

E^a G K468")â+k i ž

\$(LDO /HDG &RORU &RGH &DSDFLWRU

1 (.

) HDWXUH

%0% E , iH] ,F8 >8 P i >û,° - '5L µ \ ;>û oí

0LQLDWXUH VL]H HDUWH SFD SDFLNDEHDEJOVXLRW DXWR SODFHPHQW

)â")G78 7>û , 6B - ? N8¥,°Lh%â]73 = p æ p Ü 6F'#]

(SR[\ UHVLQ FRDWLQDIFQWDSVHM RHJ P B B 7 HVWQD Q X PL P L H F K D Q Q 6 D K O H D W W U H K V W W D

P+U Ý = ü p . P0 7P Á Ý ÷

6WDQGDUG VL]H YDULRXV OHDG FRQILJXUDWLRQ



1 Ê+^

\$\$SOLFDFWLRQ

68b+^FJ ÷

*HQHUDO SXUSRVH JRRGV

1 Á ->ž/p#

3DUW 1XPEHU

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\$		%		&		'	* (+

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Ý ÷2± a 3 URGXFW 7\SH	
- &RGH	2± a 7\SH
\$ & &	E ^a G K468")â+k i ž \$(LDO /HDG &RORU &RGH &DSDFLWRU

%

b % p . .7	
1 RPLQDO %RG\ 6L]H &RGH	
	Ó h
'0°,3 µ n?ú	Ó h

&

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7HPSHUDWXUH &KDUDFWHULVWLFV					
&+	f SSP	' a µ	&* & *	f SSP	' a µ
5+	f SSP	' a µ	% ; 5	f	' a µ
8-	f SSP	a) < < 9	a	a
6/	f SSP	' a µ			

=0& iH 1RPLQDO & DSDFLWDQFH
fZf!•p?~!•, D6f!•>ž/pM,°' !)LUVW WZR GLJLDQWDDGIGVWJKLWfLURG JHLURW LV QXPEHU Á,Æ)RU H[DPSOH S), 5 S)

(

iH ç\$							
7ROHUDQFH							
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" S)	" S)	"	"	"	"	a	a
& ' IR Ę &3)							
13 & ' - . 0 ; 5 . 0 1 6 =							

)Æ

NÓĐ+k Á	
5DWHG 9ROWDJH	
fZf!•p?~!•, D6f!•>ž/pM,°' !)LUVW WZR GLJLWV DGHWKHJWKLfLURG JHLURW LV QXPEHU Á,Æ)RU H[DPSOH 9 9	

*Æ

;>ûiE		
3DFNDJLQJ 6W\OH		
5L\	3	- \;>û \$ PPR
7DSH	7	- \;>û 5HHO

+

K7P~E' < fÆ P Pµ	
/HDG &RQILJXUDWLRQ	
	5L\»D 7DSH ZLGWK PP
	5L\»D 7DSH ZLGWK PP

1 p. = ' + k Á = iH ©31 > ž

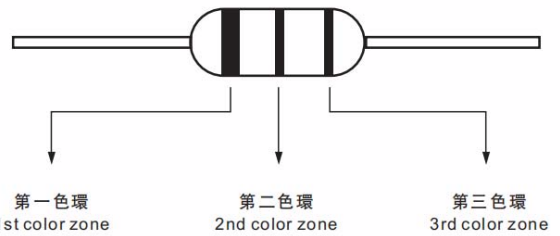
6L]H FRGH FDSDFLWDQFH DQG YROWDJH

7HPS FK	' + k Á 9		= 0 & iH 99 *		iH ¢ \$ & DSDFLWDQFH 7ROHUDQFH
	9ROWDJH		\$YDLODEOH & DSDF		
p. ?úr 6L]H & RG	Á	Á	Á	Á	
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& +			5 a	5 a	
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< 9 <)			a	a	0 " 1 " = a

