

)(\$785(6 DQG)81&7,21\$/ ', \$*5\$0

3\$&.\$*(

x 3RZHU FRQVXPSWLRQ RI P\$ DW 9'& IRU HGHUJ\ HIILFLHQF\
x 6LQJOH &XUUHQW 6LQNLQJ RU &XUUHQW 6RXUFLQJ 2XWSXW
x /LQH DU RXWSXW IRU FLUFXLW GHVLJQ IOH[LELOLW\
x 5DWLRPHWULF 5DLO WR 5DLO /LQH DU 2XWSXW
x 3UHFLVH 6HQVLWLYLW\ DQG 7HPSHUDWXUH &RPSHQVDWLRQ
x :LGH 2SHUDWLQJ 9ROWDJH 5DQJH 6XSSO\ 9ROWDJH a 9
x 6HQVLWLYLW\ DW 9 72 6
P9 *DXVV +/
P9 *DXVV +/
P9 *DXVV +/
x 6HQVLWLYLW\ DW 9
P9 *DXVV +/
P9 *DXVV +/ 627 / 627 /
P9 *DXVV +/
x 6SHFLILHG 2SHUDWLQJ 7HPSHUDWXUH 5DQJH)URP
x 5HVSRRGV WR HLWKHU SRVLWLYH RU QHJDWLYH JDXVV
x 4XDG +DOO VHQLQJ HOHPHQW IRU VWDEOH RXWSXW
x /HDG)UHH 3DFNDJH)ODW 72 627 / 627 /
x +LJK (6' 3URWHFWLRQ
x 5R+6 &RPSOLDQW (8

\$33/, &\$7,216

\$XWRPRWLYH ,QG XVWULDO
DSSOLDQFHV
&XUUHQW VHQLQJ
6SHHG 'HWHFWLRQ
3RVLWLRQ 'HWHFWLRQ
0DJQHULF (QFRGHU
6ROLG 6WDWH 6ZLWFK
)HUURXV PHWDO VHQLQJ
/LTXLG OHYHO VHQLQJ
9LEUDWLRQ VHQLQJ
:HLJKW VHQLQJ

'(6&5,37,21

7KH +/ +/ +/ IDPLO\ LV KLJK SHUIRUPDQFH UDWRPHWULF OLQH
ZLWK %WVHQV ORJ\ LW LV KLJK SHUIRUPDQFH VPDOO YHUVDWLOH OLQH
RSHUDWHG E\ WKH PDJQHULF ILHOG IURP D SHUPDQHWH PDJQHWH RU DQ
YROWDJH LV VHW E\ WKH VXSSO\ YROWDJH DQG YDULHV LQ SURSRUWLRQ
&+ &+ &+ IDPLO\ KDV D TXLHVHQW RXWSXW YROWDJH WKDW LV

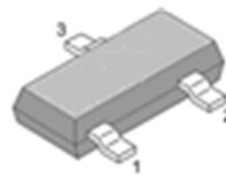
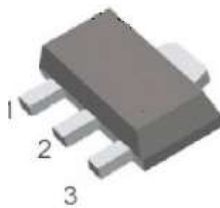
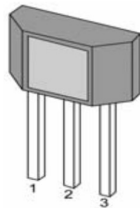
7KH LQWHJUDWHG FLUFXLWU\ SURYLGHV LQFUHDVHG WHPSHUDWXUH VW
+/ +/ +/ SURYLGH KLJK DFFXUDF\ DQG WHPSHUDWXUH FRPSHQVDWLRQ
KDYH DQ RSHUDWLQJ WHPSHUDWXUH 5DQJH 6XSSO\ 9ROWDJH
DXWRPRWLYH HQYLURQPHQW 7KH\ UHVSRRGV WR HLWKHU 6RXWK RU 1RU

