REVISION HISTORY

( ) . ; A H G< L I LJL C L CCH G; >C L LI G J; A H G< L CHI B = LL H L CH
, CCH , F; I JLI > = CH.

DEVICE ORDER INFORMATION

Orderable Device	Output Voltage	Package	Package Marking	PINS	MSL	Transport Media, Quantity
- . . ,	>D	-) &				. ; J , F

PIN CONFIGURATION

RECOMMENDED OPERATING CONDITIONS

[illegible]

PARAMETER	DEFINITION	MIN	MAX	UNIT
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			
[illegible]	[illegible]			

ABSOLUTE MAXIMUM RATINGS

[illegible]

PARAMETER	DEFINITION	MIN	MAX	UNIT
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			
[illegible]	[illegible]			

(1) [illegible]
(2) [illegible]
(3) [illegible]

ESD RATINGS

PARAMETER	DEFINITION	MIN	MAX	UNIT
[illegible]	[illegible] (1)			[illegible]
	[illegible] (2)			[illegible]

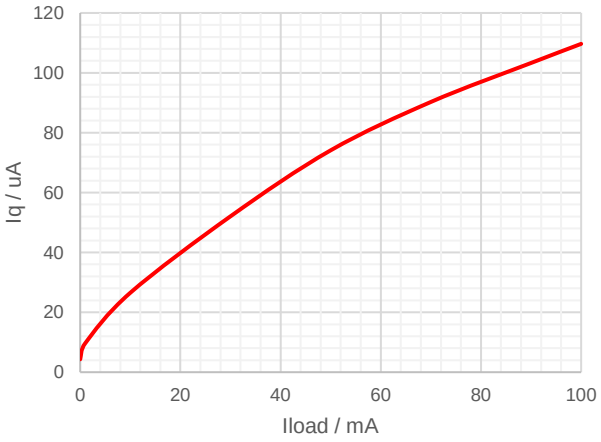
(1) [illegible]
(2) [illegible]

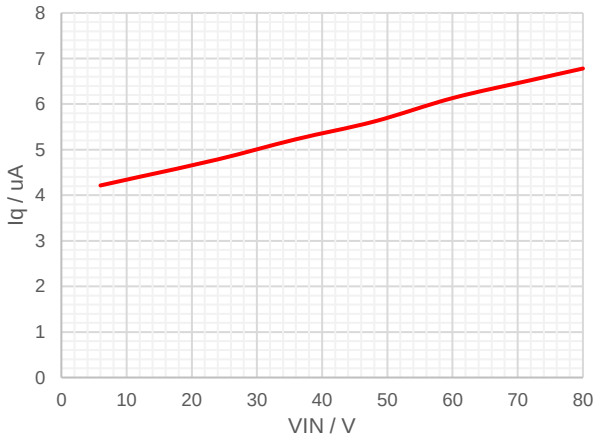
ELECTRICAL CHARACTERISTICS

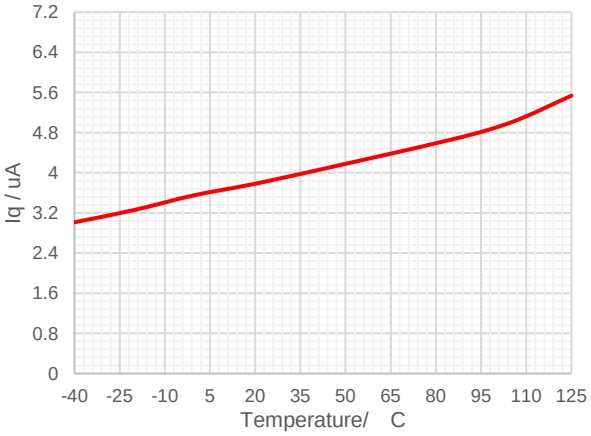
0 (0)/. 0)/. . JG; F ; F C > H> L

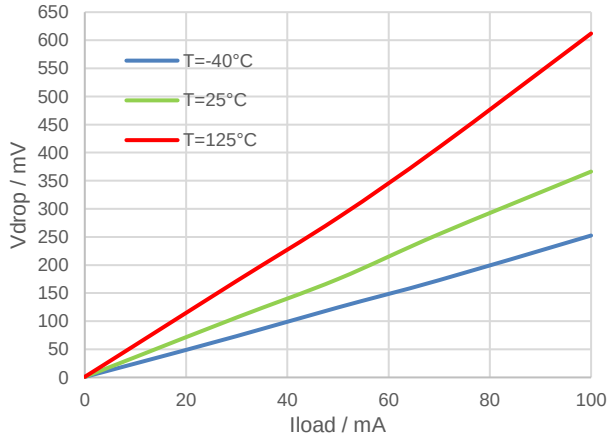
SYMBOL	PARAMETER	TEST CONDITION	MIN	TYP	MAX	UNIT
Power Supply						
0 (	) J L; GHA GHJ I F; A					0
0 /0&)	0 (/0&) . BL BI F> L C	0 (LCGHA				0 G0
- (	-B >I H= LL H LI G 0 (JGH	(0 (0				
		(0 (0				
+	+ C = H = LL H LI G (JGH	(FF; HI FF; > 0 (0 .				
		(FF; HI FF; > 0 (0 .				
		(FF; HI FF; > 0 (0 .				
		(FF; HI FF; > 0 (0 .				
Regulated Output Voltage and Current						
0	><; =E I F; A ; == L; =	.				0
		.				0
0)/.	&GH L A F; GH	0 (0)/. 0 I 0				G0
	&I ; > L A F; GH	I G I G				G0
0 ,)	LI JI I F; A	0 (0)/. 0 I G				G0
		0 (0)/. 0 I G				G0
)/.	) J = LL H	0)/. GHL A F; GH				G
)	) J = LL H RGC					G
)	) L LL H I F> <; =E	0 (0 (9 0				G
-, ,	I L JJF L D = GHL; G	0)/. 0 I G E)/.				>
		0)/. 0 I G E)/.				>
		0)/. 0 I G E)/.				>
Enable and Soft-startup						
0 (9	H; <F BGAB BL BI F>					0
0 (9&	H; <F FF BL BI F>					0
0 (9	H; <F BL BI F> B L C					G0
(9 0	H; <F JGHJ FF J = LL H	(0				
. - -	-I ; L GC					G
Power Good						
0 9,	LCGHA BL BI F> J L= H; A	0)/. 0)/. ( ) B H0)/. LCGHA				
0 9	; FRGHA BL BI F> J L= H; A	0)/. 0)/. ( ) B H0)/. ; FRGHA				
0 3-	LCJ B L C					
0 9&) 1	I J FF I F; A	VOUT=0.8xVOUT(NOM),PG sink 100uA		76		G0

