



2XWSXW	6XSSO\ 9ROWDJH	&&	9	
	2XWSXW 9ROWDJH	9 ₂		
	2XWSXW &XUUHQW	, ₂		
	2XWSXW 3RZHU 'LVVLSDWLRQ	3	P :	
7RWDO 3RZHU 'LVVLSDWLRQ		3 _{WRW}		P :
,VRODWLRQ 9ROWDJH		9 _{LVR}	⁸	9UPV
2SHUDWLQJ 7HPSHUDWXUH		7 _{RSU}	a	
-XQFWLRQ 7HPSHUDWXUH		7 _M		
6WRUDJH 7HPSHUDWXUH		7 _{VWJ}	a	
6ROGHULQJ 7HPSHUDWXUH		7 _{VRO}		

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(}Æ íu]vμš U ZX,XAđì•òì9

7HPSHUDWXUH *f* &

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
,Q SXW	)RUZDUG 9ROWDJH		,) 9 P\$				9
	5HYHUVH &XUUHQW		9 ₅ , 9				\$
	,Q SXW &DSDFLWDQFH		9 ₁ & 0+]				S)
2XWSXW	&XUUHQW WUDQVIRU UDWLR		P\$ & 9 &75 9 ₂ 9				
	+LJK /HYHO &XUUHQW		,) P\$ & 9 9 ₂ 9 ,) P\$ & 9 9 ₂ 9				Q\$ \$
	/RZ /HYHO 6XSSO\ &XUUHQW		9 ₂ 2SHQ 9&& 9 ,) P\$				P\$
	+LJK /HYHO 6XSSO\ &XUUHQW		9 ₂ 2SHQ 9&& 9 ,) P\$				\$
	/RJLF /RZ 2XWSXW 9ROWDJH		,) P\$ 2, P\$ 9&& 9				9
	,VRODWLRQ 5HVLVWDQFH		'& 9 a 5 +				
	)ORDWLQJ &DSDFLWDQFH		&,2 9 1 0+]				S)
	6ZLWFKLQJ &KDUDFWHULWV		,) P\$ 5, N 9&& 9				V

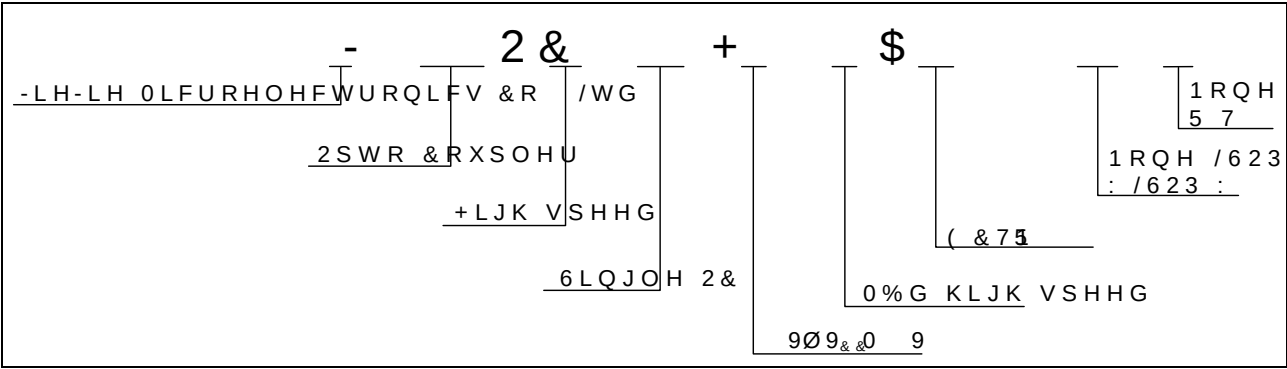


	3URSDJDWLRQ73/HOD\	)	P\$					
	7LPH WR /RJLF +LJK	5,	N					V
		9&&	9					

&RPPRQ 0RGH

7UDQVLHQW

0U8Ç•



$>\wedge KW\tilde{n}$	$\ddot{ii}\ddot{ii}\ hv]\$ \bullet IZ\ o$	$\hat{i}\ Z$	$o\bullet l/vv\ \mathfrak{E}\ \}\mathfrak{A}\ \ddot{ii}\tilde{n}\ h/w]\mathfrak{A}\bullet\mathfrak{E}\ \}\mathfrak{A}$