3URGXFW)DPLO\ 0HPEHUV

3DUW 1X	0DUNLC	'HVFULSWLRQ	
+/ \$7%	&	/LQH DU +DOO VHQVRU ,& IODW 72 6 SDFN EDJ	DJH E
+/ \$(5	&	/LQH DU +DOO VHQVRU ,& 627 / SDFN DJH XQLWV SHU UH HO	WDSH
+/ \$65	&	/LQH DU +DOO VHQVRU ,& 627 / SDFN DJH XQLWV SHU UH HO	WDSH
+/ \$7%	&	/LQH DU +DOO VHQVRU ,& IODW 72 6 SDFN EDJ	DJH E
+/ \$(5	&	/LQH DU +DOO VHQVRU ,& 627 / SDFN DJH XQLWV SHU UH HO	WDSH
+/ \$65	&	/LQH DU +DOO VHQVRU ,& 627 / SDFN DJH XQLWV SHU UH HO	WDSH
+/ \$7%	&	/LQH DU +DOO VHQVRU ,& IODW 72 6 SDFN EDJ	DJH E
+/ \$(5	&	/LQH DU +DOO VHQVRU ,& 627 / SDFN DJH XQLWV SHU UH HO	WDSH
+/ \$65	&	/LQH DU +DOO VHQVRU ,& 627 / SDFN DJH XQLWV SHU UH HO	WDSH

3LQ 'HILQLWLRQV DQG 'HVFULSWLRQV

72 6 627	627	1DPH	7\SH	)XQFWLRQ
7	(
		9"	6XS	6XSSO\ 9RC
		*1'	*URXQG	*URXQG SLQ
		287	2XWSXW	2XWSXW SLQ



72 6

627 /

\$EVROXWH 0D[LPXP 5DWLQJV

3DUDPHWHU	6\PERO	0LQ	0D[	8QLWV
6XSSO\ 9ROWDJH	"	9		9
9" 5HYHUVH 9ROWDJH	9"	5"	9	9
2XWSXW 9ROWDJH	287	9		9
2XWSXW &XUUHQW	287	,		P\$
2SHUDWLQJ \$PELHQW 7HPSHUDWXUH			7	f&
6WRUDJH 7HPSHUDWXUH	6		7	f&
-XQFWLRQ WHPSHUDWXUH	-		7	f&
0DJQHWF)OX[		%		1R /LPLW

1RWH ([FHHGLQJ WKH DEVROXWH PD[LPXP UDWLQJV PD\ FDXVH SHUPDQH PD[LPXP UDWHG FRQGLWLRQV IRU H[WHQG HG SHULRGV PD\ DIHFW GHYL

(6' 3URWHFWLRQV

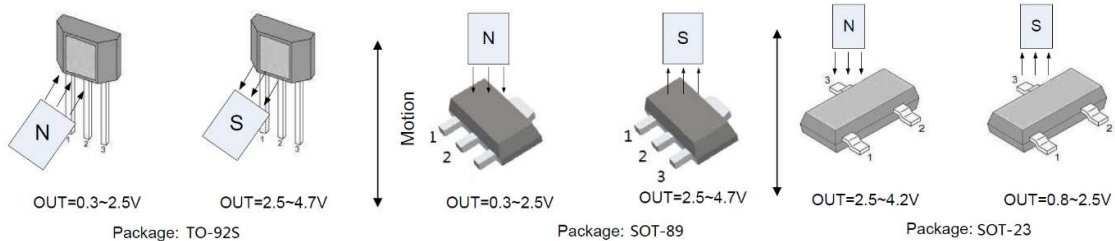
3DUDPHWHU	9DOXH	8QLW
\$OO SLQV		9
\$OO SLQV		9
\$OO SLQV		9

+%0 KXPdq ERG\ PRGH S) NRKP DFFRUGLQJ WR 0,/ 67' + 0HW
 00 0DFKLQH ORGH & S) 5 Ÿ DFFRUGLQJ WR -('(& (,\$ -(6' \$
 &'0 FKDUJHG GHYLFH PRGH DFFRUGLQJ WR -('(& (,\$ -(6' &)