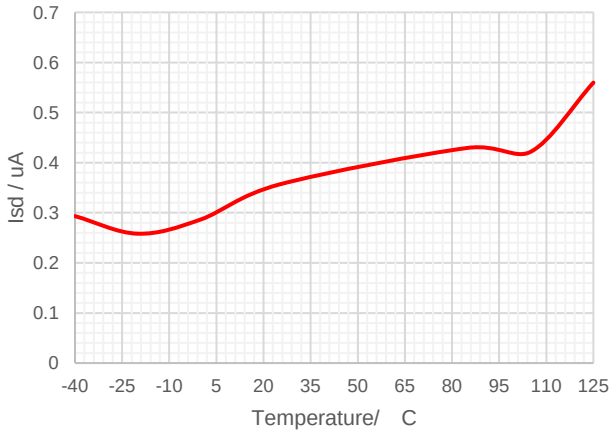
TYPICAL CHARACTERISTICS

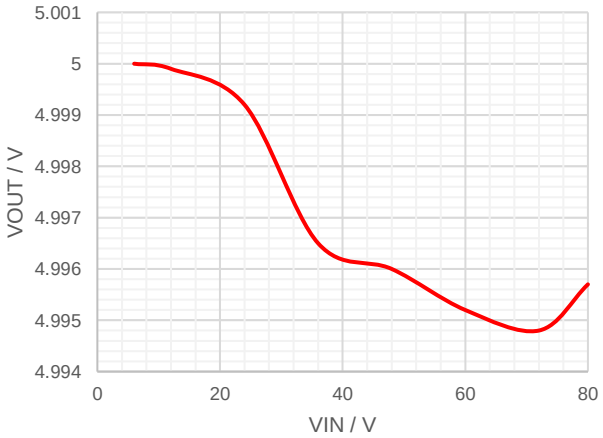


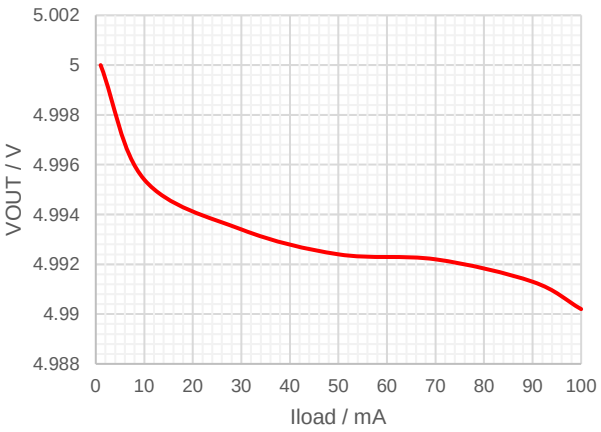


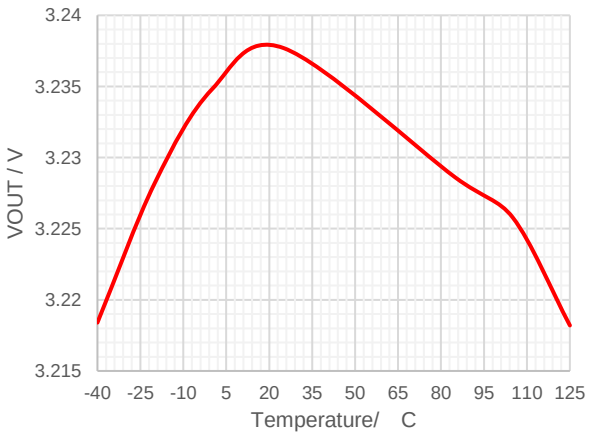


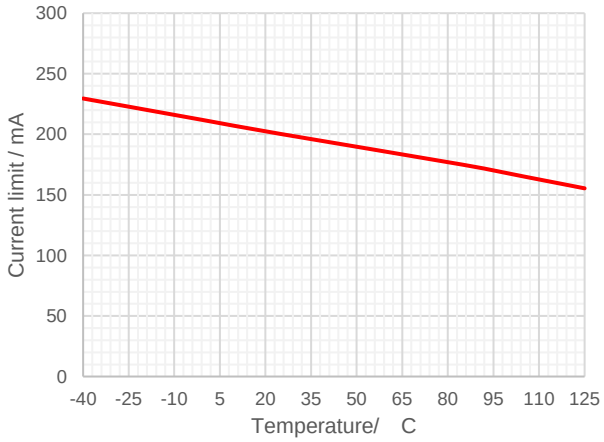


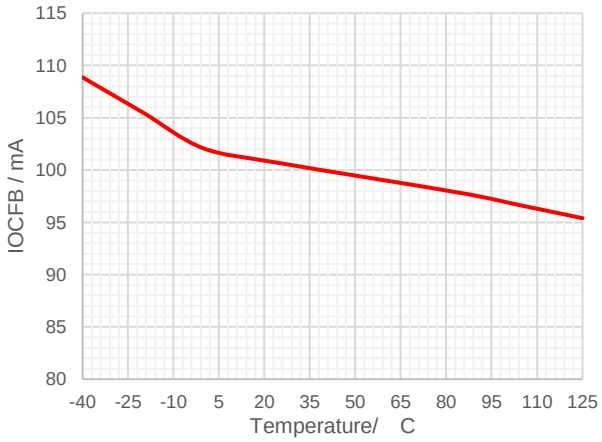





5.002
5
4.998
4.996
4.994
4.992
4.99
4.988
VOUT / V
0 10 20 30 40 50 60 70 80 90 100
Iload / mA


3.24
3.235
3.23
3.225
3.22
3.215
VOUT / V
-40 -25 -10 5 20 35 50 65 80 95 110 125
Temperature/ C


300
250
200
150
100
50
0
Current limit / mA
-40 -25 -10 5 20 35 50 65 80 95 110 125
Temperature/ C


115
110
105
100
95
90
85
80
IOCFB / mA
-40 -25 -10 5 20 35 50 65 80 95 110 125
Temperature/ C

TYPICAL CHARACTERISTICS (continued)

0) /. 0 J) /.) /. G

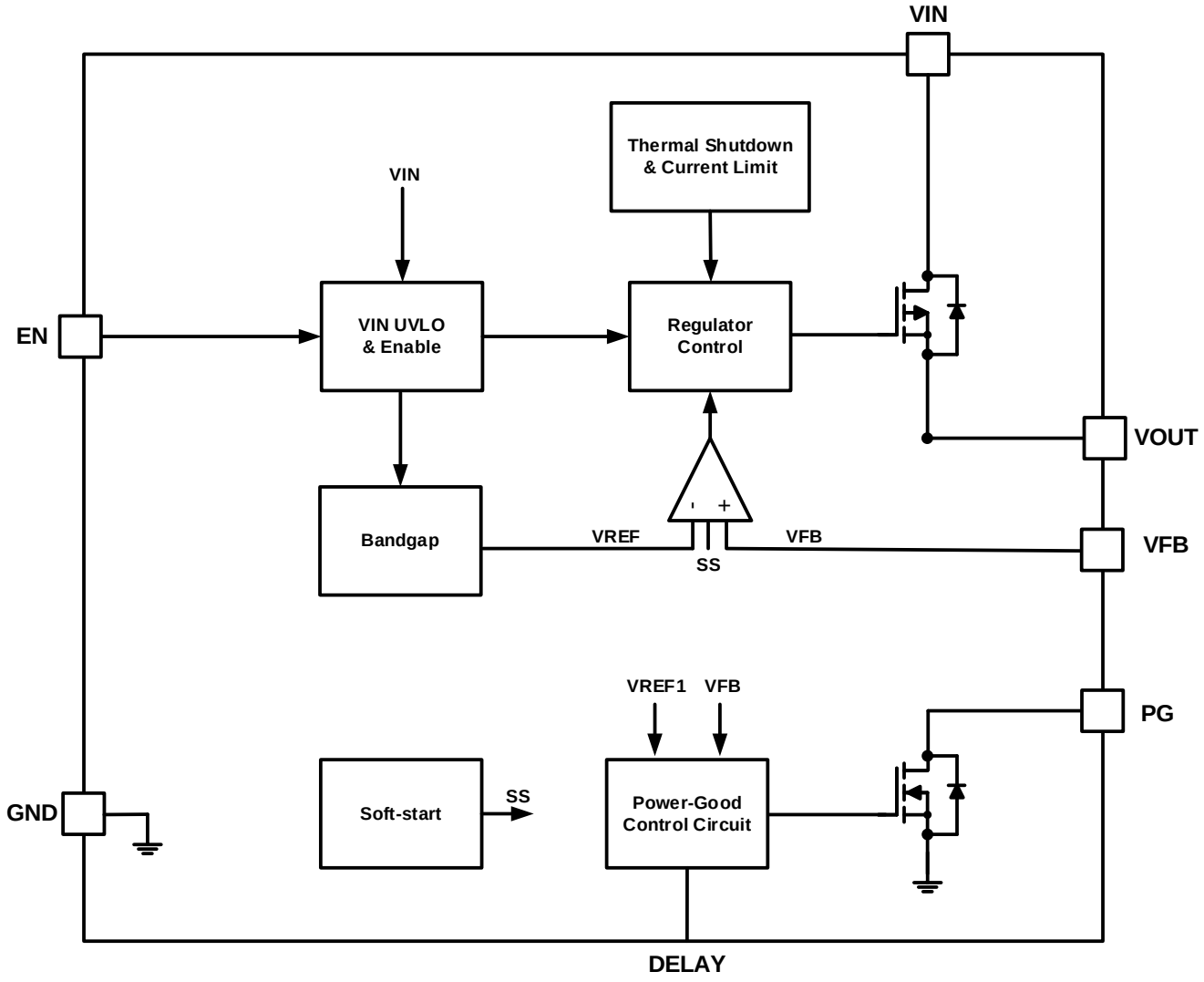
0 (00) /. 0 J) /. G

TYPICAL CHARACTERISTICS (continued)

0 (0 J) /.) /. G

0 (00) /. 0 J) /.

