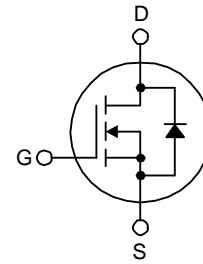




)43 1 & )43) 1 &  
 1 & KDQQHO 02(67) (7  
 9 \$ Y

'HVFULSWLRQ ) HDWXUHV

7KLV 1 & KDQQHO HQKDQFHPHQW PRGH SRZHU<sub>9,026</sub>(7 ZVOD[ .6# 9 9  
 SURGXFHG XVLQJ )DLUFKLOG 6HPLFRQGXFWRU\ IV SURSULHWDU\ SODQDU  
 VWULSH DQG '026 WHFKQRORJ\ 7KLV DGYDQFHG 026)(7  
 WHFKQRORJ\ KDV EHHQ HVSHFLDOO\ TWBZORWHG & WRUHHGXVH RQ & WDWH  
 UHVLVWDQFH DQG WR SURYLGH VXSHULRU VZLWFKLQJ SHUIRUPDQFH  
 DQG KLJK DYDODQFKH HQHUJ\ VWUHQJWK 7KHVH GHYLFHV DUH  
 VXLWDEOH IRU VZLWFKHG PRGH SRZHU V & SODQFH FWHVHG SRZHU  
 IDFRU FRUHFWRQ 3)& DQG HOHFWURQLF ODPS EDOODVW



G<sub>DS</sub>

TO-220

G<sub>DS</sub>

TO-220F

\$ E V R OXW HP X5P DW L Q J V f & XQOHVV RWKHUZLVH QRWHG

6 \ PERO	3 DUDPHWHU	)43 1 &	)43) 1 &	8 QLW
V <sub>DSS</sub>	Drain-Source Voltage	900		V
I <sub>D</sub>	Drain Current - Continuous (T <sub>C</sub> = 25°C) - Continuous (T <sub>C</sub> = 100°C)	4	4 *	A
		2.3	2.3 *	A
I <sub>DM</sub>	Drain Current - Pulsed (Note 1)	16	16 *	A
V <sub>GSS</sub>	Gate-Source Voltage	r 30		V
E <sub>AS</sub>	Single Pulsed Avalanche Energy (Note 2)	570		mJ
I <sub>AR</sub>	Avalanche Current (Note 1)	4		A
E <sub>AR</sub>	Repetitive Avalanche Energy (Note 1)	14		mJ
dv/dt	Peak Diode Recovery dv/dt (Note 3)	4.5		V/ns
P <sub>D</sub>	Power Dissipation (T <sub>C</sub> = 25°C) - Derate above 25°C	140	47	W
		1.12	0.38	W/°C
T <sub>J</sub> , T <sub>STG</sub>	Operating and Storage Temperature Range	-55 to +150		°C
T <sub>L</sub>	Maximum Lead Temperature for Soldering, 1/8" from Base for 5 Seconds	300		°C

Drain current limited by maximum junction temperature.

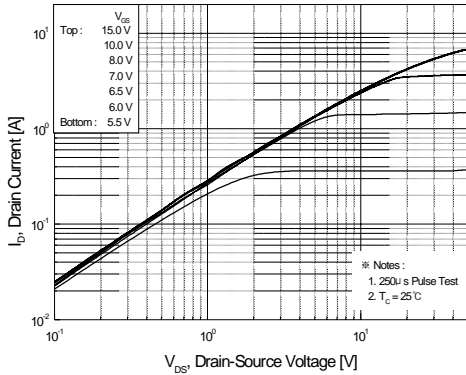
7KHUPDO & KDUDFWHULVWLFV

6 \ PERO	3 DUDPHWHU	)43 1 &	)43) 1 &	8 QLW
5 Q &	7KHUPDO 5HVLVWDQFH -XQFWLRQ WR & DVH 0D[			f &
5 Q &	7KHUPDO 5HVLVWDQFH & DD[H WR 6LQN			f &
5 Q \$	7KHUPDO 5HVLVWDQFH -XQFWLRQ WR \$PELHQW 0D[			f/&

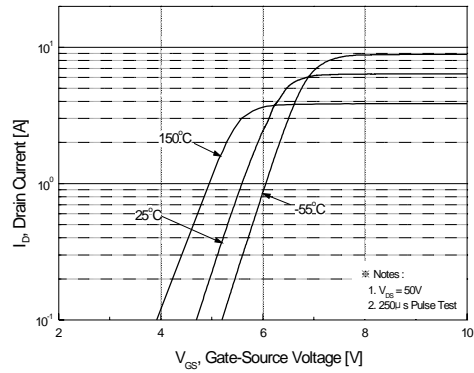
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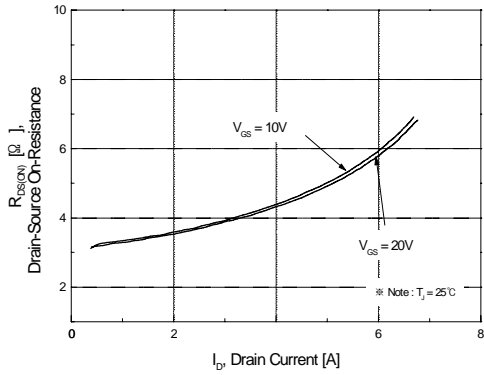
# Typical Characteristics



