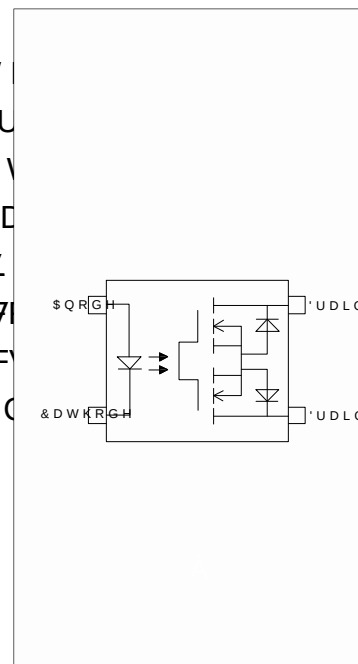




7KH SURGXFWV DUHODSVQ 7KSWGHDFH
VPDOO RXWODQHQRQRWRWUHOD\ VXLW
DVVHPEO\ ,W FRQVLVWV RI DQ LQIUDU
SKRWR 026)(7 DQG LV3KRXVSHDFNQJH ,V
D YHU\ VPDOO RQ UHVLVWDQFH DQG ID
KLJK IUHTXHQF\ VLJQDQW PDUNVQILWV
LQ KLJK VSHHG WHVWHVH7ZHGSHORGXV
WHVW HTXLSPHQW KLWVSHHGGRJKF
WHVWHUV DQG PHDVXULQJ LQVWUXPHQ