FUNCTIONAL BLOCK DIAGRAM



@A L H= CH; F IF=E ÇAL; G I >D) J 0 L CH

OPERATION

Overview

. B - . LC JLL > = ; L G C CLU IF; A L; HA RCH ; LL A F; I L CB L FF K C = H = LL H . B IF; A L A F; I L I J L; LL G 0 I 0 CLU IF; A ; H> =I H G K C = H = LL H ; H FF ; >

. B - . LC JLL > = C ; <F CB I J =; J; =C L ; H> = L; GC =; J; =C L C L =I GG H> > H CH LH; F I ; L CG ; I C F; LA CL B = LL H ; H> I J IF; A I L BI I > LCHA ; L J

. B - . LC JLL > = ; FI JLL C H; <F =I HLL F I L I I > ; L ; H> JLL AL; GG; <F I L I I > > F; CG BCB C L C; <F I L B ; JJRC; CH H >CHA K H= =I H CA L; CH) B L JLL = CH ; L CH=F > B 0 (CLU H> L IF; A FF =EI L = LL H JLL = CH I J B; L> BI L JLL = CH ; H> B LG; F B >I H JLL = CH

. B - . LC JLL > = JLL C ; >D ; <F I J L CH LL G 0 I 0 I H > ; H I J IF; A L CHI L; H J; =E; A I J CH JF; F L I =I H; = - . ; F

Enable and Under Voltage Lockout Threshold

. B - . LC JLL > = C H; <F > B H B 0 (JCH IF; A LC ; <I 0 ; H> B (JCH IF; A = > B H; <F BL BI F> 0 (9 . B > C C >C; <F > B H B 0 (JCH IF; A ; FF < FF 0 I L B H B (JCH IF; A C < FF 0 (9& H LH; FJ FF J = LL H I L= I (JCH; FFF B > C H; <F B H (JCH FF;

I L; BCAB L G / 0&) BL BI F> =I HH = ; H LH; FL C I L>CC L , ; H>, LL G 0 (I (BI H CH CA L . B / 0&) LCCHA; H> ; FFCHA BL BI F> =; H< =; F= F; >< K ; CH ; H> K ; CH L J = C F

1 B L

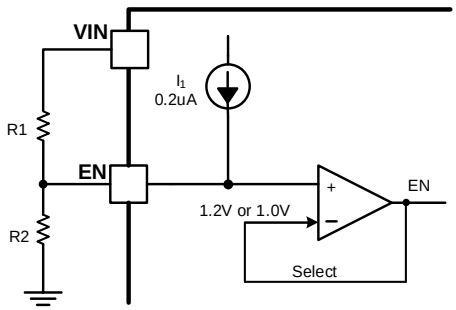
0 (LC 0 CH LC BL BI F> I H; <F B > C

0 (B 0 CH B L C BL BI F>

; H> =I F> < H AF = > CH B =; F= F; CH

0 (9 0

0 (9& 0



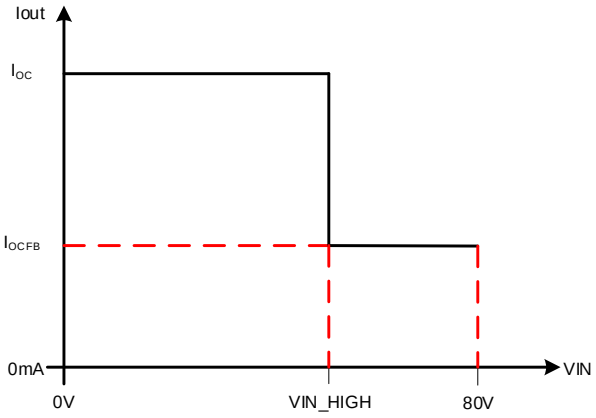
CA L - G / 0&) < H; <F > CC

Regulated Output Voltage

1 B H B CLU IF; A C BCAB L B; H 0)/ . ( ) 0 ,) I J JCH C B L A F; > I J <; > I H B L K C > IF; A L CH 1 B H B CLU IF; A ; FF < FF 0)/ . ( ) 0 ,) I J JCH L; =E B CLU IF; A GCH B >LL JI IF; A <; > I H B FF; > = LL H 1 B H B CLU IF; A >LL J < FF / 0&) BL BI F> B I J E J B I 0&) H I B F

. B I J IF; A C HI LA F; > B H B > G C CGI = LL H RGC 1 B H; = LL H RGC H I == L B LA F; I L< AGI I B ; J < =; I B GH=L ; GIJI L>C Q; CH B LG; F B >I HC LQAA L > B > G LH I L B > G =I I F >I H B GI LH; F B LG; F B >I H=QC= C LH B > G <; =EI H B I J = LL H ; F=I H>QCHJ L C B > G = =F < H= LL H RGC; H> B LG; F B >I H

1 QB B I L= LL H VIN_HIGH Control ; L B - . LC JLI > = I F> < GI L LI < ; H> ; L B HI L= LL H ; F ; H> BI L GA H I == L C; FI L K QC B G; QG G IF; >GA= LL H BI F> < G; IF L B; H) > LGA ; L J . B =B; L; = LC G C BI H GI B I IF GA QA L



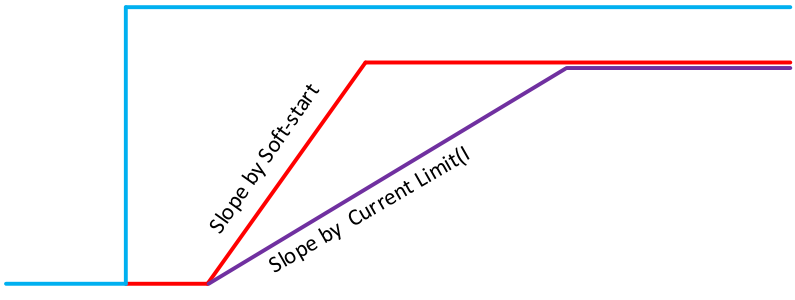
QA L LL H &QG C QB I F><; =E ; L

Internal Soft-Start

. B - . LC JLI > = GI AL; ; H GI LH; F I ; L =QC= C B; L; GJ B L L H= I F; A LI G LI I F I 0 L L H= I F; A GI B (JGI C J IF > < IF 0 &) GF< B I ; H> B GI LH; F I ; L L . B I ; L ; FI L > LGA B >I H> I B LG; FI LF ; >GA

IF QA L BI B ; L J ; I LG ; G; IFI J =; J; =QI L ; H> F; LA I J =; J; =QI L 1 B HI J =; J; =QI L C G; IF I L ; GJF B IF J I 0) /. C RGC > < LL H RGC) ; 0 (VIN_HIGH ; H> B IF J I 0) /. C RGC > < = LL H RGC) B H0 (VIN_HIGH

H- . LC JLI > = JG; F. C ; H> JG; F) C G ; H> JG; F) C G =I F> B I IF GA I LG F; I LGHCC; F ; L J QG =; F= F; QH



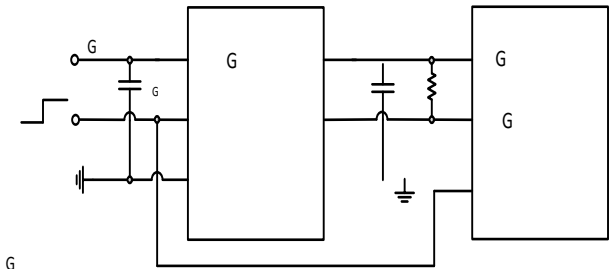
QA L -I ; L 1 ; I LG) J ; J; =QI L

Power-Good and Power-Good Delay

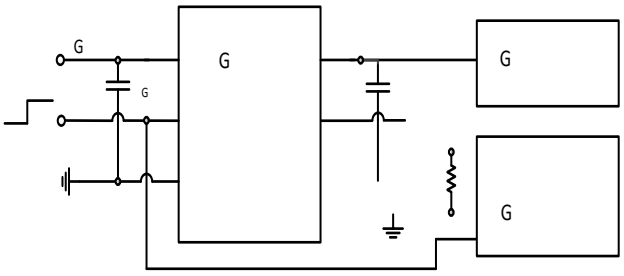
. B JI LAI I > JCHC ; HI J H >L; CHI J ; H> =; H< =I HH = > I ; H 0 I LFF LL; CF BLI AB; H LH; F J FF J L C I L . B I J C BCAB CGJ >; H= B H0) / . C AL ; L B; H B LCJ BL BI F> 0 9, 0) / . ( ) 0) / . >LI J < FF 0 9 0) / . ( ) B I J H >L; CHI J LH I H; H> J FF B I J FF I J I F; A GI HCI LCHA C H H > > B JCHI =; H< F FF; CHAI L=I HH = > I (

B JI LAI I > > F; CG C H H AB I L I G ; JJFG; CH =I F> =I HH = ; LH; F=; J; =CI L LI G & 3 JCHI (BC =; J; =CI LC =B; LA > LI G 0 I 0 < B & 3 JCHI = LL H &3 ; H> A H L; L; > F; CG When CDELAY is used, the PG output is high-impedance when VOUT exceeds VIT, and VDELAY exceeds VREF. The power-good delay time can be calculated using: tDELAY = (CDELAY × VREF)/IDELAY. For example, when CDELAY= 10 nF, the PG delay time is approximately 12 ms; that is, (10 nF × 1.2V) / 1 µA = 12 ms.