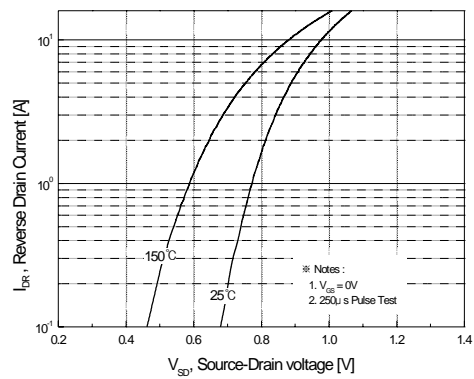
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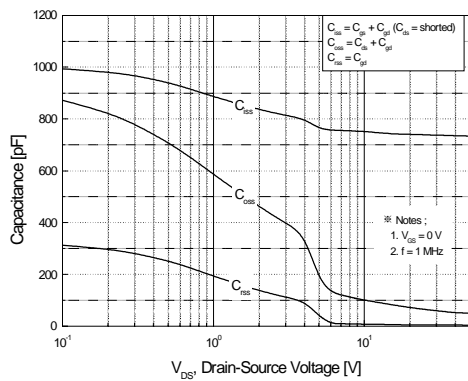
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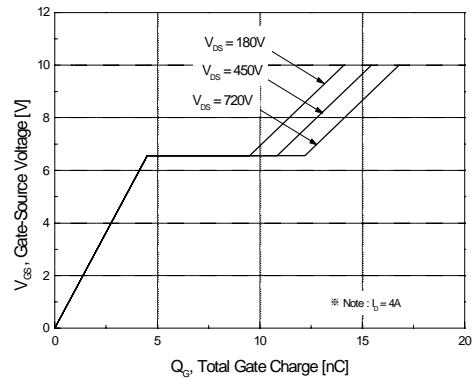
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UDLQ&UUHQWQDQG\*DWH9ROWDJH



)LJXUH%RGLRGH)RUZDUG9ROWDJH  
9DULDWLRQZLWK6RXUFH&UUHQW  
DQG7HPSHUDWXUH



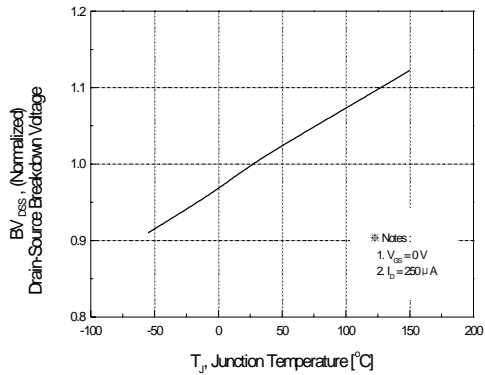
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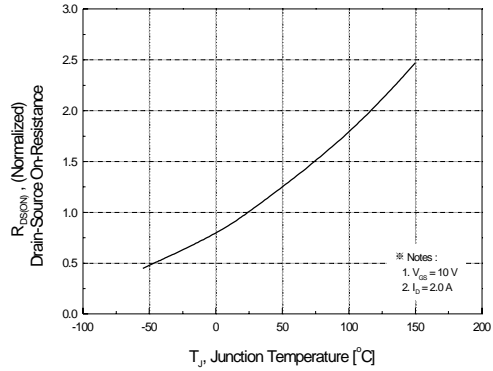
)LJXUH\*DWH&DUJH&DUDFWHULVWLFV

) 4 3 1 & ) 4 3 ) 1 2 & 1 & K D Q Q H 0 2 6 ) ( 7

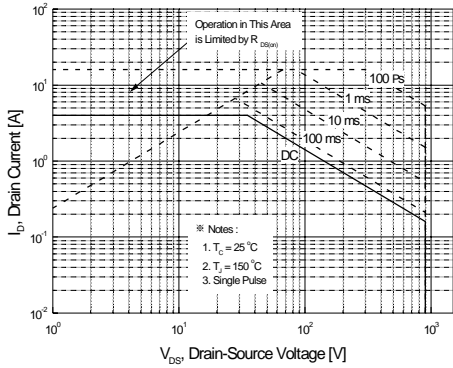
7 \ S L F D O & K D U D F A H U L V W L F V