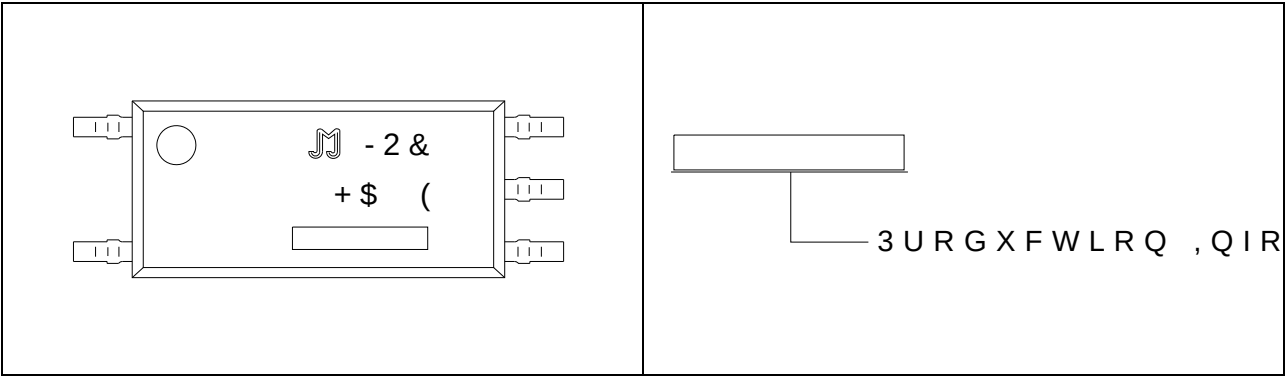




FIG.1:)RUZDUG &XUUHQW YV

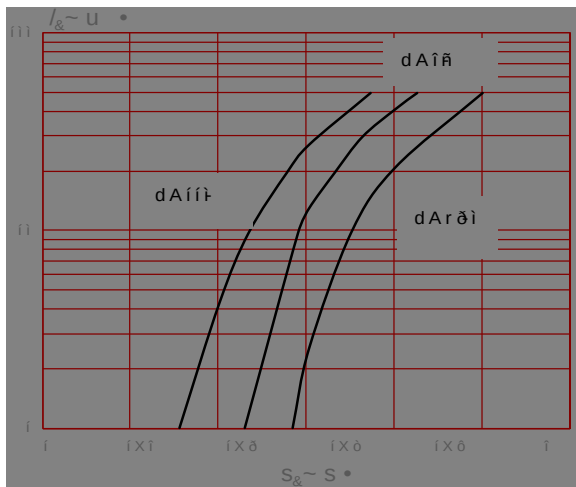


FIG.3: 2XWSXW & XU UHQW YV

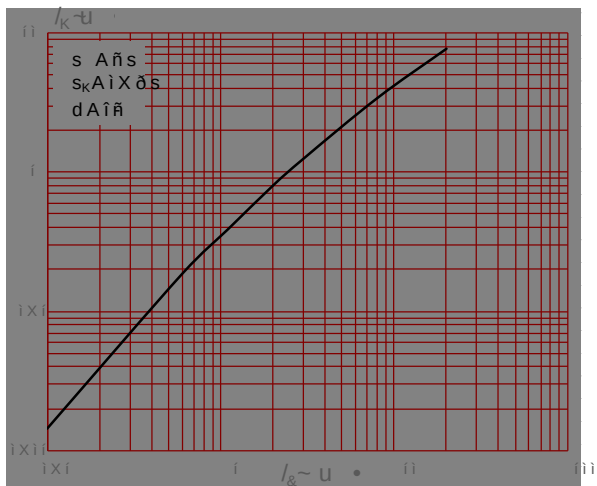


FIG.5: 1RUPDOLJHG &XUUHQV
\$PELHQW 7HPSHUDWXUH

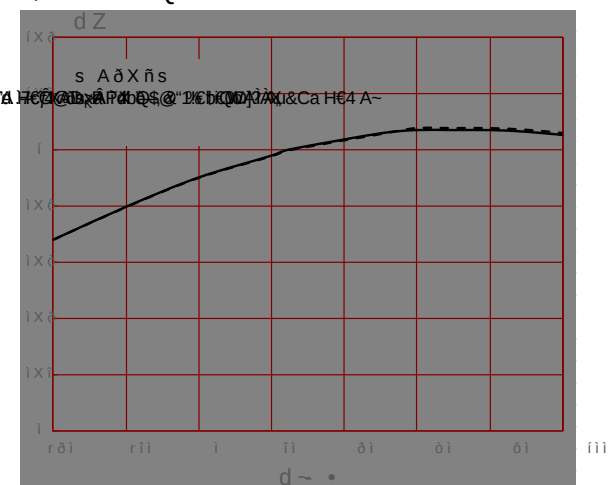


FIG2:9+LOW D H H HO 2XWSXW &XUUHQW
7HPSHUDWXUH