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 \$	3 6 2 1

W ^KE ð	í ñ ì hv] š • IZ o

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

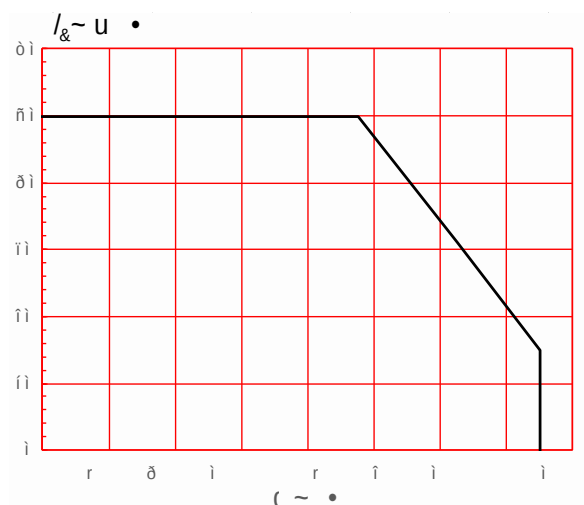


FIG.2: 2QVWDWH &XUUHQW YV \$PELHQW 7HPSHUDWXUH

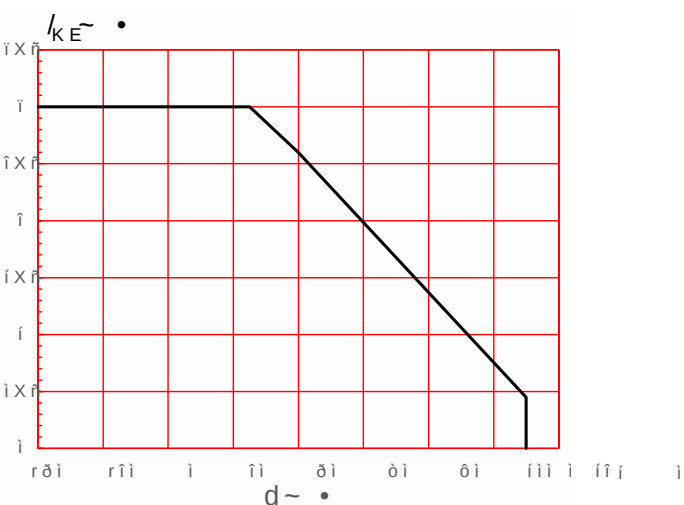


FIG.3: /(')RUZDUG &XUUHQW YV /(' '9ROWDJH

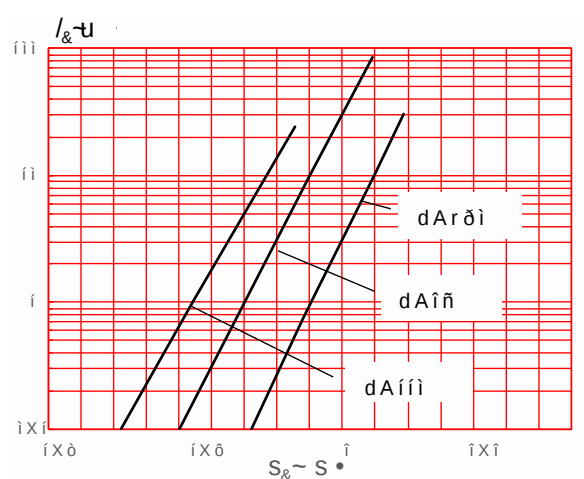


FIG.4: 2QVWDWH &XUUHQW YV 2QVWDWH

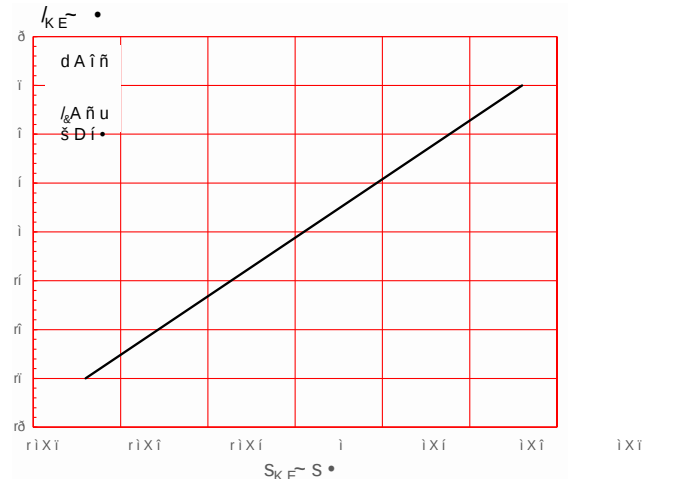


FIG.5: 2Q 5HVLVWDQRUEHHQW 7HPSHUDWXUH

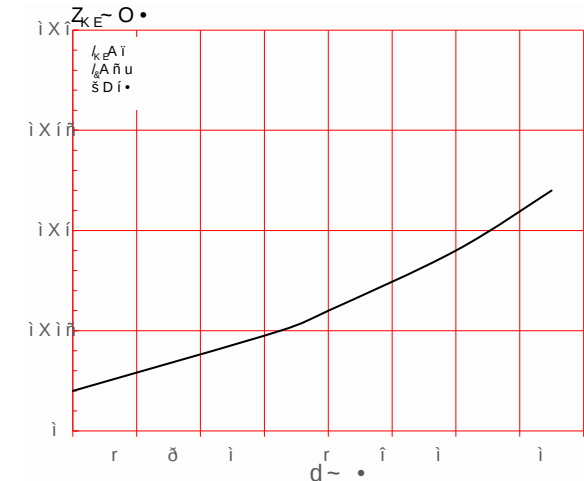


FIG.6: 2QVWDWH &XUUHQW YV \$PELHQW 7HPSHUDWXUH

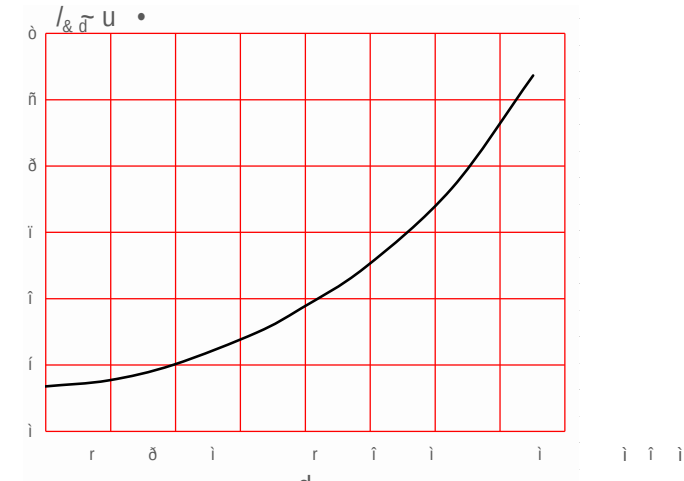


FIG.7: $I_{AS} \sim U_{DS}$ YV $I_{AS} \sim U_{DS}$ RUZDUG & XUUEHQW V FIG.8: $I_{AS} \sim U_{DS}$ YV $I_{AS} \sim U_{DS}$ SPELHQW 7HPSHUD

