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

) LI J L; CHA L ; C GJ L; L L; HA HF I B L C H >

PARAMETER	DEFINITION	MIN	MAX	UNIT
0 (	HJ I F; A L; HA			0
0) / .	) J I F; A L; HA			0
0 (	H; <F CHJ I F; A		0 (	0
0	I LAI > JCH I F; A			0
& 3	LI AL; GG; <F I L II > F; . CG			0
(	HJ =; J; =C L			
) / .	) J =; J; =C L			
- ,	) J =; J; =C L - , L K C G H			
.	) J L; CHAD H= CH GJ L; L			

ABSOLUTE MAXIMUM RATINGS

) LI J L; CHA L ; C GJ L; L L; HA HF I B L C H >

PARAMETER	DEFINITION	MIN	MAX	UNIT
0 (	; CG G CHJ I F; A L; HA			0
0) / .	; CG G I J I F; A L; HA			0
0	; CG G ><; =E JCH I F; A			0
0 (	; CG G H; <F CHJ I F; A		0 (	0
0	; CG G JI LAI > JCH I F; A			0
0 &	; CG G JI LAI >> F; JCH I F; A			0
.	H= CH GJ L; L L; HA			
. A	- I L; A GJ L; L L; HA			

(1) - L < I H> BI FC > H> L < I F ; CG G , ; CHAG; =; > C J LG; H H >; G; A . B > C CH A ; L; H > I H= CHI C I C , =I GG H> >) J L; CH I H>OCH
(2) = LL H RCGCL C I L BI F> < =I HH = > < H ; H> B J IF> J JI L A 0) / . I LI B LJI L JJF 1 B H B J IF> J JI L C BOAB L B; H 0 B G; CG G LL H &CGC C < LIF L B; H I JLL = B 4 H L
(3)) J L; CH OBCH BC L; HA ; I C J LG; H H > C >; G; A BI AB F = LG; FJ LI LG; H= C H A ; L; H > I C B I J L; CHA ; G<CH GJ L; L L; HA

ESD RATINGS

PARAMETER	DEFINITION	MIN	MAX	UNIT
0 -	G; H I > I > F J L (- - J =OC; CH ; IFJCH			E0
	B; LA > C I > F J L (- - J =OC; CH ; IFJCH			E0

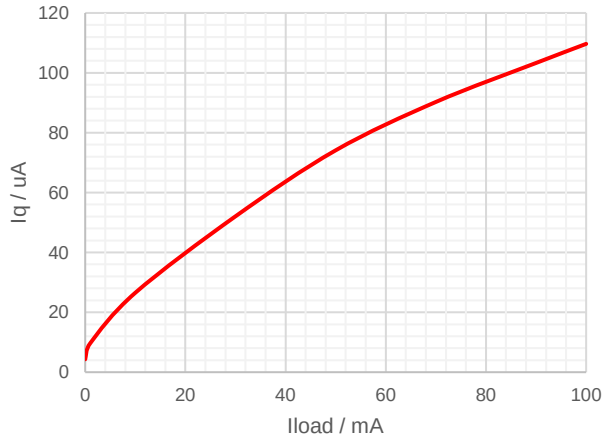
(1) >I = G H ; B; 0 ; IF ; G; H ; = LCHA OB; ; H>; L> - =I HLL FJLL =
(2) >I = G H ; B; 0 ; IF ; G; H ; = LCHA OB; ; H>; L> - =I HLL FJLL =

