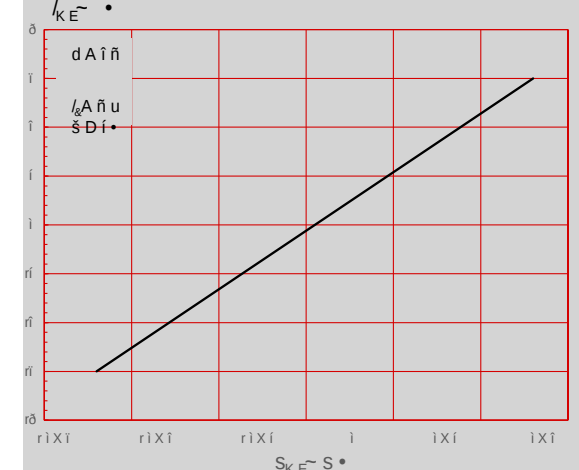
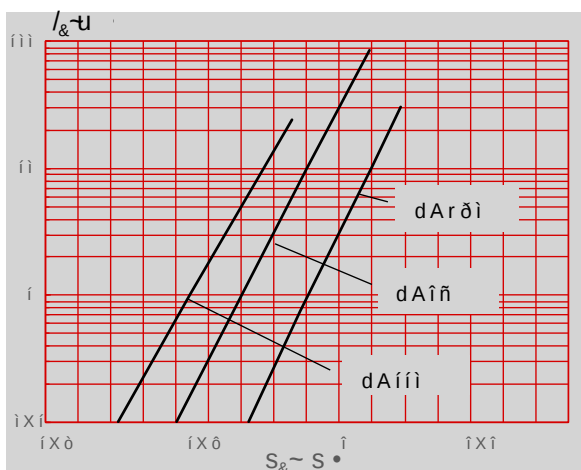