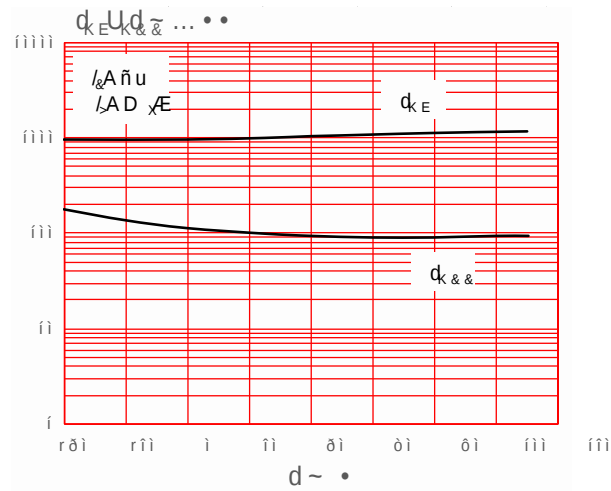
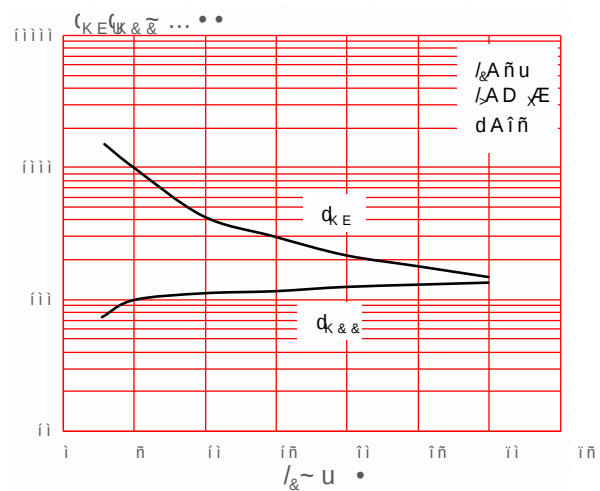


FIG.9: $I_{AS} \sim U_{DS}$ YV $I_{AS} \sim U_{DS}$ 2II VWDWH & XUUEHQW YV $I_{AS} \sim U_{DS}$ 2II VWDWH & XUUEHQW YV $I_{AS} \sim U_{DS}$ 7HPSHUDWXUH