1 8") á = Aæ .7

0DUNLQJ RI & RORU & RGH

	= 0 & iH 1RPLQDO & DSDFLWDQFH		
	1b 68") á VW FRORU Q B QH RORU J R Q H RORU	1b Á 8") á VW GLJLW QG GLJLW UG GLJL	1b ? 8") á VW FRORU Q B QH RORU J R Q H RORU
	1b 6! • VW GLJLW QG GLJLW UG GLJL	1b Á! • VW GLJLW QG GLJLW UG GLJL	1b ?! • VW FRORU Q B QH RORU J R Q H RORU
U % ODFN			î
% URZQ			î
4Ø5HG			î
• 2UDQJH			î
Tú < HOORZ			î
55 * UHHQ			î
; % OXH			
3a 3XUSOH			
& ! * UD \			
, ³ : KLWH			
H * ROG	2	2	î
K, 6LOYHU	2	2	î



Á, Æ = 0 & iH p , 8") á p ' µ U Ä µ Tú ' µ x
 (* , I QRPLQDO FDSDFLWDQFH QHFWLYHO\ EWHROZRZ E@B@K@G EH PDUNHG
 1b 6—8") á 46 Ê0C2Í, ó Ü4Ü p - 1Z —, ° C >
 7KH ZLGWK RI WRWKQGUEHWDEOPHWKWKUDQ RWKH

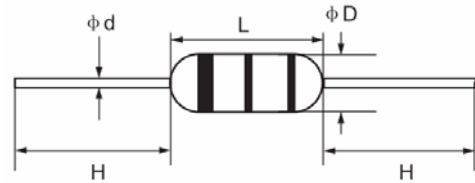
1 L~p.

([WHUQDO 'LPHQVLRQV

< ÷

% XON 3URGXFWV "TL 8QdLWP

p. ?úr 6L]H &RGH	/	Ó ' "	ÓG "	+
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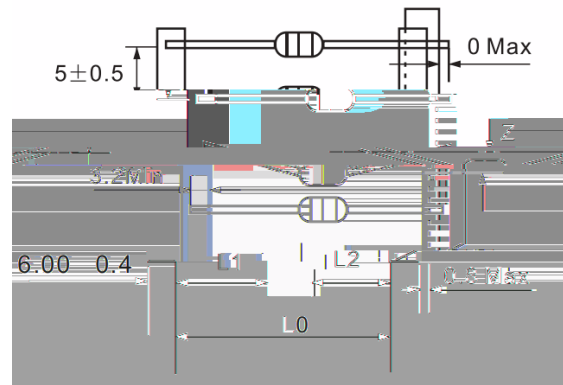


5L\p.