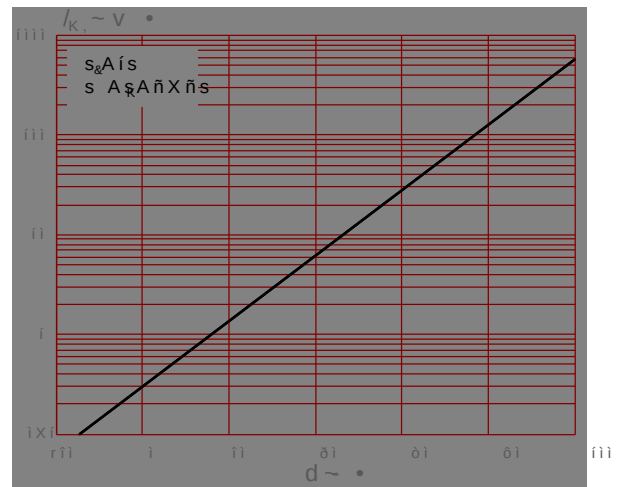
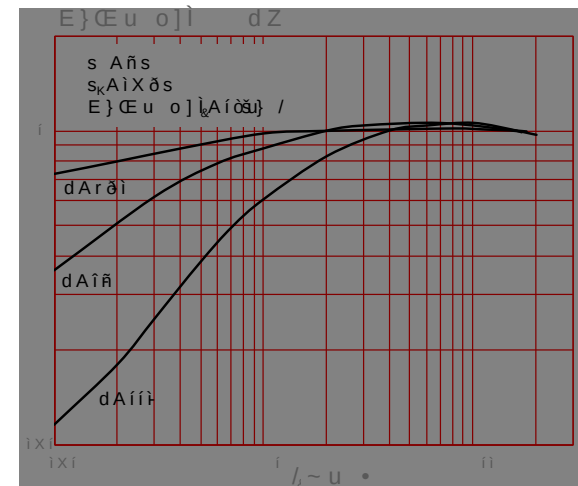


FIG. 4. XUHQW L]HG & XUHQW 7UDQV
YV)RUZDUG & XUHQW



7UDQVFIG.6: 3XWSXWYXUHQWYV2XWSX

FIG.7: /RZ /HYHO 2XWDSJHWY9RO\$PELHQ\$ 7HPSHUDWXUH

FIG.8: 3URSDJDWLRQ 'HOD\ YV /RDG 5HVLVWDQFH

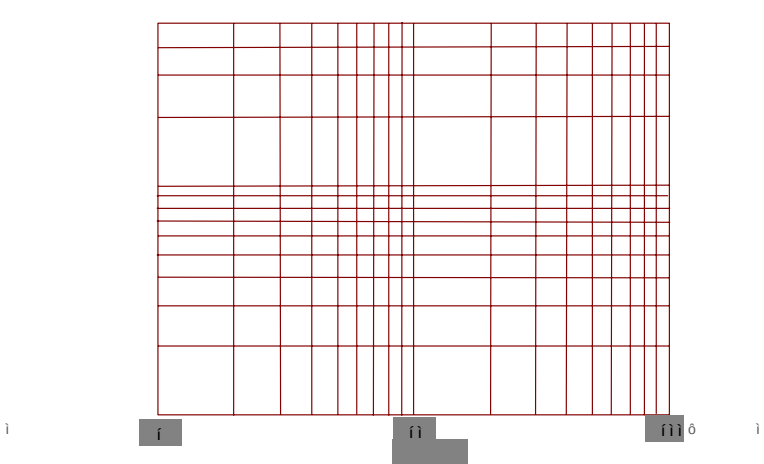
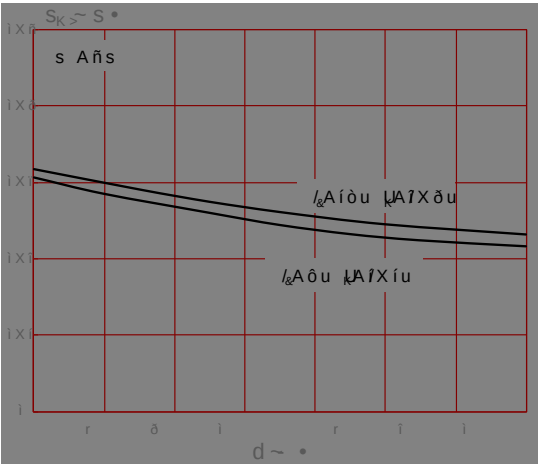