. I H L JLI J LI J L; CHI B JI LAI > ; L G; CHI; CHI 0 (0 0 (9 (; FFF =I HH = CH I JCHI =C= C CB B ; G I L>C L H JI L JJF I F; A I B &) 0) / . F F FF ; L B =I HH = CH ; GJF



CAL I HH = > I &)) J



CAL I HH = > I B I B L I L- JJF

FF CAL BI B ; L J; H> B >I H C; CH B H FF JI L J; H> JI L>I H

B JI CHI B CHJ I F; A ; L I LC LI G I 0 &) C CHI B >I H < =; 0 (C < FF C / 0 &) BL BI F> ; H> I J I F; A C 0

B JI CHI B 0 (I F; A L ; =B / 0 &) BL BI F> F F; H> &) ; L =B; LACHAI I J =; J; =CI L 0) / . LCCHA J > C > CHI > < CHI LH; F I ; L H= CH

B JI CHI B 0) / . I F; A L ; =B ; FGI B 0 (I F; A ; CLC ; L; H> &) A CHI >LI JI L ACH . B >C L H= < H0 (; H> 0) / . C B >LI JI I F; A

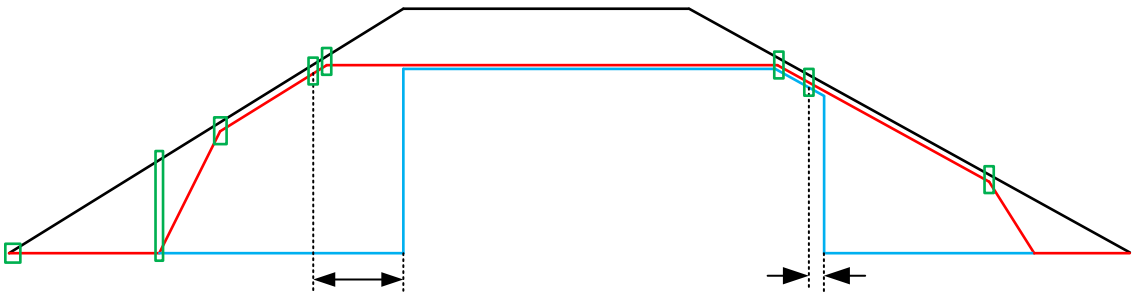
B JI CHI B 0) / . L ; =B BL BI F> 0 9, 0) / . ( ) ; H> LI G BC JI CHI &) =I H B JI L AI I > > F; CG L BC > F; B JCHLC I BCAB F F BI CHA B; 0) / . C I E

B JI CHI B 0) / . L ; =B C H I GCH; F ; F 0 L CH ; B 0 (; L I < BCAB L B; H 0) / . ( ) 0 ,) ; H> &) A CHI L A F; CH L ACH

B JI CHI ; B 0 (I F; A FF JI L>I H; H> &) L LH I >LI JI L ACH; A; CHI

B JI CHI B 0) / . >LI J < FF BL BI F> 0 9 0) / . ( ) ; H> &) ; L =I H CHA B JI L AI I > > ARC=B CG BCB CF L ; 0) / . H> L BI I =; > I L ; GJF < RCHI FF; > L; H CH L JI H L BC > F; B I J C BI L > I 0 F FI BCABRCAB JI L ; CF ;

B JI CHI B 0 (I F; A C FF L B; H CHJ I F; A / 0 &) BL BI F> GCHI / 0 &) B L C F F; H> &) AI CHI B B >I H ;



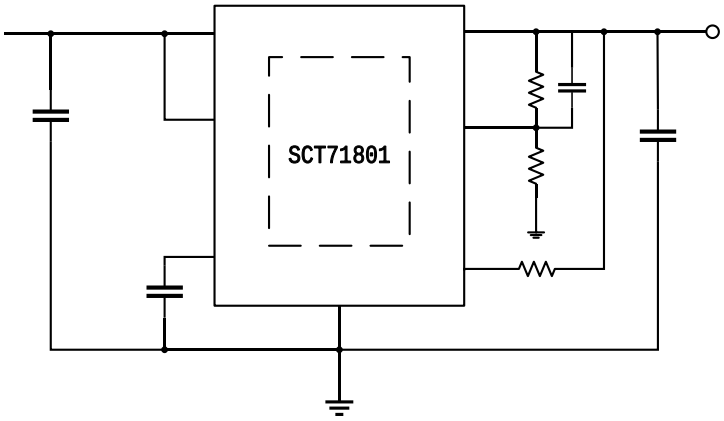
@A L - ; L J ; H> - B >I H ; GJF - . - LC

Thermal Shutdown

. BC > G @H=I LJI L; ; B LG; F B >I H . . =@= C; ; JLL = @CH LL G I LB ; @HA I L=I H@HI H LG; F I J L; @CH B DH= @CH GJ L; L BI F> H = > B . . LQ JI @I . B DH= @CH GJ L; L = >@HA B . -

APPLICATION INFORMATION

Typical application 1:

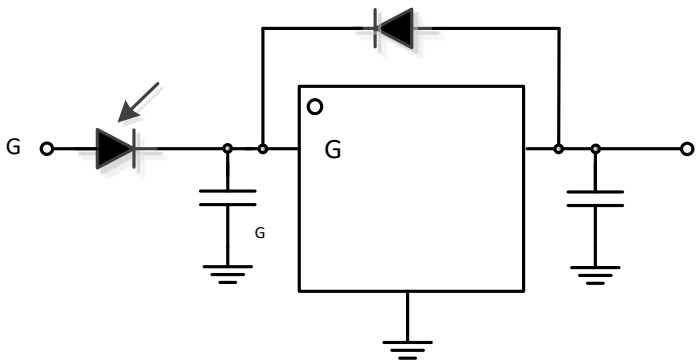


@A L - . . JG; F JJFG; CH-=B G; G

Design Parameters

Design Parameters	Example Value
HJ 0I F; A	0 (ILG; F 0 0
) J 0I F; A	0 I L 0 0
; CG G) J LL H	G
) J ; J; =CI L, ; HA	L=I GG H>
HJ ; J; =CI L, ; HA	L=I GG H>
FF J L CI LI JI LAI > ,	E

Typical application 2:



@A L - . . JG; F JJFG; CH-=B G; G CB, L IF;LC C>

Design Parameters

Design Parameters	Example Value
HJ 0I F; A	0 (I LG; F 0 0
) J 0I F; A	0 I L 0 0
; CG G) J LL H	G

Output Voltage

. B I J IF; A C < ; H LH; FL C I L>CG L, ; H>, CI JG; F; JJFG; CH =B G; G , =I GG H> > , L C; H= C E / K ; CH I =; F= F; ,