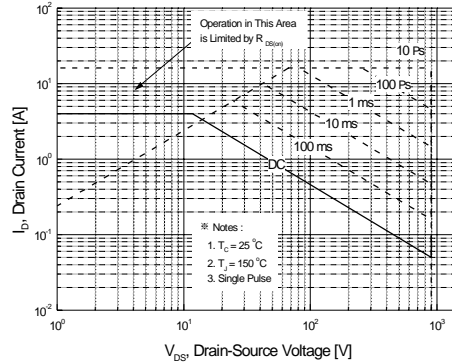
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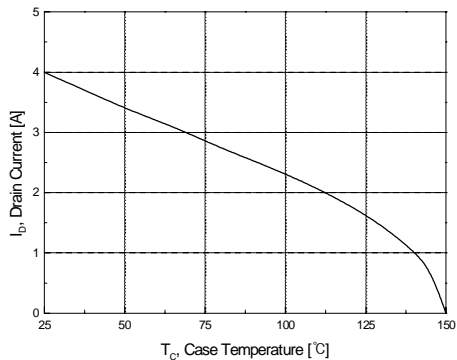
)LJXUH2Q5HVLVWDQFH9DULDWLRQ  
YV7HPSHUDWXUH



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IRU)431&



)LJXUH0D[LPXP6DIH2SHUDWLQJ\$HHD  
IRU)431&

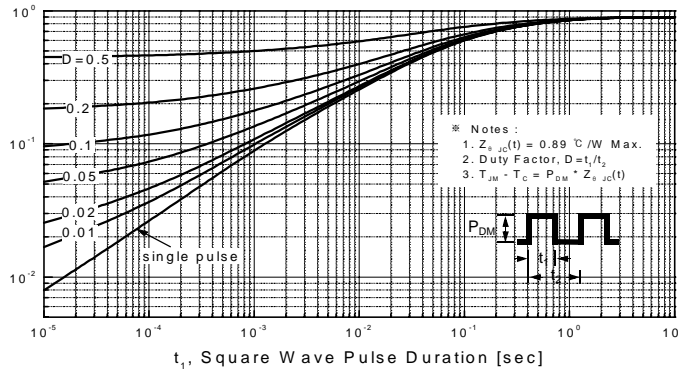


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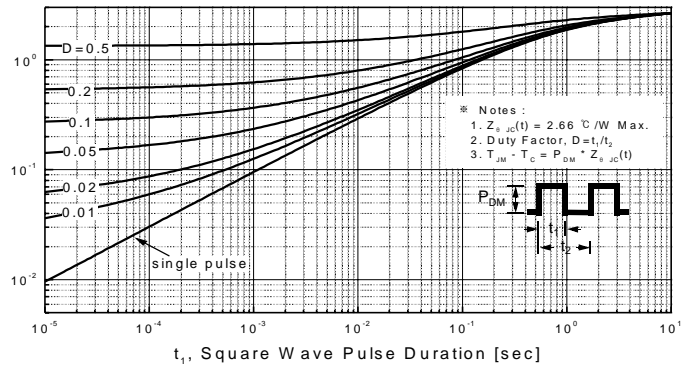
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7KHUPDO 0.89