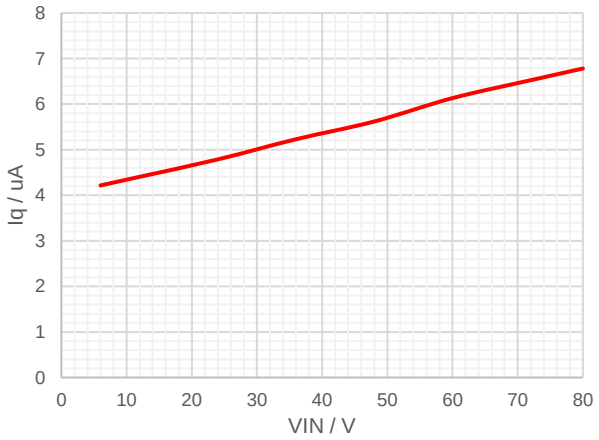
ELECTRICAL CHARACTERISTICS

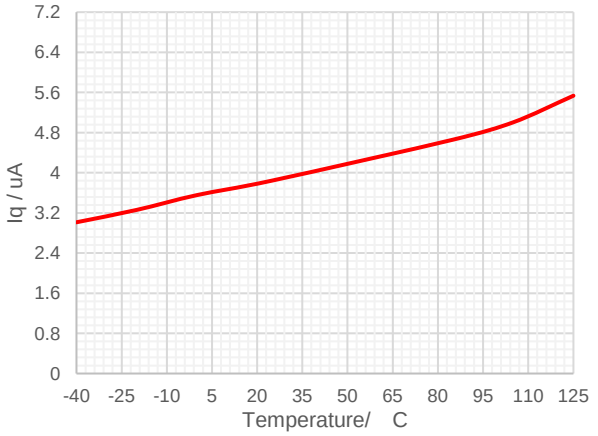
0 (0) / . 0) / . . JC; F ; F C > H> L

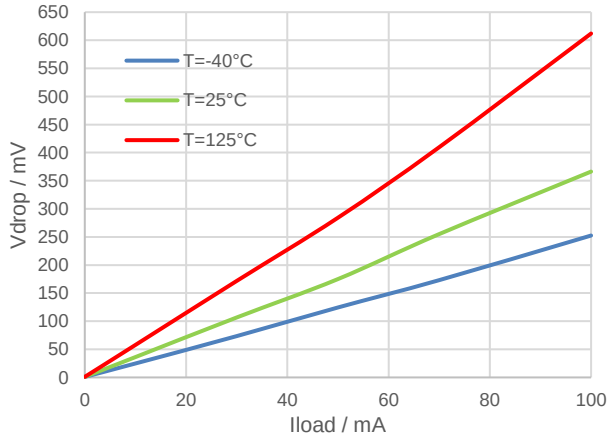
SYMBOL	PARAMETER	TEST CONDITION	MIN	TYP	MAX	UNIT
Power Supply						
0 (	) J L; CHACHJ I F; A					0
0 / 0 &)	0 (/ 0 &) . BL BI F> L C	0 (LCCHA				0 G0
- (	- B >I H= LL H LL G 0 (JCH	(0 (0				
		(0 (0				
+	+ C = H = LL H LL G (JCH	(F; H F; > 0 (0 .				
		(F; H F; > 0 (0 .				
		(F; H F; > 0 (0 .				
		(F; H F; > 0 (0 .				
Regulated Output Voltage and Current						
0	>< ; =E I F; A ; == L; =	.				0
		.				0
0) / .	&CH L A F; CH	0 (0) / . 0 I 0				G0
	&I ; > L A F; CH	I G I G				G0
0 ,)	LL JI I F; A	0 (0) / . 0 I G				G0
		0 (0) / . 0 I G				G0
) / .	) J = LL H	0) / . CHL A F; CH				G
)	) J = LL H FCC					G
)	) L LL H I F> <; =E	0 (0 (9 0				G
- , ,	I L JJF L D = CHL; C	0) / . 0 I G E) / .				>
		0) / . 0 I G E) / .				>
		0) / . 0 I G E) / .				>
Enable and Soft-startup						
0 (9	H; <F BCAB BL BI F>					0
0 (9 &	H; <F F BL BI F>					0
0 (9	H; <F BL BI F> B L C					G0
(9 0	H; <F JCH J F J = LL H	(0				
. - -	- I ; L CC					G
Power Good						
0 9,	LCCHA BL BI F> J L= H; A	0) / . 0) / . ( ) B H0) / . LCCHA				
0 9	; FCHA BL BI F> J L= H; A	0) / . 0) / . ( ) B H0) / . ; FCHA				
0 3-	LCJ B L C					
0 9 &) 1	I J F I F; A	VOUT=0.8xVOUT(NOM),PG sink 100uA		76		G0