B L

0, C B ><; =EL L H= I F; A JG; F 0

Table 1: Compensation Values for Typical Output Voltage/Capacitor Combinations

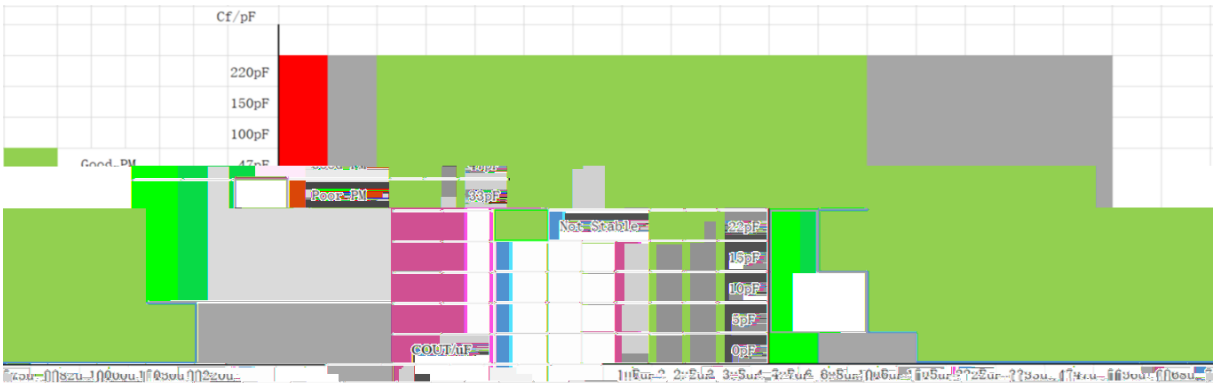
0I 0	) / .	J	, E	, E	) / . -, I J CH; F

Input Capacitor and Output Capacitor

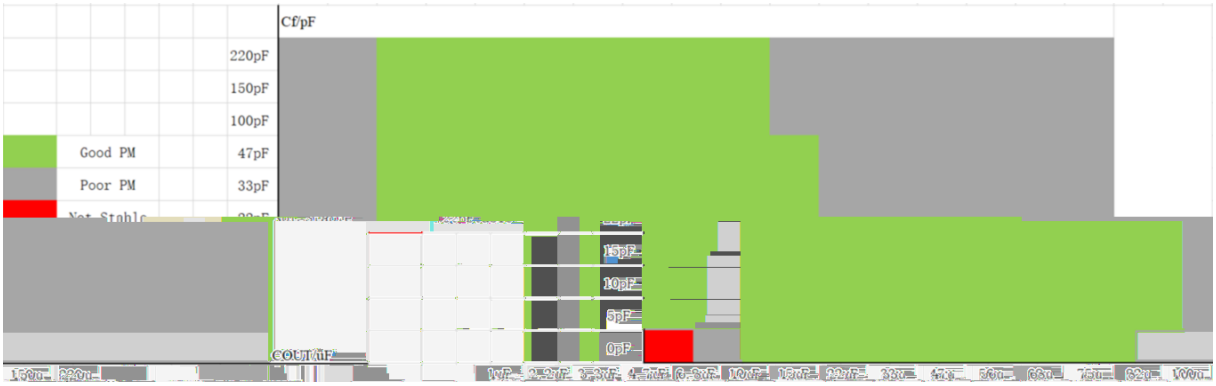
- . L =I GG H> ; >>CA; I LAL ; L=; J; =CL CB; < J; =; J; =CL LCI J; L; FF F; 0 (JCI I E J B CU IF; A ; <F FGCI G F=LI F G=; J; =CL LI LI B L=; J; =CL CB BCAB=; J; =C; H= C AA > I L B GJI L CB F; LA IF; A JG . B IF; A L; CAI B =; J; =CL G < AL ; L B; H B G; CG G CU IF; A

. I H L FI J ; <BC B - . JLI > = L K C. ; H I J =; J; =CL CB ; GCKG G =C =; J; =C; H= ; F I H> B JLI > = =I P> JJI L I J =; J; =CL L; HA LI G I ; H> CB ; H -, L; HA < H ; H> - . L =I GG H> F=CA; 2 , I L2 , J = L; G= =; J; =CL CB F -, I L GJ L; L L; HA I CGJLI B F; > L; H CH L JI H

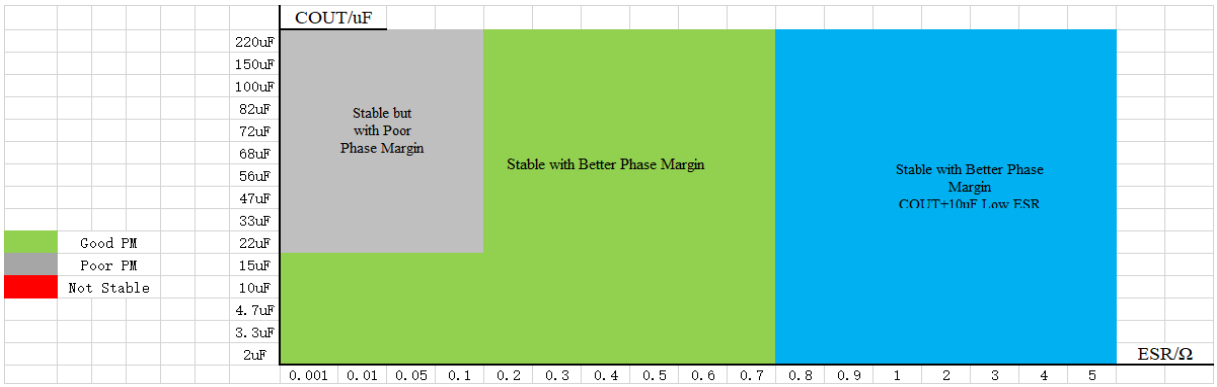
1 B H CA F; LA I J =; J; =CL CB BCAB L -, L C I L I L ; GJF I J F=LI F G=; J; =CL CB -, L C I L CI B ; JJFG; CH - . L =I GG H> ; >>CA L; F -, I J =; J; =CL J; L; FF F =I HH=CH CB B F; LA F=LI F G=; J; =CL BC CF RGCI; B H> L BI I L BI I IF; A =; > < B F; LA -, L C I L; H> A < LF; > L; H CH J LI LG; H=



@A L - . > I L ; L> ; J; =CI L L =I GG H>, E 0) /. 0



@A L - . > I L ; L> ; J; =CI L L =I GG H>, E 0) /. 0



@A L - . - ; <CC 0 -) J ; J; =CI L

Power Dissipation and Thermal Performance

I L>C CJ; CH=; > < I F; A >LL J ; =LL B &) ; H> < B I J = LL H FF CHA BLL AB B > G H > I < >C CJ; >I LL G B =BCJ . B G; CG G DH= CH GJ L; L C > J H> H I H JI L>C CJ; CH J; =E; A B F; I H G< LI > F; L F; L B G=EH ; H> B ; G<CH GJ L; L

LGHA H LG; FI J L; CH &) DH= CH GJ L; L BI F> H = > I L F CG; L F GH> LGL; CH I B JLL J LC I B =BCJ / GHA < FF K ; CH I =; F= F; B JI L>C CJ; CH; H> CG; B DH= CH GJ L; L

. B JI L>C CJ; CH=; H< =; F= F; > GHA K ; CH =; ( )/. B LG 0 ((GI K ; CH =I F> < GAH L >

. B DH= CH GJ L; L =; H< CG; > GHA K ; CH , 90 C B DH= CH I ; G<CH B LG; FL C ; H= <; >I H= I G L 0 LC B ; JJ FG; CH; H> ; FF G=CH G; LAGI GI B B LG; F> GAH < B I FF GHA G BI > C > I =; F= F; B DH= CH GJ L; L .

, 90 C ; =LG=; FJ; L; G L; H> > J H> I H G; H ; = I L =B; B I FF GHA
I L>C CJ; CH
CL GJ L; L FF
; L ;
I JJ LB ; GHE; L ;
(G< LI B LG; F C; H> L B J; =E; A
>D= H =I GJI H H JF= G H

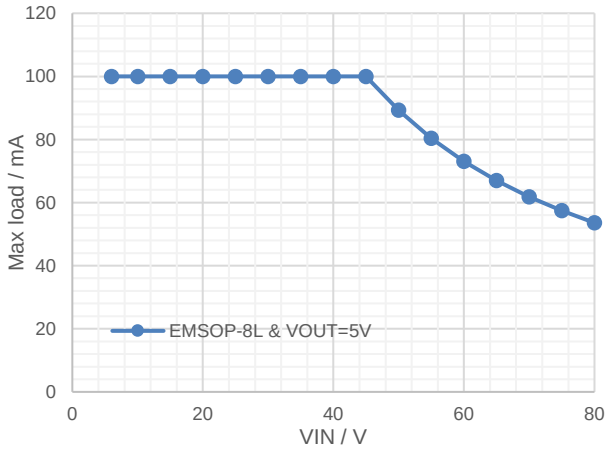
I L B - . JLL > = B G; CG G ; FF ; <F JI L>C CJ; CHI >C L H J; =E; A ; FC > GI B I FF GHA ; <F ; H> B L F ; L <; >I HI L 0 <I ; L> F; LA LJI L>C CJ; CH GF LGAA L B LG; F B >I H JLL = CH ; L F =I F> =; F= F; B , 90 I >C L H J; =E; A . B I FF GHA ; <F CD I L I LL L H= <; >I HI L 0 JF; F; H AB G; LAGI B H I > GAH B LG; FJ LI LG; H=