)LJXUH7UDQVLHQW7KHUPDO5HVSQRVH&UYHIRU)431&

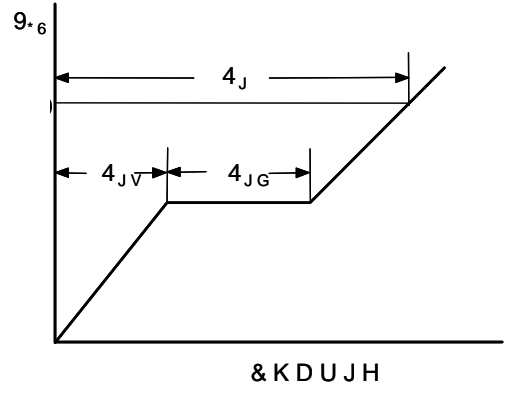
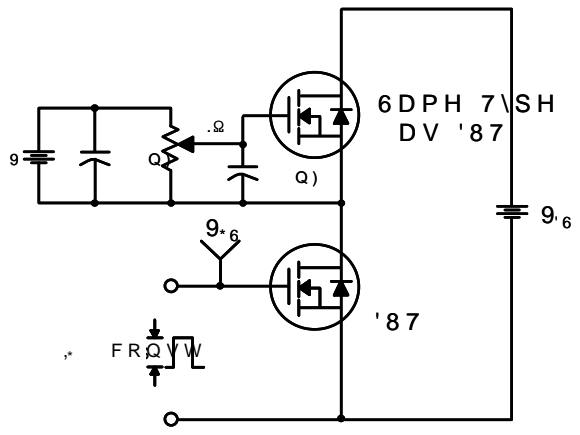
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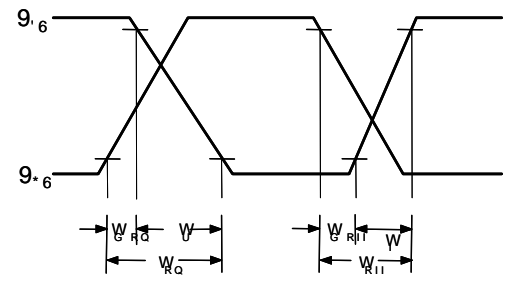
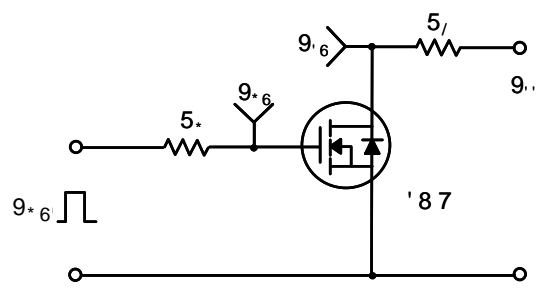
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)43 1 & )43) 1 2 & 1 & KDQD(0.26)(7

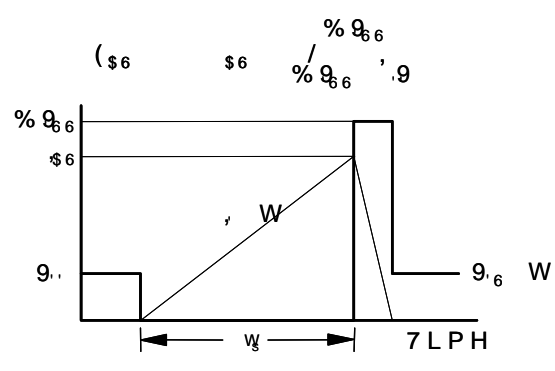
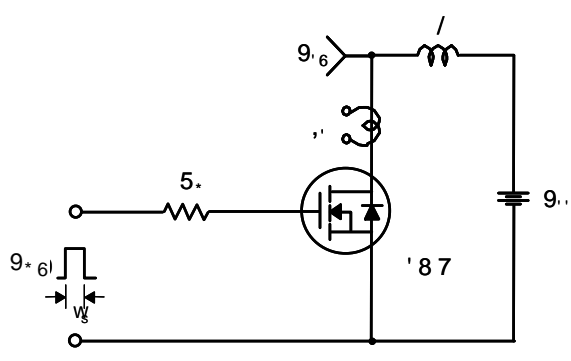
)43 1 & )43) 1 2 &1 &K D Q (H 0 2 6) (7