7DSLQJ GLPHQVLRQV

< f 8QÖWP

5L\iE 7DSH 6W\OH	/	=	Š / / Š
5L\»D Æ 7DSH :LGWK	"	PD[PD[
5L\»D Æ 7DSH :LGWK	a	PD[



1 %M-]#•B i#

5HOLDELOLW\ 7HVW 0HWKRG

N-\$,WHP	¶e?."x 7HFKQLFDO 6SHFLILFD		#•B i# Å=# WLRQ 7HVW 0HWKRG DQG 5HPDUNV		
iH &DSDFLWD &DQFH	,2± &ODVV	É1\>=Đ,°B%\$4Ý a ZLWKLQ WKH V 'WROHUDQFH	=0&iH &DSDFLWD	#•B NÇ)½ OHHDVXULQJ)UH	#•B +kÁ 0HDVXULQJ DQFH
			&" S)	0 += "	" 9
	,2± &ODVV	É1\>=Đ,°B%\$4Ý a ZLWKLQ WKH V 'WROHUDQFH	=0&iH &DSDFLWD	#•B NÇ)½ OHHDVXULQJ)UH	#•B +kÁ OHHDVXULQJ 9ROWDJH
	&" X)	. += "	" 9		
•6M@ !™ = 'LVVLSDWLRQ)DFWRU ')	,2± &ODVV	&• S) ')" &Ø S) ')" > & @ ;	=0&iH &DSDFLWD	#•B NÇ)½ OHHDVXULQJ)UH	#•B +kÁ OHHDVXULQJ 9ROWDJH
			" S)	0 += "	" 9
	,2± &ODVV	% ')"	=0&iH &DSDFLWD	#•B NÇ)½ OHHDVXULQJ)UH	#•B +kÁ OHHDVXULQJ 9ROWDJH
	&" X)	. += "	" 9		
55N+kLq ,QVXODWLRQ 5HVLVWDQFH	,2± &ODVV	&" Q) ,5• 0 ,&! Q) 5 &•)	#•B +kÁ NÓĐ+kÁ 0HDVXULQJ 9ROWDJH 5DWHG 9ROWDJH #•B ,L* f 0 'XUDWLRQ " V		
		,2± &ODVV	&" Q) ,5• 0 ,&! Q) 5 &•)	#•B \$µ ÜÆ" 7HVW +XPLGLW\ " #•B \$_ÜÆ f 7HVW 7HPSUDWXUH #•B {t+k+k#wÆ" P\$ 7HVW &XUUHQW " P\$	
6F\$ix] 6ROYHQW WDQFH	L?ø %?÷•ZL8n =Aæ\$;!> 1R GHIHFVW RU DEQRUPDOLWLVH 5HVLVWDQFH DQG OHJLEOH PDUNLQJ		\$ix\$ _ÜÆ f 6ROYHQW WHP SHUDWXUH f <m÷#@^\$ixc <JÖ,+^7g78ÿ^m÷? = Gfm !W,H C !W SXW WKH VDPSOH LQWR VROYHQW 0LQ, DQG WKH EUXVK VDPSOH V QRWDWLRQ DUHD WLVPHV ZLWK WLVPHV WK SOHGJHW UHSHDW WLVPHV		

N-\$,WHP	¶e?."x 7HFKQLFDO 6SHFLILFDW	#•B ĩ# Â =# 7HVW 0HWKRG DQG 5HPDUNV WLRQ
6F+k Á :LWKVWDQ 9ROWDJH	C Ê ? C^>á 1 0µL•Z GL QJ 1R EUHDNGR GDPDJH	#•B+k Á 0HDVXULQJ ÖROWDJH 2± NÓĐ+k Á &ODVV 5DWHG YROWDJH 2± NÓĐ+k Á &ODVV 5DWHG YROWDJH 75#,L* f 0 'XUDWLRQ " V { t+k+k#w C ÊC»Eý P\$ 7KH FKDUJH GLVFKDUJH FXUUHQW LV OHVV WKDQ P\$ 1% †DL>ûL*%HWZHHQ WHUPLQDOOV DQG ERG\ 6 Ö+k ÁÆ 8 5 ZQ RU 75#,L*Æ a V 9 R O W D J H W L P H V U D W H G Y R O W D J H 'XUDWLRQ H "IE*9# 6PDOO PHWDOOLF EDOO PHWKRQ <+kĩžb%o >-%-*°p PP,°H "E*9,°ĩžc, +*D 1%j: PP,°b%oC > >BPÂ+k Á ó Ö ^.#D% D%1% † ÂH "E*9•L* > 6PDOO PHWDOOLF EDPOHWHZLVWKKDROFOCEIBSÖVWCKHDWHVWHFDS VKDOO EH VXEPHUJHG H[FHSW PP IURP\WDKHWKSHRMHLVPLQEBE 7KH WHVW YROWDJH VKDOO EH DSSOHLWRLQEBVZHOGWKHHVKHRW EDOOV
%@] 6ROGHU D	@KW)½ Ê] Ä /HDG ZLUH ELOLW\ FRYHUHG QHZ VROGHU FRDWLQJ	<+kĩžK46#@>a? 'Oĩ,°G~26\$ĩ#èc 0 ,ID#@,\$_ Üp " ,°H " @KW)½ Ê] Ä X 0 # EÆ+kĩžb%o ËM^D/nKWM^4Ü a PÄ WKH OHDG ZLUH RI FDSDFLWRU LV GLSSLQWLDORR DRU VRVLQ ZLWKHDLQWR PROWHQ VÄROGHU' 6ORU\$J &X V ,Q ERWK FDVH GHSWK RI GLSSLQJ LV XS WR DERXW a PP IURP WKH WHUPL KW\$_Æ " ,L*Æ f V 6ROGHU WHPSHUDWXUH " f V 'XUDWLRQ û& & #@>—,Æ<+kĩž >ĐÜp PP,Š°p PP,°3&µ> & * 0 f ,PPHUVHG FRQGLWLRQWKH,Q&HURDUGLZORWK PPGLDPHWHU L f S) /Ä,2± C^,BPÂD,Ê^=ü—,A~C f E,Df#B > 5HFRYHU\RU FODVV , " KRXUV RI UHFYRUH\XQGHU WKH 6ROGHULQL?ø %?÷•Z 75#,L*Æ a V WKKOR RI UHÀ 0 OH V O Hp Wb H _Ä Đ` +HDW 1R VLJQLILFDQW DEQRUPDOLW\ LQ DSSHDUDQFH