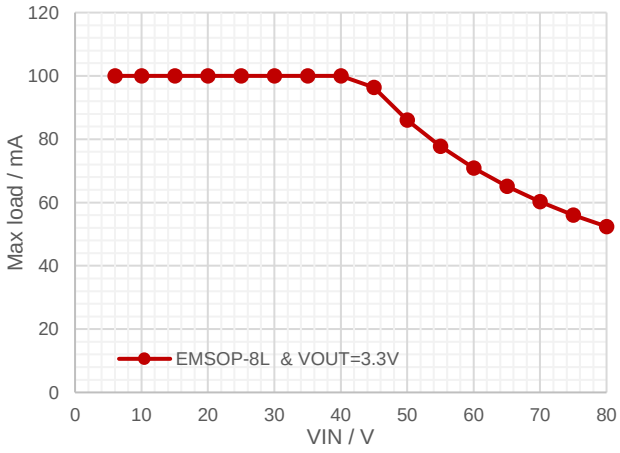
. B GHI LG; CHI I L 0 F; L I GHH L I GG GG C

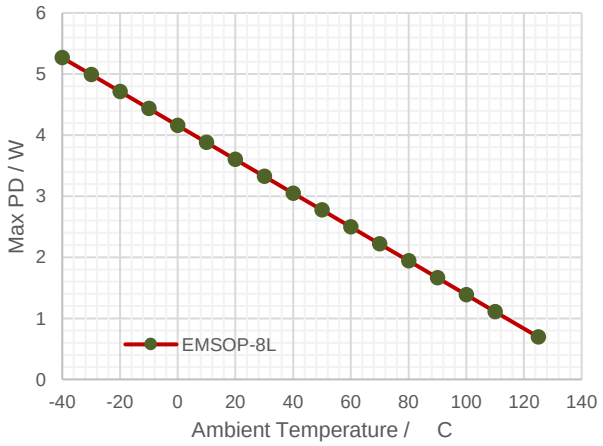
Thermal Performance of Different Packages Based on EVM Test

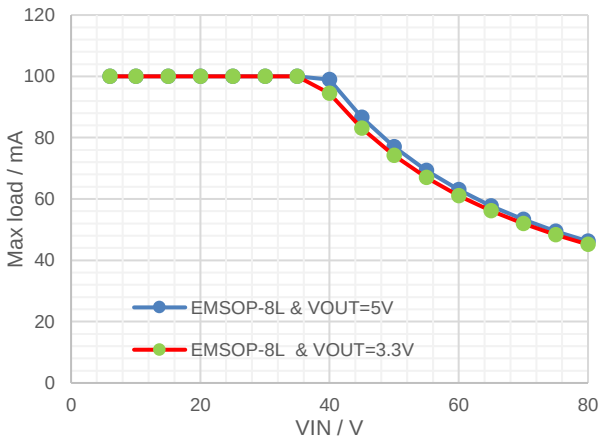
Package	Max Allowable PD (W) (Not Trigger TSD,VOUT=5V)	Max Allowable PD (W) (TJ≤150)	R JA_EVM (℃/W)
-) &			

THERMAL CHARACTERISTICS



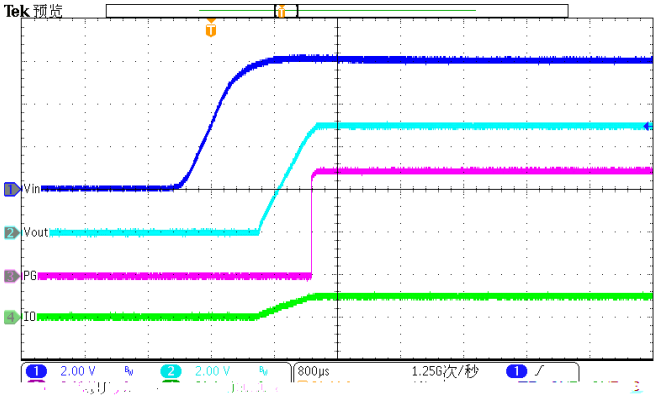






Application Waveforms

0CHI 0I 0 HF I B L C H >



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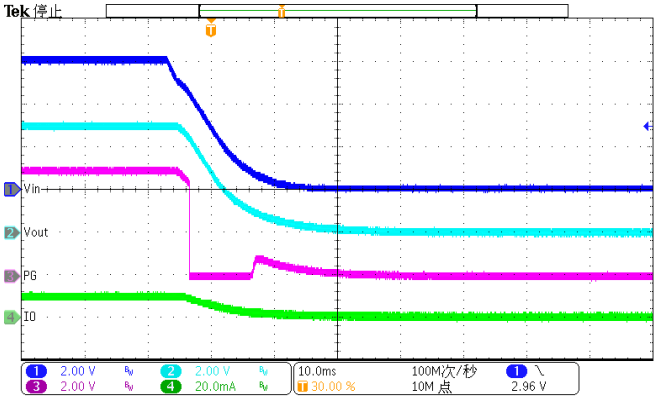

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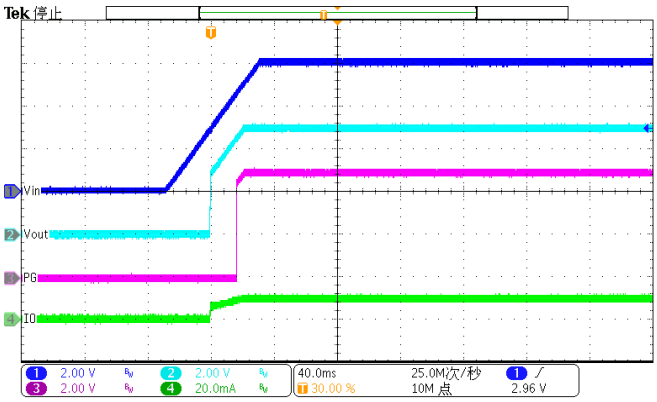
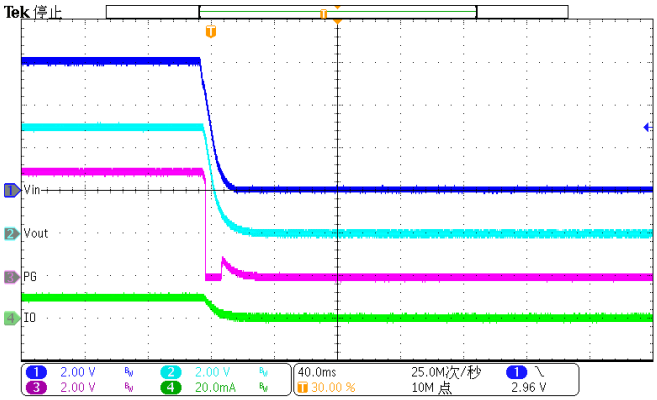


CA L -F I L J F; > G



CA L -F I L>I H JCHJ F> J I 0) /.

CA L &I ; > . L; H CH

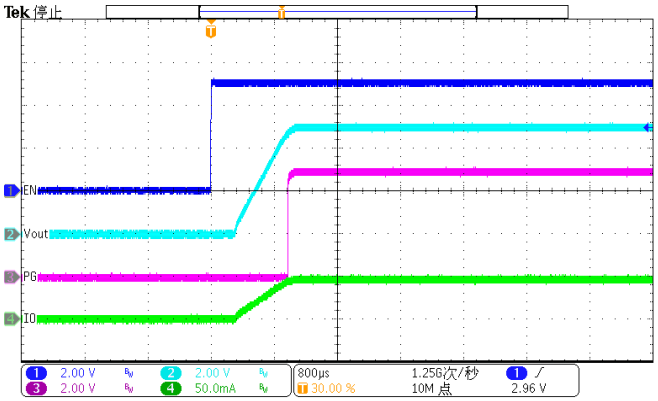
G G 0) /. 0

CA L &I ; > . L; H CH

G G 0) /. 0

Application Waveforms(Continued)