FIG.5: 2Q 5HVLVWYWBH &XUHHQW YVB\$PEL\$PELHQW 7HPSHUDWXUH

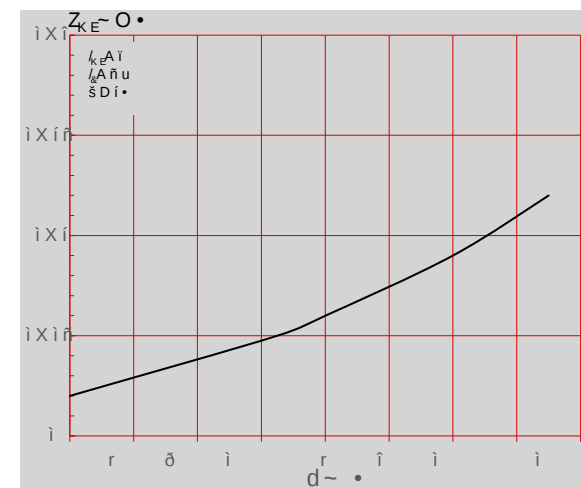


FIG.6: 2QVWYWBH &XUHHQW YVB\$PEL\$PELHQW 7HPSHUDWXUH

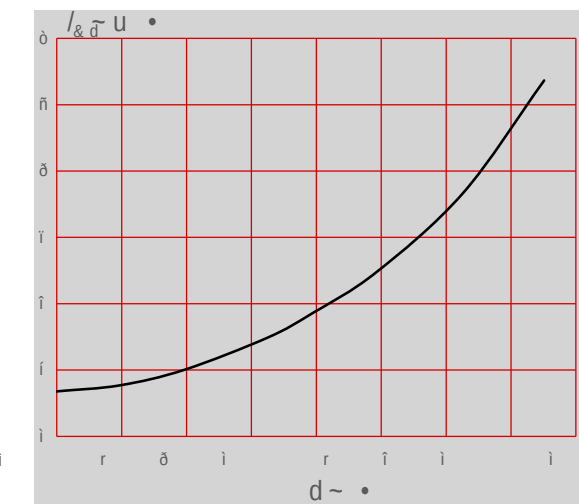


FIG.7: $7_{21} \bar{z}) YVB / (') RUZDUG \& XU UHQW$ FIG.8: $7_{21} \bar{z}) YVB \$ PELHQW 7HPSHUD$

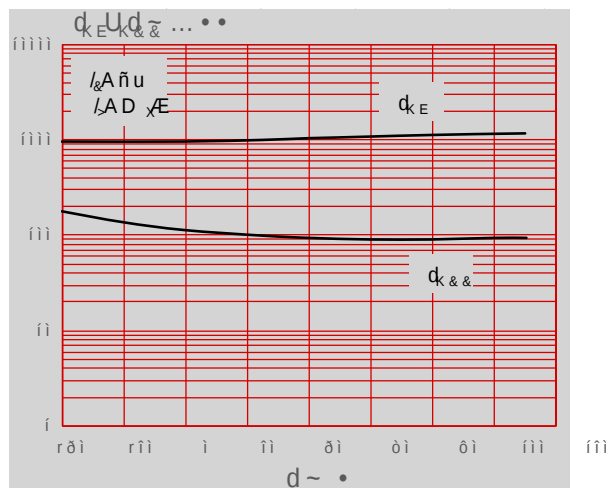
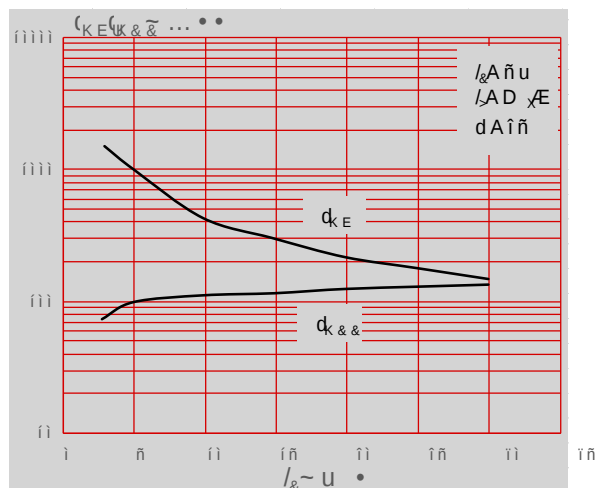


FIG.9: $2_{II} VWDWH \& XU UHQW YVB 2_{II} VWDWH$ FIG.10: $2_{II} VWDWH \& XU UHQW YVB \$ P 7HPSHUDWXUH$

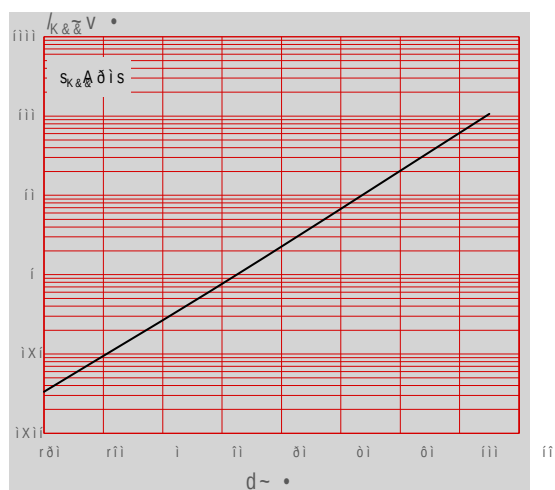
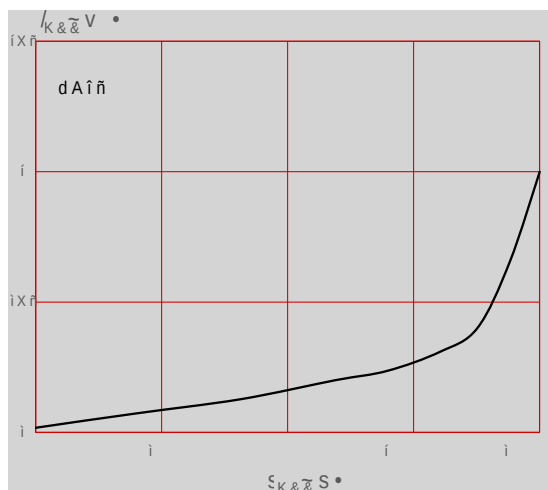
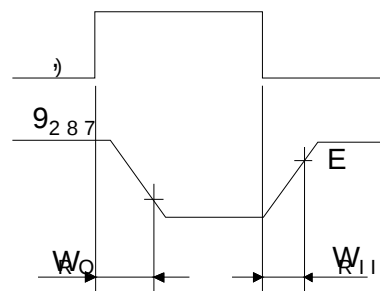
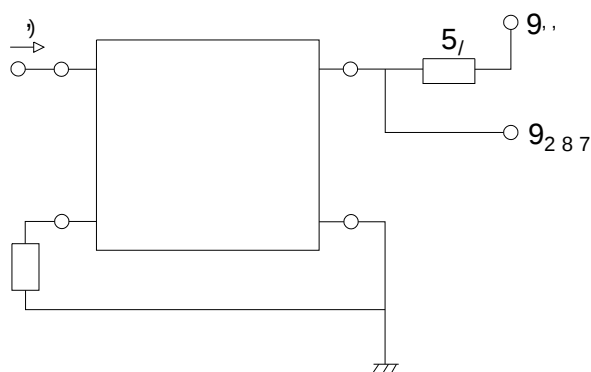
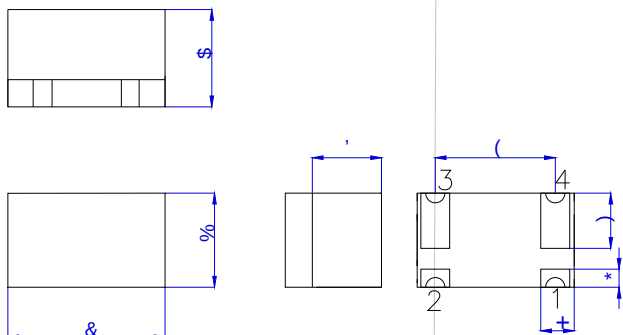