N-\$,WHP	¶e?."x 7HFKQLFDO 6SHFLILFDWLRQ		#*B i# Å=# 7HVW 0HWKRG DQG 5HPDUNV
Q\$_CU9- +LJK 7HPSHUDWXUH /RDGLQJ 7HVW	• & & & * 0f L f S) ; 5 0f <) 0 f ') & 2* & U S) 0 Ø & Ψ 0 Å & Å ; 5 0 <) 0 & 50 X) 0 X)Ú & 5Ú X) 0 & 51 X) ,5 55N+kLq,QVXODWLRQ 5HVLVWDQFH 1 0i R Uj)E'Er :KLFKHYHU LV L?ø %?÷•Z \$SSH DUDQFH QR YLVLEOH GDPDJH		+k ÁÆ CNÓ Ð+k Á ,L*Æ E, \$_ÜÆ& * ; 5 < 9 {+k+k#wÆCÊC»Ey P\$ t5α—,ÆÚ\$_ t5α,L*Æ E, ' & jf,L E, ' ; 5 < ¶É \$SSOLHG 9ROWDJH 5DWHG 9ROWDJH 'XUDWLRQ K 7HPSHUDWXUH &KDUJH 'LVFKDUJH &XUUHQW P\$ PD[&RQGLWLRQV 5RRP 7HPSHUDWXUH 5H VPDOOHU K & * RU K ; 5 < 9
1%jpÜ 7HUPLQDO 6WUHQJWK	íypÜ 7HQVLOH 6WUHQJWK	K46 ä>ø L ' b1•%?÷ C 8¥>	0 Ð+k i ž b %,"ó K46 i GFF!› ó Ö y Ñ-*8) 1,'ID 7 f 0 Å)L[WKH FSDFLWRU ERG\ DSSO\ WKH I HDFK OHDG LQ WKH UDGLDO GLUHFWL XQWLO UHDFKLQJ 1 DQG WKHQ NHHS f VHF /+k i ž K 01% ó Ö 6 1,°Ñ,µK46 e(Ú,75# 0,1DµK46 f Ö f 5α,Ú-v VY '6!Wp6`à)à, \$H C !W> (DFK OHDG ZLUH VKDOO EH VXE MHFWHQ 1 DQG WKHQ EH EH QW D DQJOH RI UHWXUQH G WRQLQLVLDVSSRVDWLRQ LV C RYHU D SHULRG RI VHF 7KHQ VHFRRQ RSSRVLWH GLUHFWLRQ VKDOO EH PDGH

@ v/p = ü—, @ H , AÆ\$ _ÜÆ a , -./ \$µÜÆ a , "JÁÆ a N3D
 1RWH RQ VWDQGDWV G QFRUJGL WR RGLR KRO HLLCH MKURKHOG VEH GHILQHG DV IROORZ
 WR RI WHP SHUDWXUH HODWRYH KXQGLWSP RINDWPLRV SKHV VXUH
 9#*B5 Ó? ;Aä , (>÷BPÂ+^=ü]"J—, pÆ\$ _ÜÆ f , -./ \$µÜÆ a , "JÁÆ a N3D
 :KHQ WKHUH DUH TXHVWLRQV FRQFHUQH QJWPH SVXRYH EHQFRUWHV QDWLRQ GRDW
 FRQGXFWHG XQGHU D FRQGLWLRQ RI GGRJWHPSBODWXPV WKQRXJKD RI
 DQG WR N3D RI DWPRVSKHULF SUHV VXUH