0CH 0I 0 HF I B L C H >



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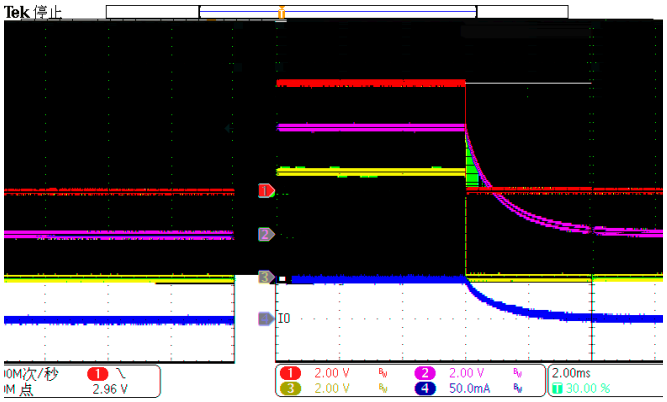

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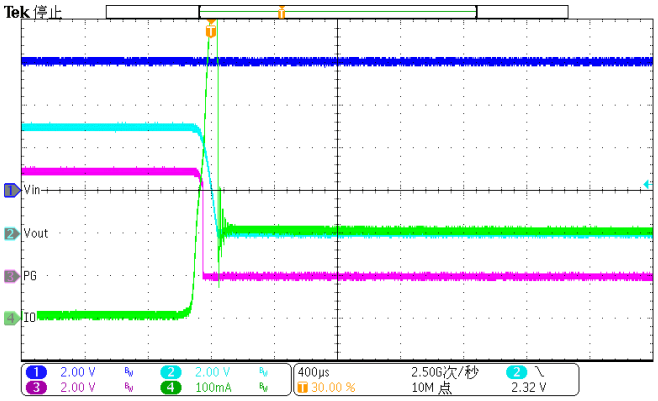
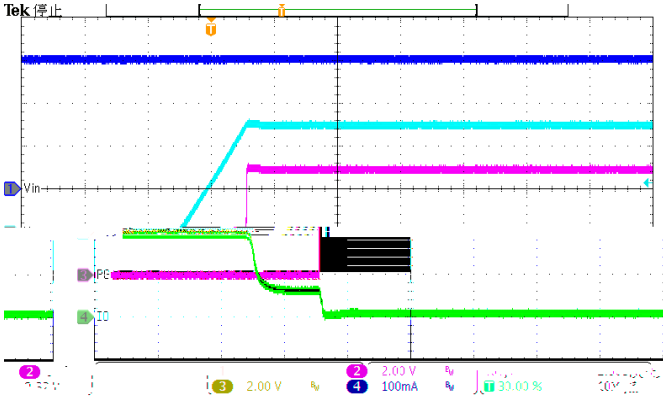
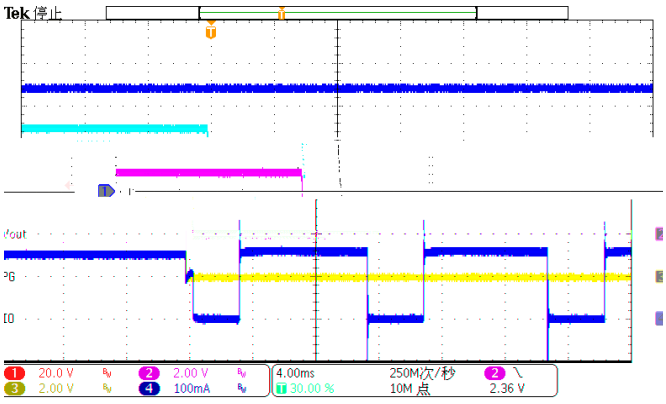


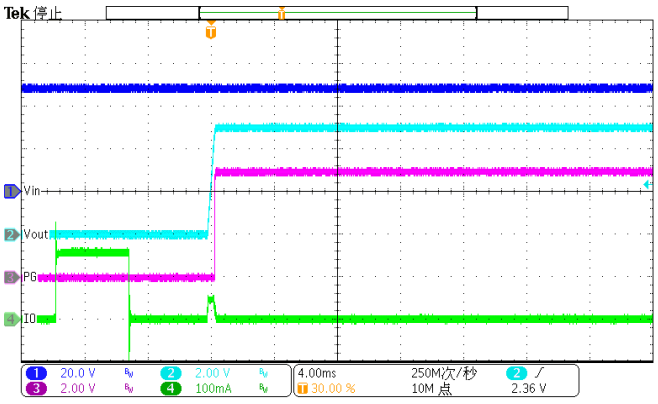
CA L H L- BI L C= C LI =CH



CA L C- BI L C= C LI =CH



CA L H L) L. GJ L; L LI =CH0CH 0

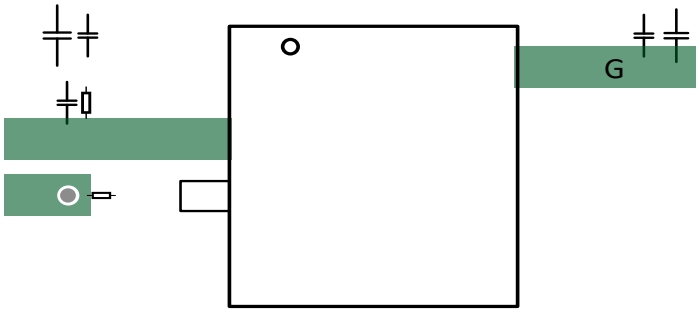


CA L C) L. GJ L; L LI =CH0CH 0

Layout Guideline

LI J L F; I C ; =LCG; F I L- . ; <GC L; H CH J LI LG; H= ; H> AI > L A F; CH=B; L; = LC G I L< LL F I FF B A G FCI ; < F

1. I B CIJ =; J; =C: L ; H> I J =; J; =C: L G < JF; = > ; =F I B > G JCI ; JI G<F
2. C L =I GG H> > I < J; B CIJ JCI I AL H> CB; < J; =; J; =C: L . B FI J ; L ; I LG > < B < J; =; J; =C: L=I HH = CH 0 (JCI; H> B (JCI B G G < ; G; FF; JI G<F
3. C L =I GG H> > I G L; = F HAB I L BG=E=I JJ L GAB I GCHCG:C , >LI J ; H> B ; >C C; CH
4. . I CGJLI B B LG; FJ LI LG; H= I B > G ; H> G; CG:C B = LL H I J ; BGAB; G<CH GJ L; L - . L =I GG H> JL ; >CHA B =I JJ L H> L B B LG; FJ; > ; ; L; JI G<F ; H> JF; =CHA H AB B LG; F Ç I H B =I JJ L H> L B B LG; FJ; >
5. CHAF; LA F = LI F G =; J; =C: L CB BGAB - , L C I L - . L =I GG H> ; >>CHA; F - , =; J; =C: L J; L; FF F=I HH = CH CB B F; LA F = LI F G =; J; =C: L