Fig.10: Switching Time Test Circuit and Waveform

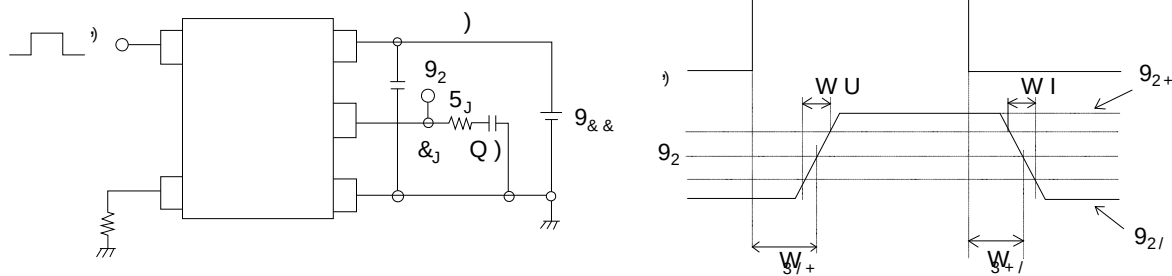
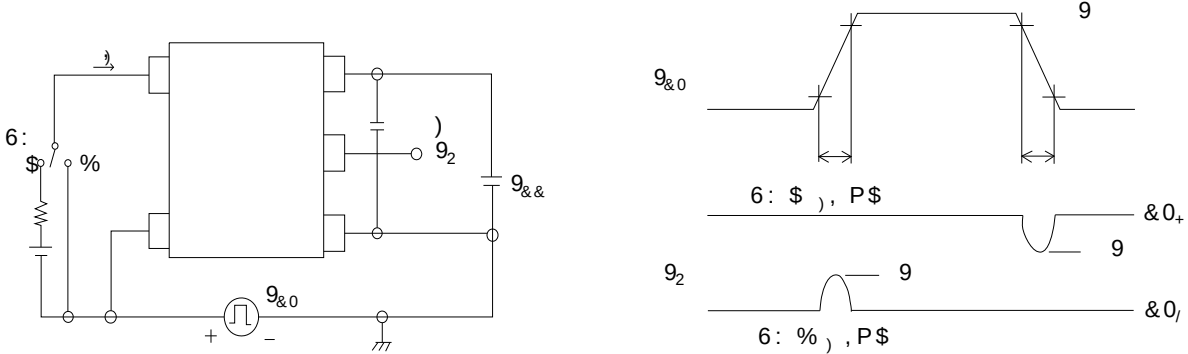
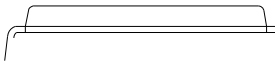
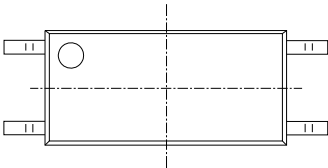
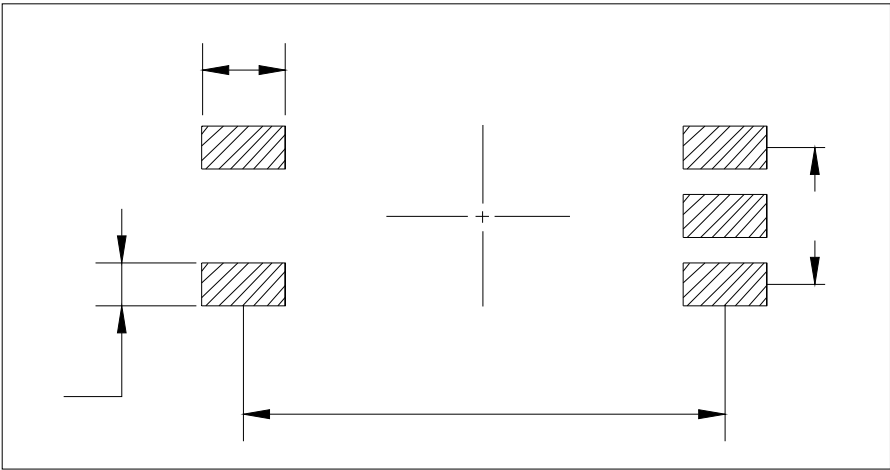
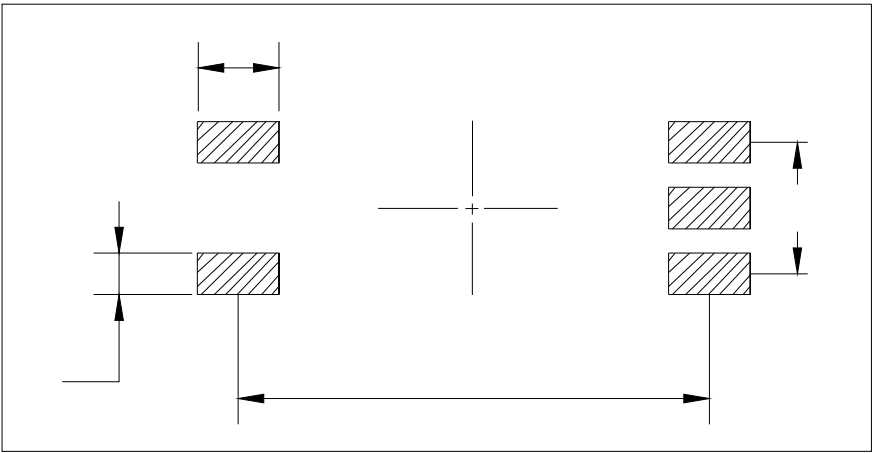