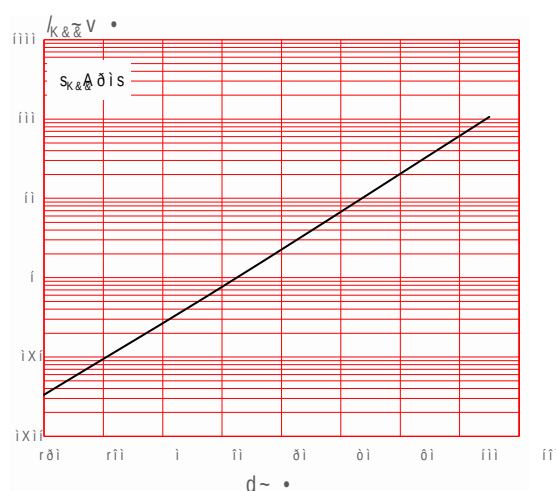
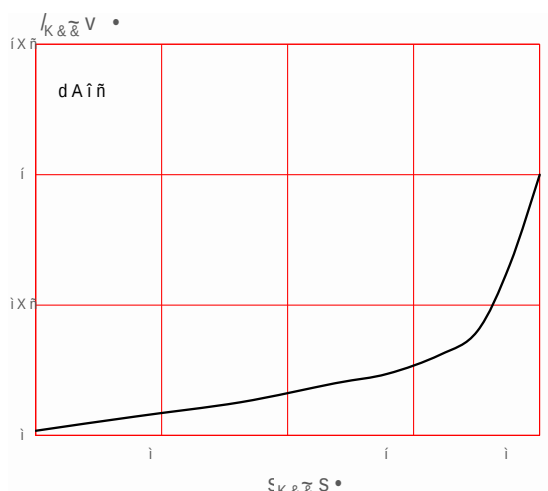
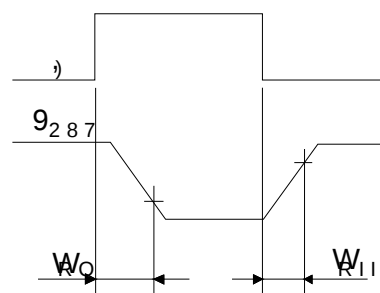
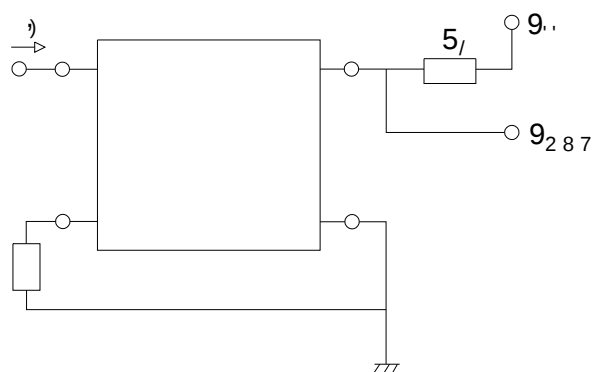
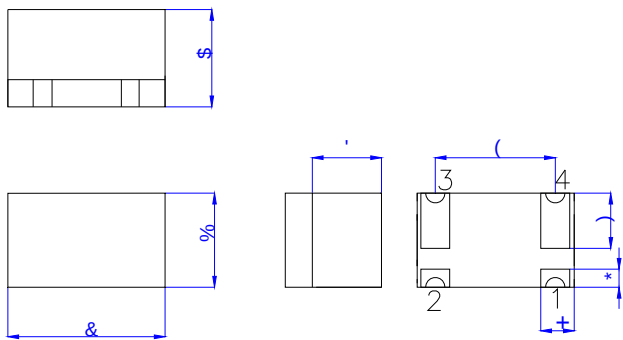
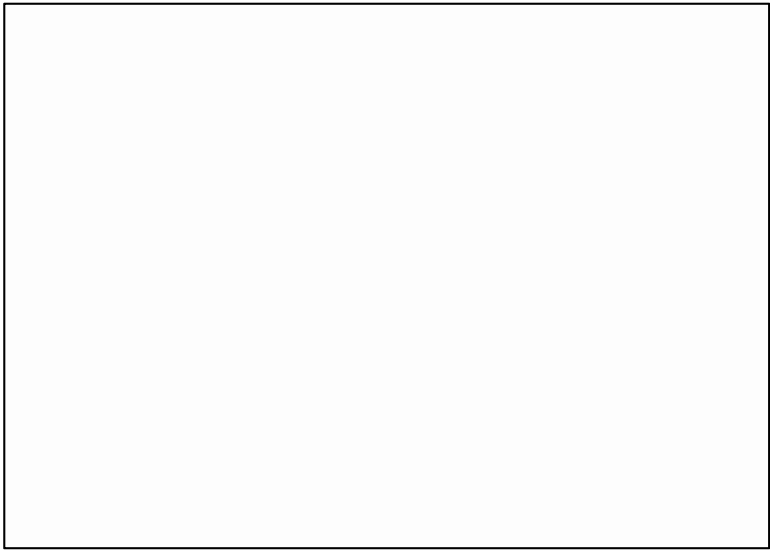