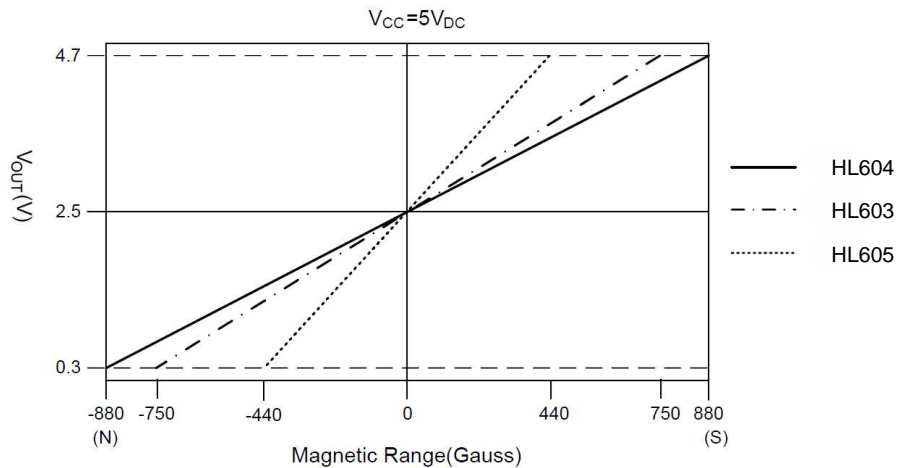
)XQFWLRQ 'HVFULSWLRQ

7KH +/ +/ +/ IDPLO\ 05/ 0LQLDWXUH 5DWLRPHWULF /LQH DU V H
 OLQH DU +DOO HIIHFV GHYLFHV ZKLFK DUH RSHUDWHG E\ WKH PDJQH WLF
 HOHFWURPDJQHW 7KH UDWLRPHWULF RXWSXW YROWDJH LV VHW E\ WKH
 WKH VWUHQJWK RI WKH PDJQH WLF ILHOG
 7KH LQWHJUDWHG FLUFXLWU\ SURYLGHV LQFUHDVHG WHPSHUDWXUH V
 FRPSHQVDWLRQ 7KHVH OLQH DU SRVLWLRQ VHQVURU V&KWRH DQ RSHUDWLC
 f& DSSURSULDWH IRU LQG XVWULDO DQG DXWRPRWLYH HQYLURQPHQW
 QHJDWLYH JDXVV PRQLWRULQJ HLWKHU RU ERWK PDJQH WLF SROHV
 7KH TXDG +DOO VHQVLQJ HOHPHQW PLQLPLJHV WKH HIIHFV RI PHFKD
 RXWSXW 7KH SURGXFW SURYLG LQJ D UREXVW GHVLJQ RYHU D ZLGH WHP
 RYHU IXOO YROWDJH UDQJH SURYLGHV D PRUH XVDEOH VLJQDO IRU KLJ
 7KH +/ +/ +/ IDPLO\ KDV D W\SLFDO VLQNLQJ RU VRXUF LQJ RXWS
 XVHV P \$ RI VXSSO\ FXUUHQW DQG SURYLVH D QGHGLFWDEOH SHUIRUPDQ
 WHPSHUDWXUH UDQJH 7KH +/ +/ +/ IDPLO\ 6HULHV VHQVURU V KDYH
 WROHUDQFHV