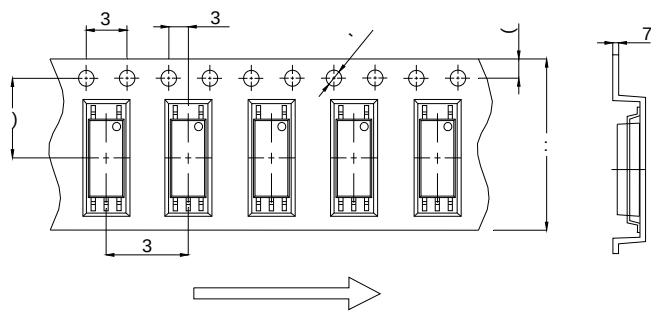
Fig.11: CMTI Test Circuit and Waveform



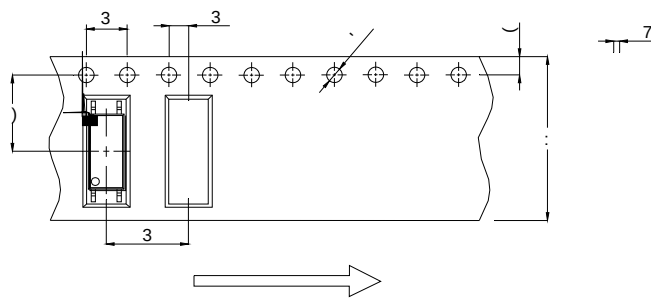


5HI	'LPHQVLRQV					
	0LOOLPHWHUV,QFKHV					
	0LQ	7\ S	0D[	0LQ	7\ S	0D[
\$						
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'						
(						
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,						*
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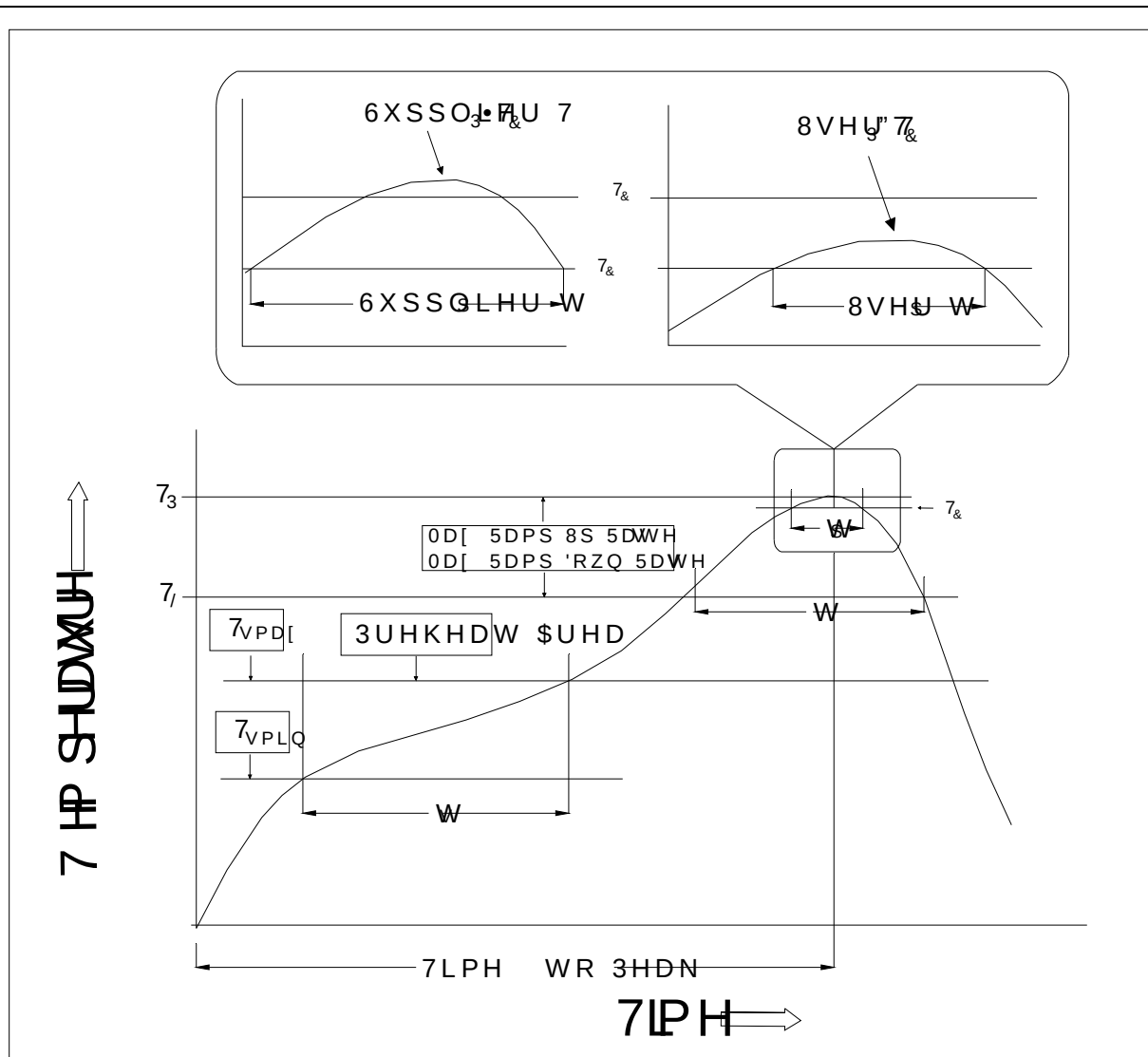




5HI	'LPHQVLRQV					
	0LOOLPHWHUV			,QFKHV		
	0LQ	7\ S	0D[	0LQ	7\ S	0D[
'						
3						
3						
3						
(						
)						
7						
:						



5HI	'LPHQVLRQV					
	0LOOLPHWHUV			,QFKHV		
	0LQ	7\ S	0D[	0LQ	7\ S	0D[
'						