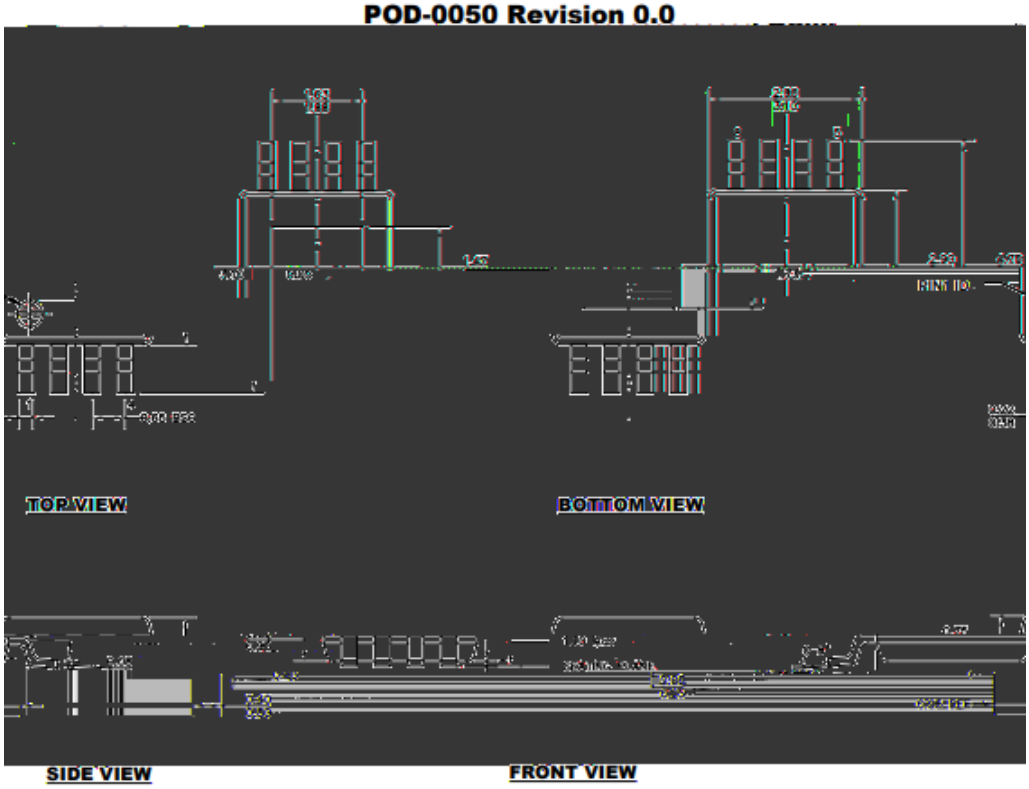


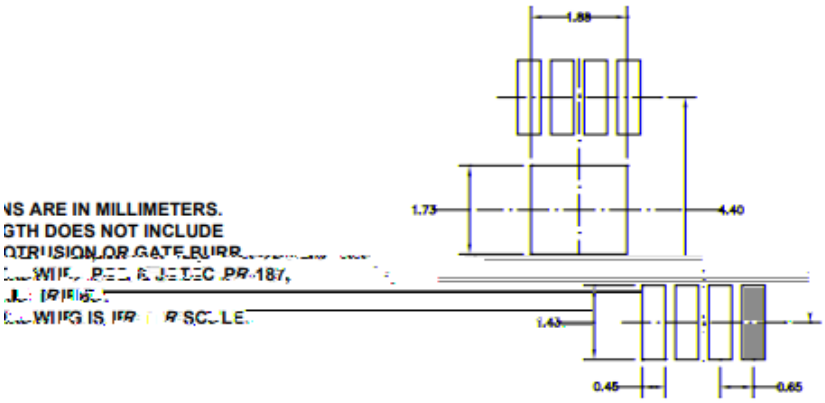
GA L & I ; GJF

SCT71801A00MTER

PACKAGE INFORMATION

PACKAGE OUTLINE DRAWING FOR MSOP8L-EP
POD-0050 Revision 0.0





RECOMMENDED LAND PATTERN

NOTE:

1) ALL DIMENSIO
2) PACKAGE LEN
MO D FLASH, PR
3)
4)

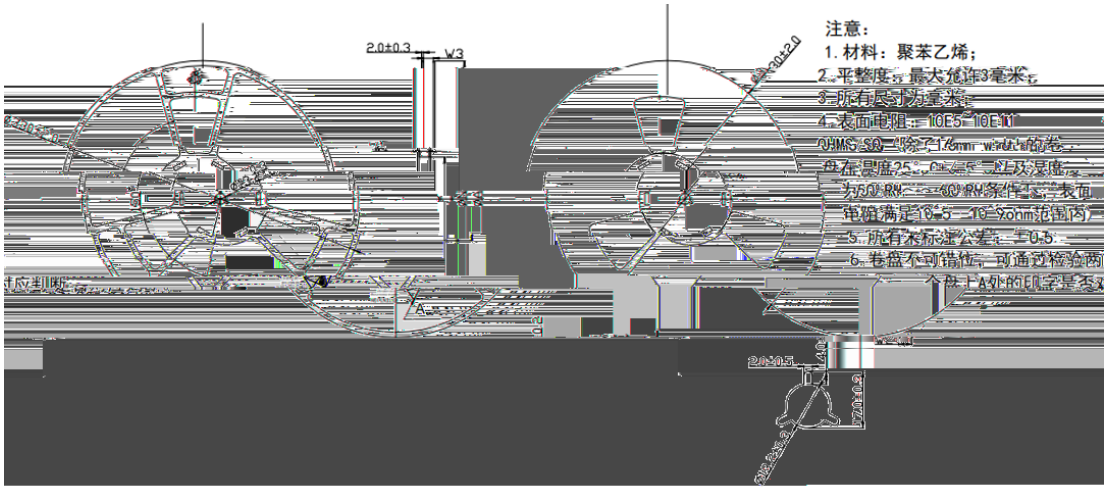
NS ARE IN MILLIMETERS.
GTH DOES NOT INCLUDE
OTRUSION OR GATE BURR
WIF PEC & JEDEC PR-187,
WIFG IS FR R SC LE.

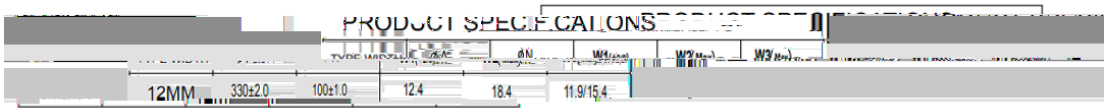
-) & ; =E; A) FCH CG H CH

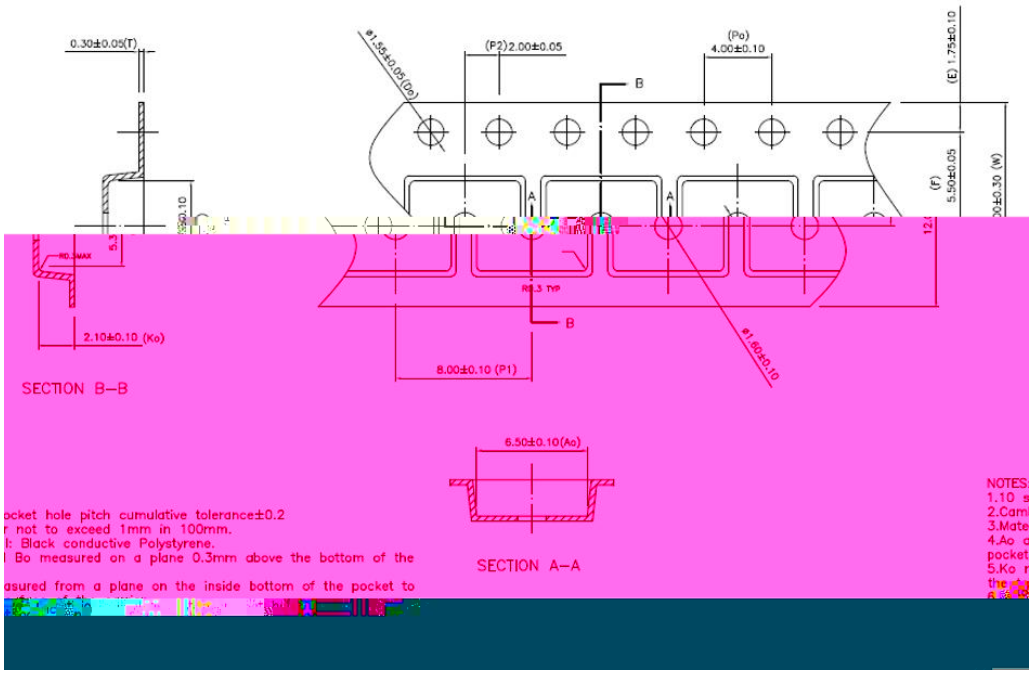
NOTE:

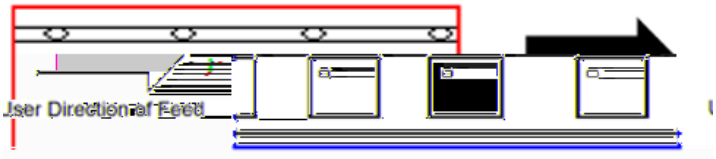
1. L; CHA JL JI > I < G; > ; J; =E; A I FCH) ; LC CH
2. L; CHA H I =; F
3. IFFCH ; L>CG H CH ; L CH G CKG L
4. . B LG; FJ; > B; IF< I P> L > I H B <I ; L>
5. CG H CH I JI > J; > I H <I I G I J; =E; A >I HI CH=F > GI P> F; B
6. I H; = <I ; L> ; <LG; CH I LG CKG G I P> LG; E < I F L; H= < H B JCH

TAPE AND REEL INFORMATION









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NOTICE: . B GHI LG; GCH GHI BC >I = G H C <D = I =B; HA GBI H G / L BI F> ; LL; H ; H> A ; L; H B BG> J; L H IF= ; F LI J L LGAB ; L HI GHI LGHA > JI H B HGHI AL; GHA - GEHI H I H H . =BH IF A - . JLL > = GHI ; H ; JJFG; GCH - . GFH ; G ; H F A; FL JI H GGC I L; H ; G ; JJFG; GCH