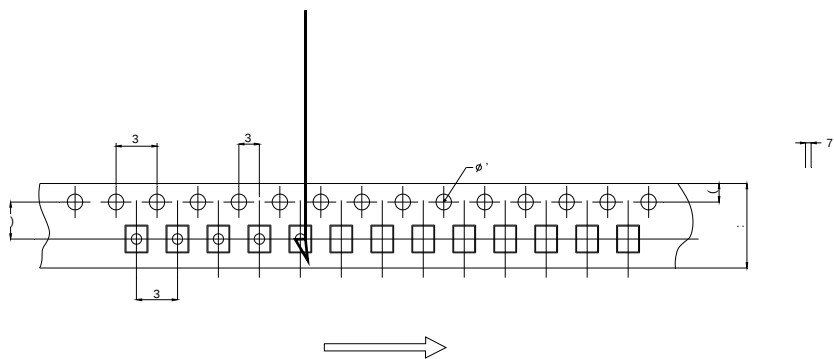
Fig.11: Switching Time Test Circuit and Waveform



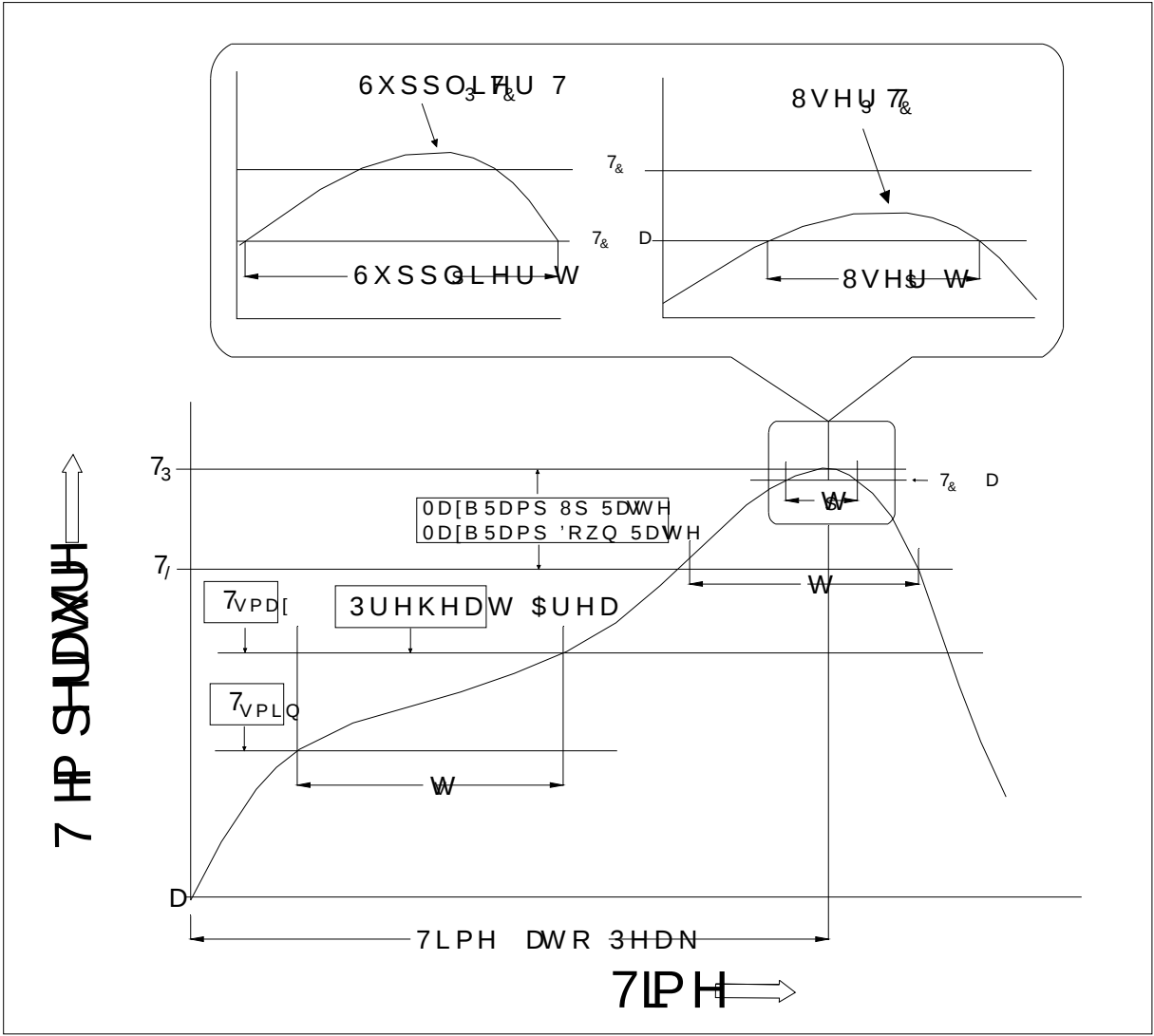


5HIB	'LPHQVLRQV					
	0LOOLPHWHUV ,QFKHV					
	0LQB 7\SB	0D[B	0LQB 7\SB	0D[B	0LQB 7\SB	0D[B
\$	B		B	B D		B
%	BE		B	B D		B E
&	B		B	B		B
'	B		B	B D		B D
(	B D		B D	B D		B
)	B		B	B E		B D D
*	B		B	B		B
+	B D		B D	B		B





5H1B	'LPHQVLRQV					
	0LOOLPHWHUV					
	0LQB7\1S\$	0D[B	0LQB7\1S\$	0D[B	0LQB7\1S\$	0D[B
.	BD	B			B DE	B
3	BE	B	B	B D	B D	B
3	BE	B	B	B D	B D	B
3	BE	B	B	B D	B E	B
(	B D	B D	B D	B D	B E	B
)	B	BD	B	B	B	B
7	B	B D	B	B	B	B
:	B	B	B	B	B D	B



Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
7HP SHUDWXUH 0LQB 7VPLQ		D
7HP SHUDWXUH 0D[B 7VPD[D		
7LPH WV IURP 7VPLQ WR 7VPD[		VHFRQG V
5DPS XS 5DWH W/ WR 7/CVHFRQG PD[B		CVHFRQG PD[B
/LTXLGXV 7HP SHUDWXUH 7/		
7LPH W/ 0DLQWDLQH \$ERYH 7/		D VHFRQG V
3HDN %RG\ 3DFNDJH 7HP SHUDWXUH		D CD
7LPH W3 ZLWKLQ D		VHFRQG V
5DPS GRZQ 5DWH 73 WR 7/CVHFRQG		CVHFRQG
7LPH DWR 3HDN 7HP SHUDWXUH		PLQXW 7VPLQ PD[B