0DJQH WLF \$FWLYDWLRQ



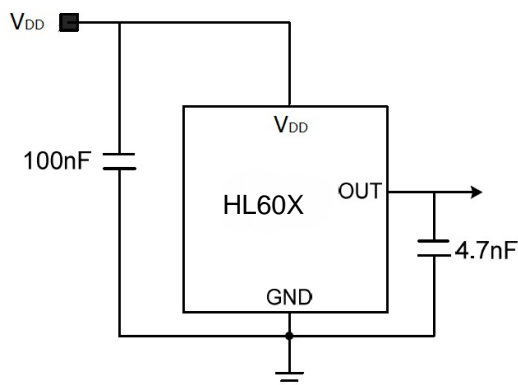
7UDQVIHU & KDUDFWHULVWLFV



3DUDPHWHUV 6SHFLILFDWLRQ & \$WR 9 ž & H[FHSW ZKHUH
RWKHUZLVH VSHFLILHG

6\PE	3DUDPHWHU	7HVW & RQGLWLR(0LC	7\:	0D[	8QLW V
9.	6XSSO\ YROWDJH	f & WR	f &		
f'	6XSSO\ & XUHHQW	%			
9+	2XWSXW YROWDJH	% *V			9
9/	2XWSXW YROWDJH	% *V			9
9 _{18//}	4XLHVFHQW 9ROWDJH	% f & 9''	9		
9 _{18//}	4XLHVFHQW 9ROWDJH	% f & 9''	9		
6.1.	6LQN & XUHHQW	9. 9 7 R&			P \$
6.1.	6LQN & XUHHQW	9. 9 7 R&			P \$
6285&(	6RXUFH & XUHHQW	9. 9 7 R&			P \$
6285&(	6RXUFH & XUHHQW	9. 9 7 R&			P \$
9 ₁	2XWSXW 5HIHUUHG	1RLVH +/ 7\$	f & &/)	
9 ₁	2XWSXW 5HIHUUHG	1RLVH +/ 7\$	f & &/)	
9 ₁	2XWSXW 5HIHUUHG	1RLVH +/ 7\$	f & &/)	
/,1	/LQHDULW\				
9 _{18//} 7	'HOWD 9QXOO DV	WHPSHUDWXUH			
9 _{18//} 9	5DWLRPHWU\ 9QXOO				
6(16 7	'HOWD 6HQV DV	WHPSHUDWXUH			
6(16	6HQVLWLYLW\ +/				P 9 * V
6(16	6HQVLWLYLW\ +/	7\$ R& 9'' 9			P 9 * V
6(16	6HQVLWLYLW\ +/				
6(16	6HQVLWLYLW\ +/				P 9 * V
6(16	6HQVLWLYLW\ +/	7\$ R& 9'' 9			P 9 * V
6(16	6HQVLWLYLW\ +/				P 9 * V
%	0DJQHWLF 5DQJH +/				*DXVV
%	0DJQHWLF 5DQJH +/				*DXVV
%	0DJQHWLF 5DQJH +/	7\$ R& 9'' 9			*DXVV
%	0DJQHWLF 5DQJH +/				*DXVV
%	0DJQHWLF 5DQJH +/				*DXVV
%	0DJQHWLF 5DQJH +/				*DXVV
%	0DJQHWLF 5DQJH +/	7\$ R& 9'' 9			*DXVV
%	0DJQHWLF 5DQJH +/				*DXVV
%	0DJQHWLF 5DQJH +/				*DXVV