3						
3						
3						
(						
)						
7						
:						



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

,QIRUPDWLRQ IXUQXPHQW ILQWKOLHGRHG WR EH DFFXUDWH
 -LDQJVV -LH-LH 0LRRHOWHGDVROLFHVQLVUHVSRQVHLERQVHT
 RI XVH ZLWKRXW FRQVLGHUDWLRQ IRG MWFKQLQIRUPDWLRQ
 LQ WKLV GRFXPHQWLDQJXZLWHFRVWRQWLH DSDUW IURP V
 VLJQH -LDQJVSOLHVLZLWKPWKH DJUHHPHQW
 3URGXFV DQG LQIRUPDWLRQ SURYLGHQJLQVWRGSRXV
 -LDQJVV -LH-LH DVVXPHLOQW\URVSDQVLQIUHQJHPPHQW RI RW
 ZKLFK PD\ UHVXOW IURP WKH XVH RI VXLV SURGXPHQWVQXSH
 DQG UHSODFHV DOO LQIRUPDWLRQ SUHYLRXVO\ VXSSOLHG
 LV D UHJLVWHUHGQWJDXGLHDUNRUF-URHOWHGWURQLFV &R
 &RS\UKJKW -LDQJVV -LH-LH OLVRHOWHGWURQLFVGLJKWV UHVH