)LJXUH\*DW&KDUZHIV&WUFX:LDW HIRUP

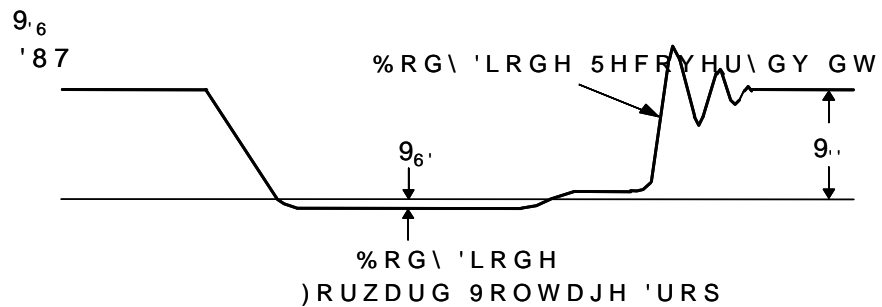
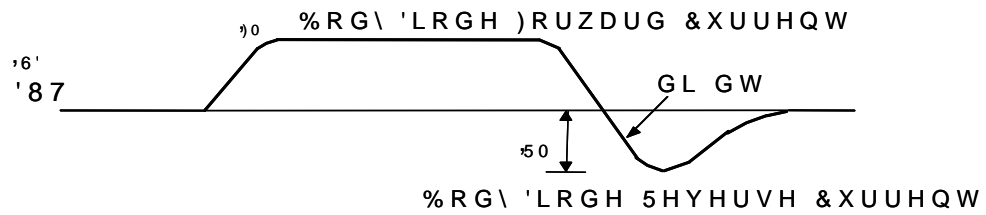
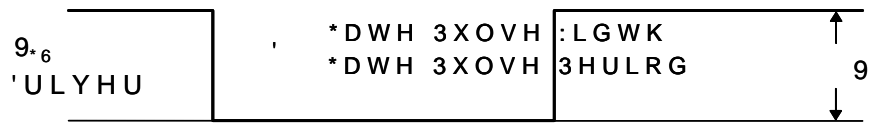
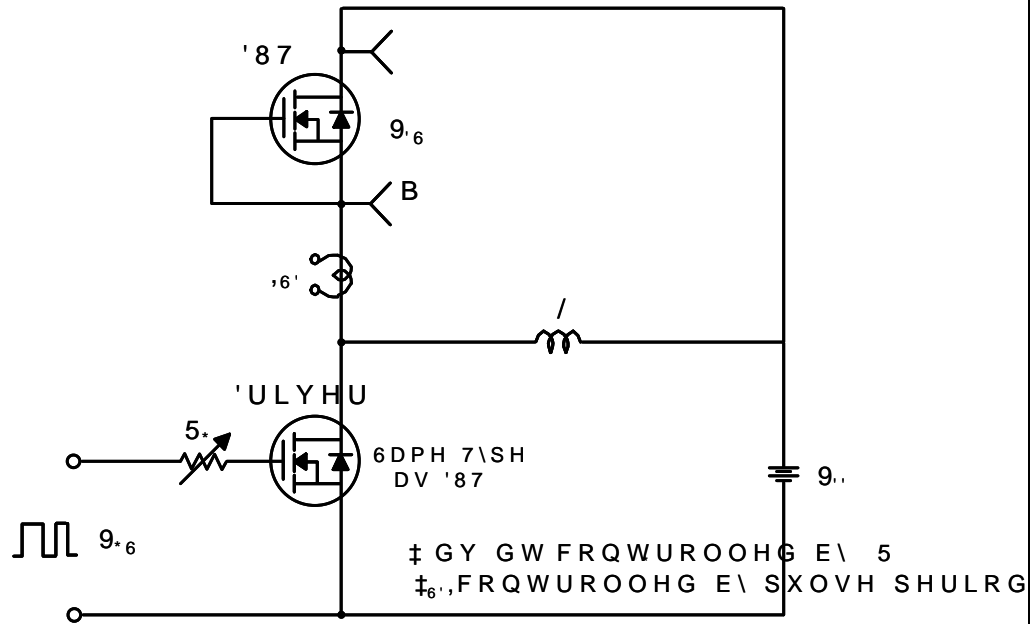


)LJXUH 5HVLVWLYH 6 7 8 9 W U F X : L D W HIRUP V



)LJXUH 8QFODPSHG , Q Z L X F W U F X : L D W HIRUP V

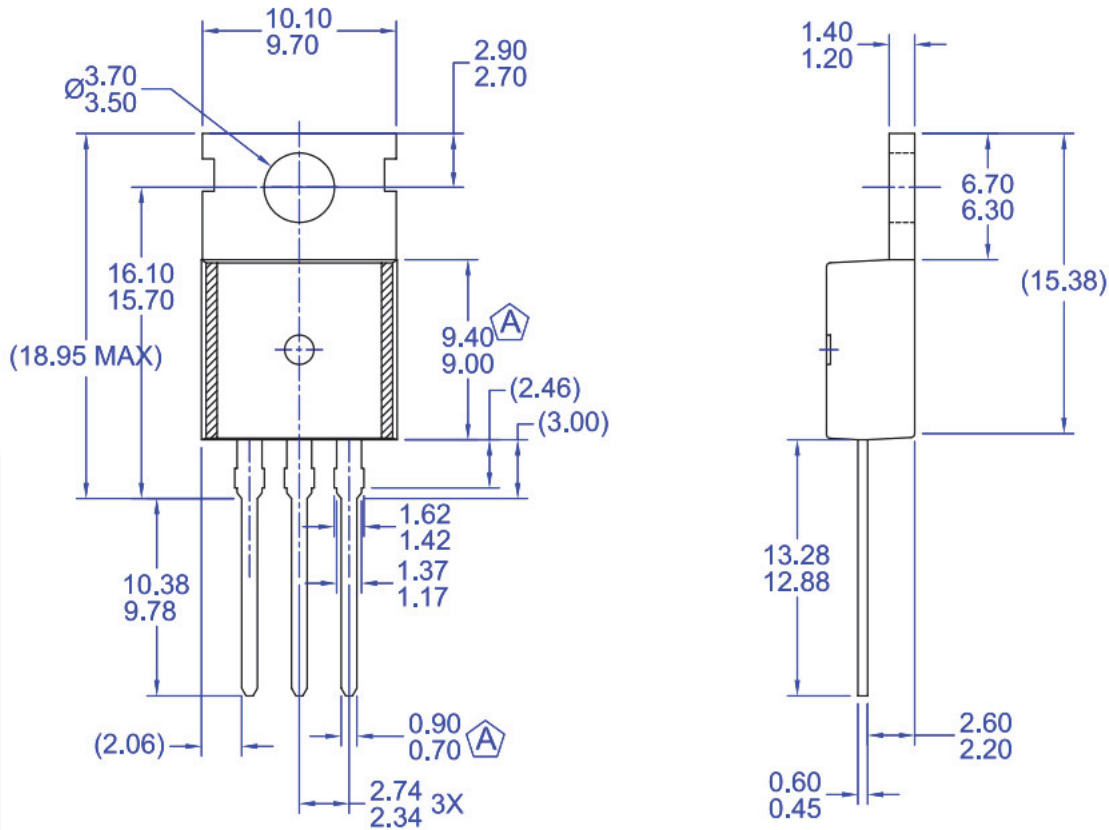
)43 1 & )43) 1 2 &1 &K D Q Q H ( 0 2 6 ) ( 7