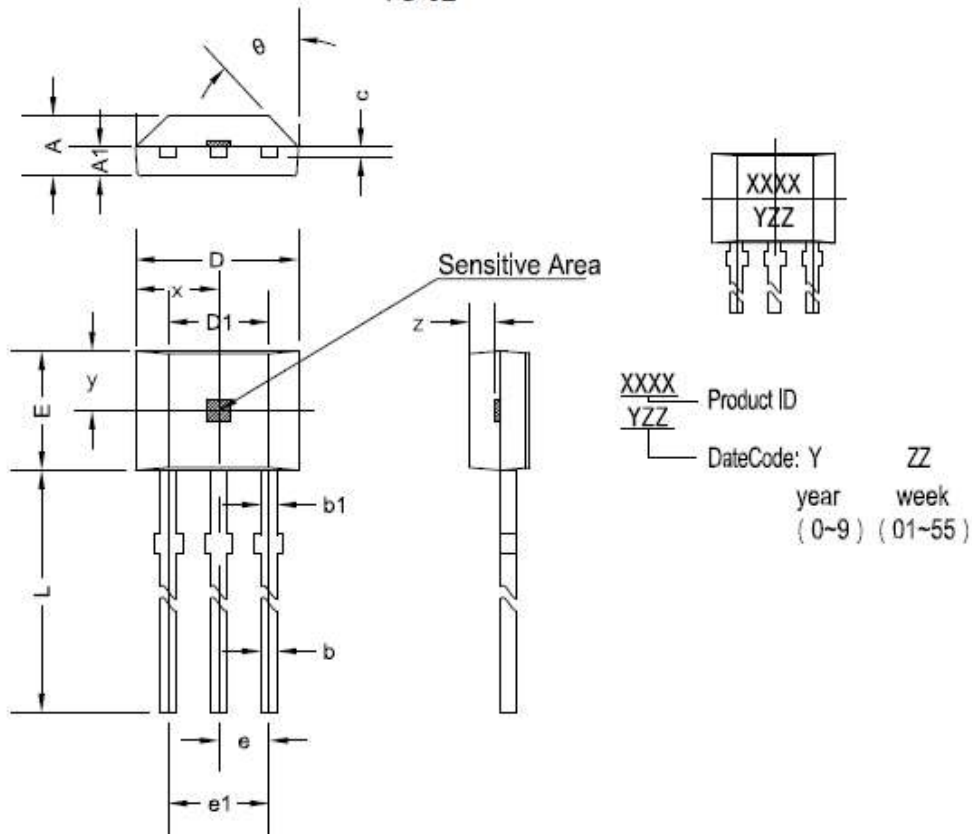
7\SLFDO \$SSOLFDFWLRQ & LUFXLW



3DFNDJH , QIRUPDWLRQ

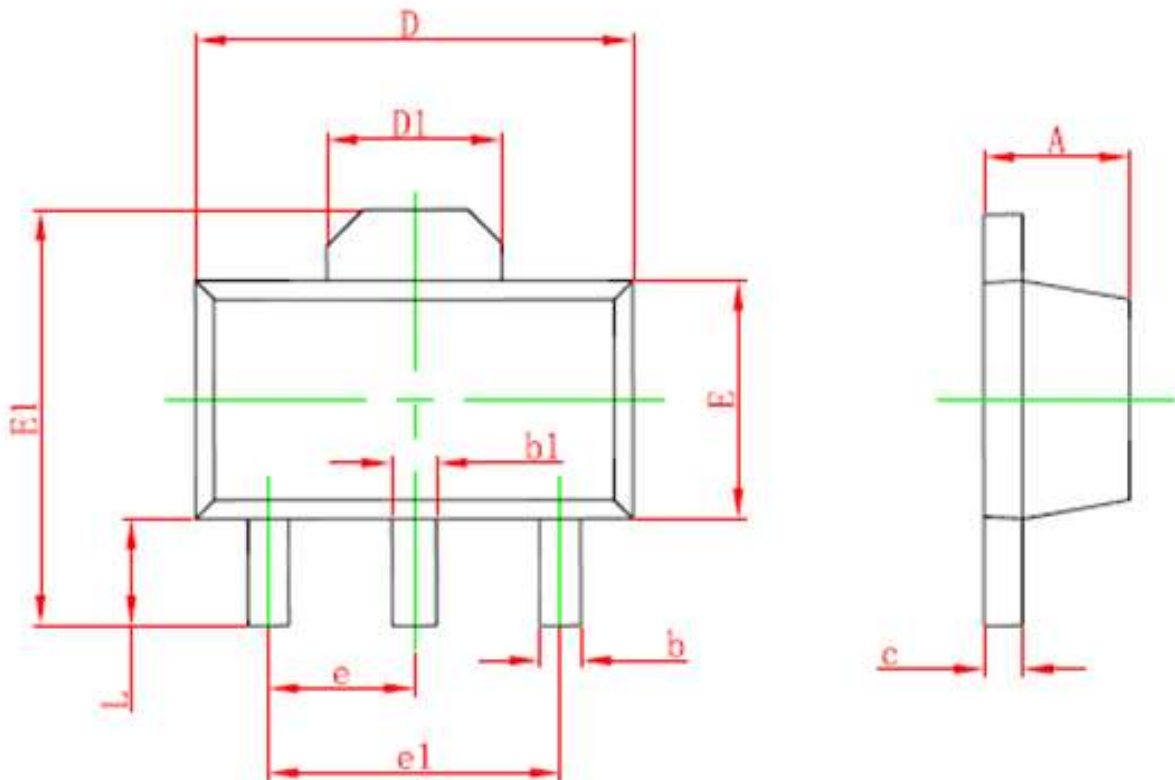
PACKAGE DESIGNATOR

TO-92



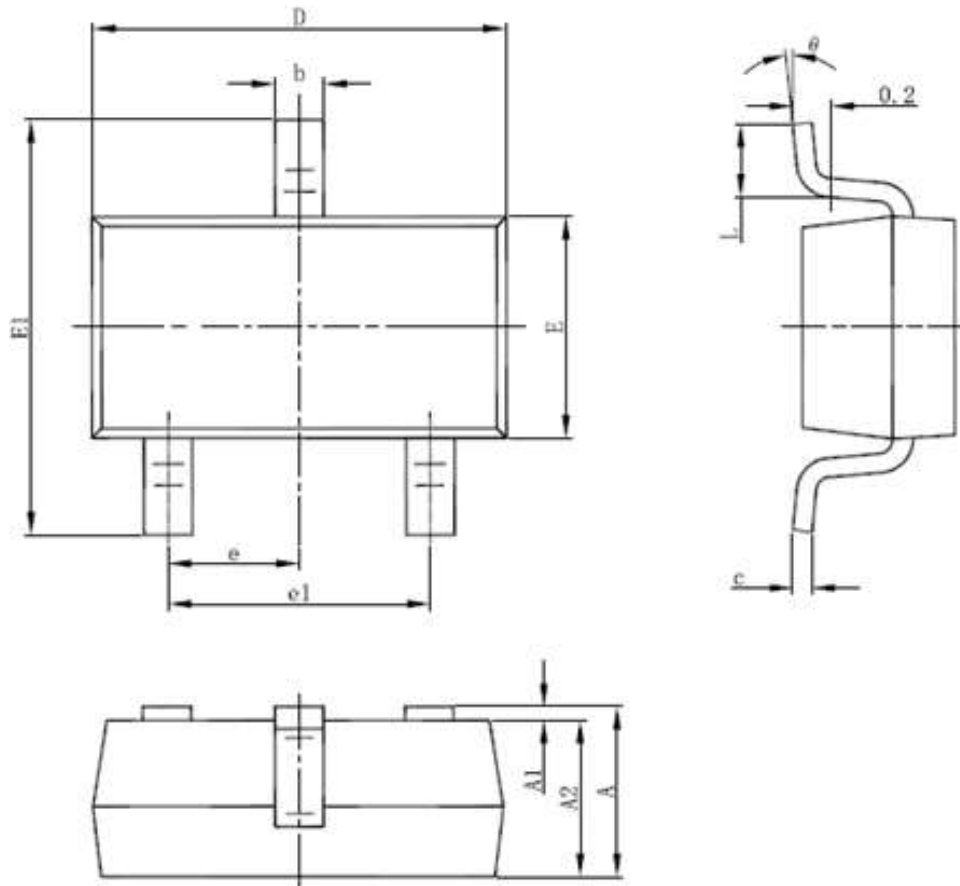
Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	1.420	1.670	0.056	0.066
A1	0.660	0.860	0.026	0.034
b	0.350	0.560	0.014	0.022
b1	0.400	0.550	0.016	0.022
C	0.360	0.510	0.014	0.020
D	3.900	4.200	0.154	0.165
D1	2.970	3.270	0.117	0.129
E	2.900	3.280	0.114	0.129
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	13.500	15.500	0.531	0.610
x	2.025TYP		0.080TYP	
y	1.545TYP		0.061TYP	
z	0.500TYP		0.020TYP	
θ	45°TYP		45°TYP	

PACKAGE DESIGNATOR SOT-89-3L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

PACKAGE DESIGNATOR SOT-23-3L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°