1RWH

B5HIORZ VROGHULQJ LV UHFRPPHQGHG/ DWRZQH QHPSHWDWWDQW B
 B\$YRLG GLUHFV FRQWHDVSRPHQZDQVWRUDFRU H[FHHGLQJ LWV PD
 VWRUDJH WHPSHUDWXUHB
 B\$SSOLFDWLRQ RKHSUSTRYXERGRQWLSOHGDDWHG WHPSHUDWXUHV ,QV
 VFHQDULRV DQHPSVWLQRWRHFFHHG BD1B
 B(QVXUH WKH FRPSRQHGW KDV FRROHG SURFHENGHQWZMXPSHWDWWDQ
 PDQXIDFWXULQJ VWHSVB
 DB7KH FRPSRQHGW KDV BQKHODUZHQVWDQGHGKFRQGLWLRQVB
 B5HFRPPHQG VWRUDJH 7HPSB a &
 5HFRPPHQG VWRUDJH KXPLGLW\
 06/ OHYHO 06/

,QIRUPDWLRQ IXUQXPHQW ILQWKOZHGHG WR EH DFFXUDWH D
 -LDQJYX -LH-LH 0L&URBHWGFDVROXLFHVQLVUHRUSRQVHLERQVHT
 RI XVH ZLWKRXW FRQVLGHUDWLRQ IRG MWBKQIRUPDWLRQ
 LQ WKLV GRFXPHQW LQJYXZLWHEKWWQRWLFH DSDUW IURP V
 VLJQHG -LDQJYX&0LHVLZLWKPWKH DJUHHPHQWB
 3URGXFV DQG LQIRUPDWLRQ SURYLGHG LQ HQWVRGSDXPH
 -LDQJYX -LH-LH DVVXPHLOQW\URVSDQVLQIULQJHPPHQW RI RW
 ZKLFK PD\ UHVXOW IURP WKH XVH RI VXLV SURFXPHQW DQGS HL
 DQG UHSODFHV DOO LQIRUPDWLRQ SUHYLRXVO\ VXSSOLHGE
 LV D UHJLVWHUHGDQJMXGLPHDUN RUFULBHWGFBURQLFV &R
 &RS\ULJKW -LDQJYX -LH-LH 0LV&RBOHFGVSDQGHGIBJKWV UHVH