)LJXUH3HDN 'LRGH 5GFRG MUTHVW: D Y H F X U W V

0HFKDQLFDO 'LPHQVLRQV

)43 1 & )43) 1 & 2 1 & KDQ QH064 I 77



NOTES:

- A) CONFORMS TO JEDEC TO-220 VARIATION AB EXCEPT WHERE NOTED
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.
- D) DRAWING FILE/REVISION: MKT-TO220Y03REV1

Figure . TO220, Molded, 3-Lead, Jedec Variation AB

Package drawings are provided as a service to customers considering Fairchild components. Drawings may change in any manner without notice. Please note the revision and/or date on the drawing and contact a Fairchild Semiconductor representative to verify or obtain the most recent revision. Package specifications do not expand the terms of Fairchild's worldwide terms and conditions, specifically the warranty therein, which covers Fairchild products.

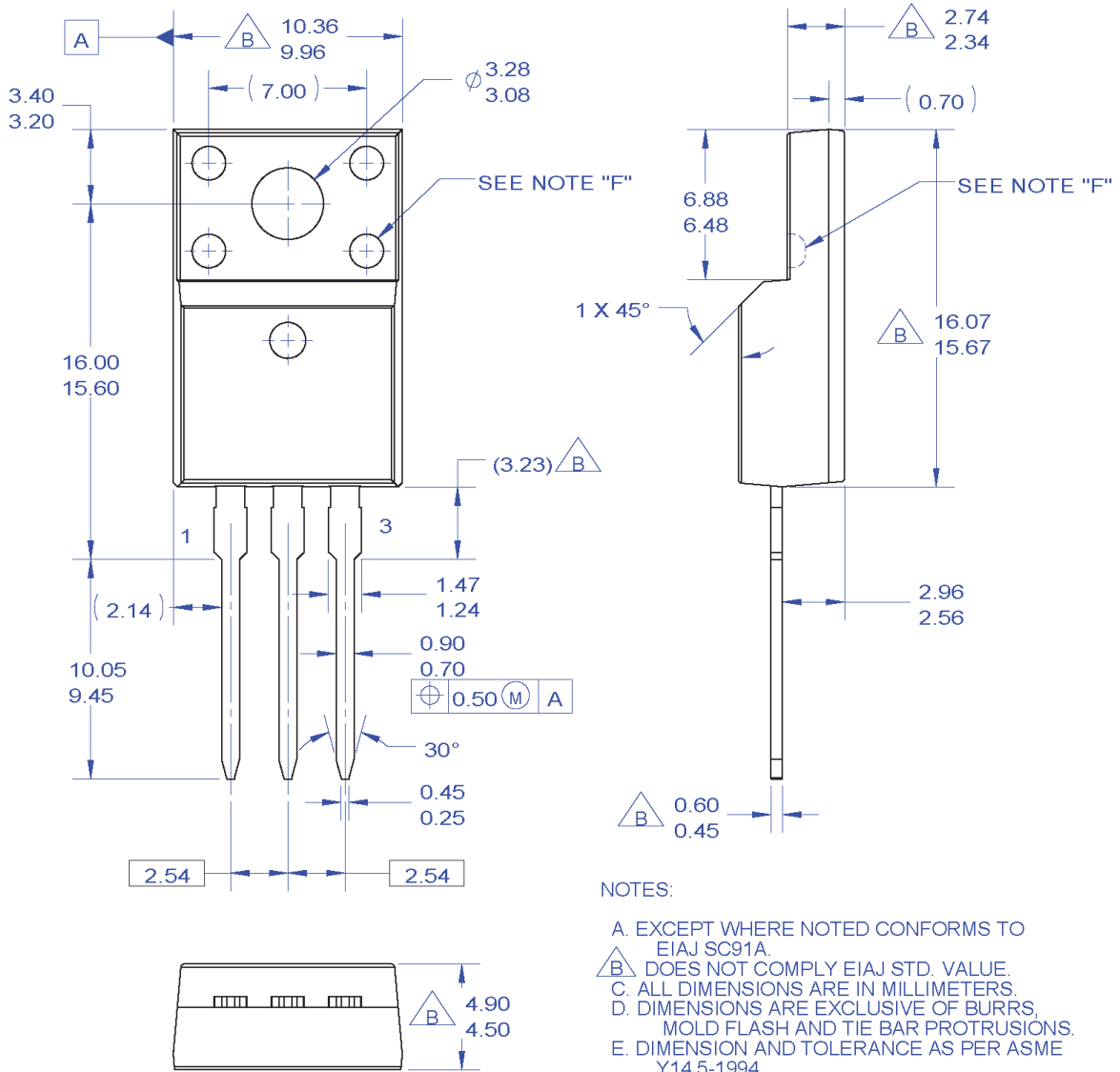
Always visit Fairchild Semiconductor's online packaging area for the most recent package drawings:

[http://www.fairchildsemi.com/package/packageDetails.html?id=PN\\_TO220-003](http://www.fairchildsemi.com/package/packageDetails.html?id=PN_TO220-003)



0HFKDQLFDO 'LPHQVLRQV

)43 1 & )43) 1 & 2 1 & KDQ QH0064)77



NOTES:

- A. EXCEPT WHERE NOTED CONFORMS TO EIAJ SC91A.
- B. DOES NOT COMPLY EIAJ STD. VALUE.
- C. ALL DIMENSIONS ARE IN MILLIMETERS.
- D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- E. DIMENSION AND TOLERANCE AS PER ASME Y14.5-1994.
- F. OPTION 1 - WITH SUPPORT PIN HOLE.  
OPTION 2 - NO SUPPORT PIN HOLE.
- G. DRAWING FILE NAME: TO220M03REV3

**Figure . TO220, Molded, 3-Lead, Full Pack, EIAJ SC91, Straight Lead**

Package drawings are provided as a service to customers considering Fairchild components. Drawings may change in any manner without notice. Please note the revision and/or date on the drawing and contact a Fairchild Semiconductor representative to verify or obtain the most recent revision. Package specifications do not expand the terms of Fairchild's worldwide terms and conditions, specifically the warranty therein, which covers Fairchild products.

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)43 1 & )43) 1 & 2 1 & K D Q Q H 0 6 4 1 7 7

75\$'(0\$5.6  
7KH IROORZLQJ LQFOXGHV UHJLVVHUHQV IDOYL K R P H J L N W H L Z C H Q W I E D Q B I P D U F U N L V R C E C O P L X F R V Q G E X D W B H V D Q Q G U L  
LQWHQG HG WR EH DQ H[KDXVWLYH OLVW RI DOO VXFK WUDGHPDUNV

\$FFX3RZHUOE ) 3)6OE  
\$; & \$ 5) (7S  
%LW6L&CE \*OREDO 3RZHU<sup>05</sup>HVRXUFBRZHU7<sup>5</sup>HQFK  
%XLOG LW 1RZOE \*UHHQ%ULGJHCE 3RZHU;6OE  
&RUH3/86OE \*UHHQ )36OE 3URJUDPPDEOH \$FWLYH '7LQ%<sup>5</sup>RVV  
&RUH32:(5OE \*UHHQ )36OE H 6HULHVCE 4)(7S 7LQ%<sup>5</sup>XFN  
CROSSVOLTE \*maxOE 46OE 7LQ\&DOFCE  
&7/OE \*72OE 4XLHW 6HULHVCE 7LQ\&RJLF  
&XUUHQW 7UDQVIHU /RULFHCEOLO\$;CE 5DSLQ&RQILXUHCE 7LQ\&3RZHUCE  
'(8;3(' S ,623/\$1\$5OE CE 7LQ\&0OE  
'XDO &RROCE 0DUNLQJ 6PDOO 6SHDNH 6RXQG /RXGHU 7LQ\&LUHCE  
(FR63\$5. DQG %HWWHUCE 6DYLQJ RXU ZRUOG P: : 7UDQW6L&CE  
(ILFHQWOD[CE 0HJD%XFNCE 6LQDO:LVHCE 7UL)DXOW 'HWHFWCE  
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0LFUR3DN CE 630S  
)DLUFKLOG 67(\$/7+CE  
)DLUFKLOG 6HPLFRQGXFWRU'ULYHCE 6XSHU5(7  
)\$&7 4XLHW 6HULHVCE 6XSHU627OE  
)\$&7 P:6DYHU 6XSHU627OE  
)\$67 2SWR+L7CE 6XSHU627OE  
)DVWY&RUHCE 2372/2\*, & 6XSHU627OE  
) (7%HQFKCE 23723/\$1\$5 6XSUH626  
)36OE 6\QF)(7OE