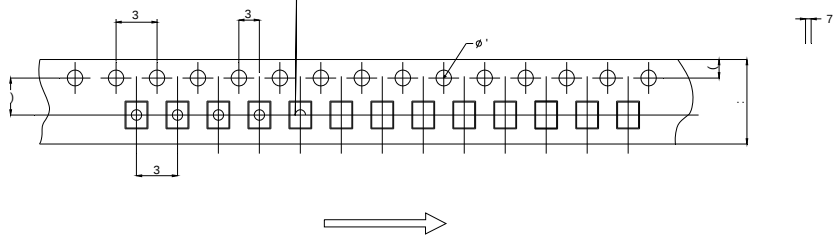
Fig.11: Switching Time Test Circuit and Waveform



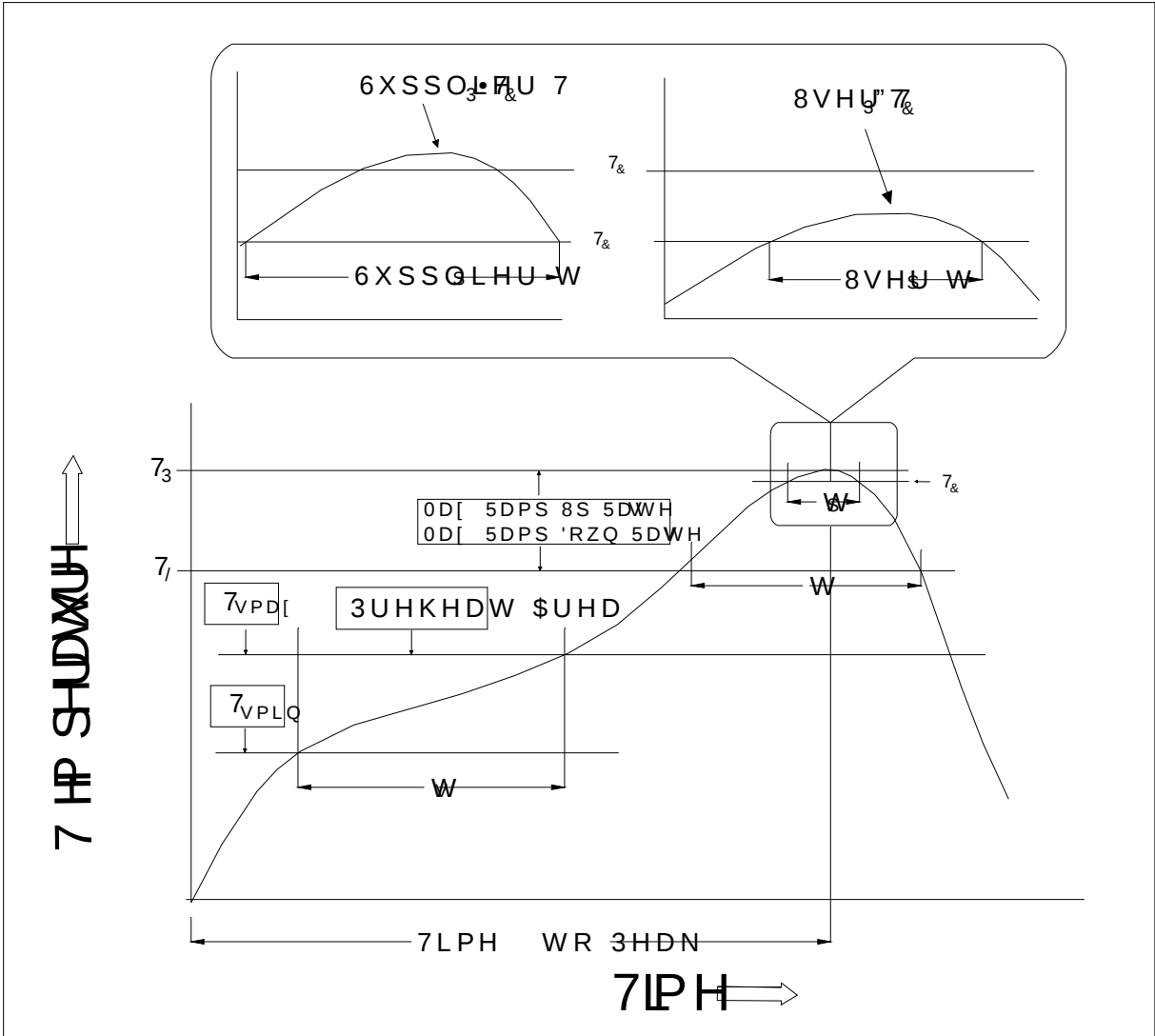


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Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
7HP SHUDWXUH 0LQ	7VPLQ	
7HP SHUDWXUH 0D	7VPD	
7LPH W V IURP 7VPLQ WR 7VPD		VHFRQG G V
5DPS XS 5DWH W / WR W	VHFRQG PD	VHFRQG PD
/LTXLGXV 7HP SHUDWXUH 7		
7LPH W / 0DLQWDLQHG \$ERYH 7		VHFRQG G V
3HDN %RG\ 3DFNDJH 7HP SHUDWXUH		
7LPH W 3 ZLWKLQ	VHFRQG V	VHFRQG V
5DPS GRZQ 5DWH 7 3 WR 7 / VHFRQG		VHFRQG
7LPH WR 3HDN 7HP SHUDWXUH		PLQXW V QXW HV PD

1RWH

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

,QIRUPDWLRQ IXUQXPHQW ILQWKOZHGHG WR EH DFFXUDWH D
 -LDQJYX -LH-LH 0LRRHWHGWDVQXLFHVQLVUHVSRQVHLERQVHT
 RI XVH ZLWKRXW FRQVLGHUDWLRQ IRG MWFKQIRUPDWLRQ
 LQ WKLV GRFXPHQWLDQJYXZLWKFVWRQRWLFH DSDUW IURP V
 VLJQHG -LDQJYXOLHVLZLWKPWKH DJUHHPHQW
 3URGXFV DQG LQIRUPDWLRQ SURYLGHG LQ HQWVRGSDXPH
 -LDQJYX -LH-LH DVVXPHLOQW\URVSDQVLQIULQJHPPHQW RI RW
 ZKLFK PD\ UHVXOW IURP WKH XVH RI VFKLVSURFXPHQW DQGS
 DQG UHSODFHV DOO LQIRUPDWLRQ SUHYLRXVO\ VXSSOLHG
 LV D UHJLVWHUHGDQJYXGLHDUNRLFULRHWGHFWURQLFV &R
 &RS\UKJKW -LDQJYX -LH-LH OLVRHOFVUSQDGLJKWV UHVH