6\QF /RFNCE  
SYSTEM S  
GENERAL S  
7LQ%<sup>5</sup>RVV  
7LQ%<sup>5</sup>XFN  
7LQ\&DOFCE  
7LQ\&RJLF  
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7LQ\&0OE  
7LQ\&LUHCE  
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9ROWDJH3OXVCE  
;6OE

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\$V XVHG KHUH LQ  
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D Q G F Z K R V H I D L O X U H W R S H U I R Q V Z K H Q S U R S W H K H O V D X O X G U H Q R D F F R H W G D Q H H X S S B R K U W G H Y L F H R U \ V V  
L Q V W U X F W L R Q V I R U X V H S U R Y L G H G L Q W K H I D B A V O L Q H Q H F D Q E H U H D V R Q D E O \  
H[SHFWHG WR UHVXOW LQ D VLJQLILFDQW LQMXU\ RI WKH XVHU

\$17, &2817(5)(,7,1\* 32/,&<  
)DLUFKLOG 6HPLFRQGXFWRU &RUSRUDWLRQ DLUFKLOG V&RSQQWLH&RKRQWLHQLI H3RVLQCFH BVBUIQD QVZ IDWLRW HVW  
ZZZ )DLUFKLOGVHPL FRP XQGHU 6DOHV 6XSSRUW  
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SDUW &XVWRPHUV ZKR LQDGYYHUWHW QWLQSFHU P D V H S F R E Q W A M U M K L F K S D U O V R W Q G S H U B U S D G I R U H S D Q F H W L I D Q O  
DSSOLFWRQ DQG LQFUHDVHG FRVW RI SURGXFWKLRQ D Q G V D I Q Q J D F W X R Q Q P G E O X X U H F X V R V S E R M H F U R R X  
SUROLIHUWLRQ RI FRXQWHUIHLW S D U X W W R P H U F K W G S X W R K R Q J H O ) D I L Q J F R X L O D S J S D U W V H L W K K H U G L U H F W O \ I  
'LVWULEXWRUV ZKR DUH OLVWHG E\ FRXQWU\ RQ RXU ZHELVS DHH FULRW\ G D D E R F H S Q W R L B H E F W G I F B W W R P I H O  
'LVWULEXWRUV DUH JHQXLQH SDUWFKK O S H V I X O O Q L W D F W H D E Q G D W G V P H R U W D D O L V Q J W R Q Q D L V F K U D G H I V D O G O S U  
XS WR GDWH WHFKQLFD O D Q G S U R G X F W L Q I R U P D W L R Q ) D L U F K L O G D Q G R O O S S W R S U L H G V H L O W O J G E X W V  
Z D U U D Q W \ L V X X V W K D V L F O O Q R W S S U R Y L G H G D O G Z D W H D O W V E R W H D Q F H I R U S D K R V V J E H S X S R W U F R P B D I D K F K L  
FRPPLWWHG WR FRPEDW WKLV JOREDO SURVEOIR DVKHILQ SBXWMDIE RWRV SFXLQRWRU RUP SXWKRWLEFH E\ GELXWOL

352'8&7 67\$786 '(,1,7,216  
'HILQLWLRQ RI 7HUPV

'DWDVKHHW ,GHQWLILFDWLRQ 6WDWXV	'HILQLWLRQ
\$GYDQFH ,QIRUPDWLRQ )RUP	'DWDVKHHW, FROWDLQV WKH RGHSLRG XFSH GHYLFH DWR SRQ W 6SHFLIL P D I F K D Q J H L Q D Q P D Q Q H Z L W K R X W Q R W L F H
3UHOLPLQDU\ )LUVW 3URGXFW	'DWDVKHHW FRQWDLQV SUHOLPLQDU\ GDWD VXSSOH PHQWDU\ GD D Q G Q ) D L U F K L O G 6 H P L F R Q G X F W R U P D N H F K D Q V H W K D V U D Q \ W L P H Z Q R W L F H W R L P S U R Y H G H V L J Q
1R ,GHQWLILFDWLRQ )RUP 3URGXFW	'DWDVKHHW FRQWDLQV SUHOLPLQDU\ VSHHFKLOG 6HPLFRQGXFWRU UHVH P D N H F K D Q J H W D W Q R W L P H Z L W K R X W
2EVROHWH 1RW ,Q 3URGXFW	'DWDVKHHW FRQWDLQV DSSHFQGXFWLRQ DW LV GLVFRQWLQXHG E\ 6HPLFRQGXFWRU 7KH GDWDVKHHW LV IRU UHIHUHQFH LQIRUPDW

5HY