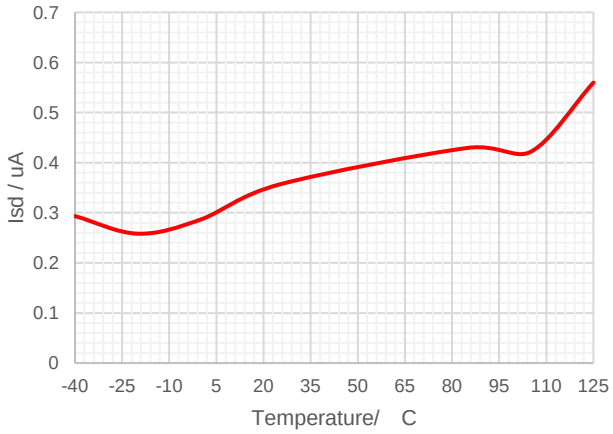
TYPICAL CHARACTERISTICS

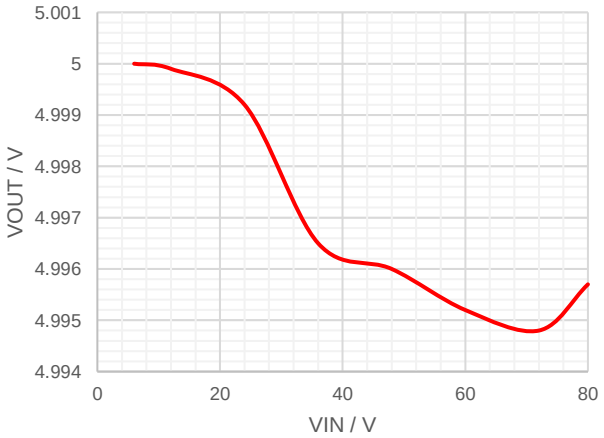


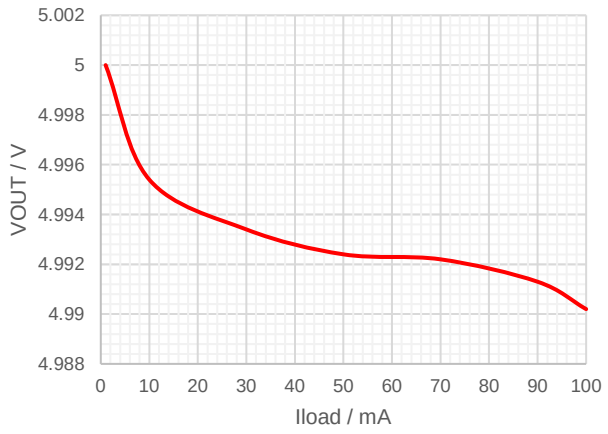


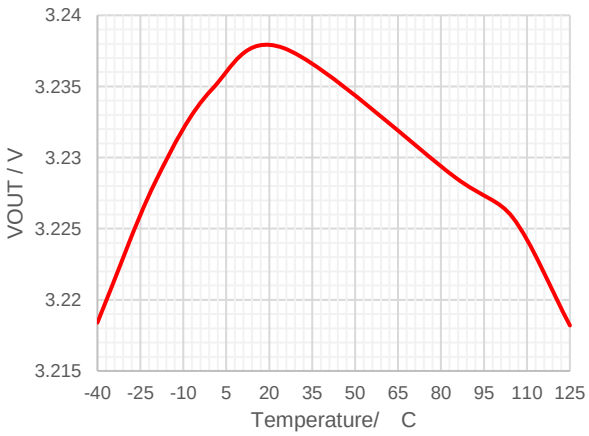









5.002
5
4.998
4.996
4.994
4.992
4.99
4.988
VOUT / V
0
10
20
30
40
50
60
70
80
90
100
Iload / mA


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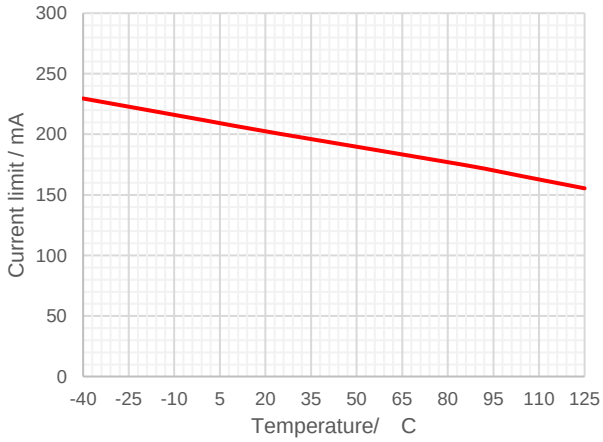
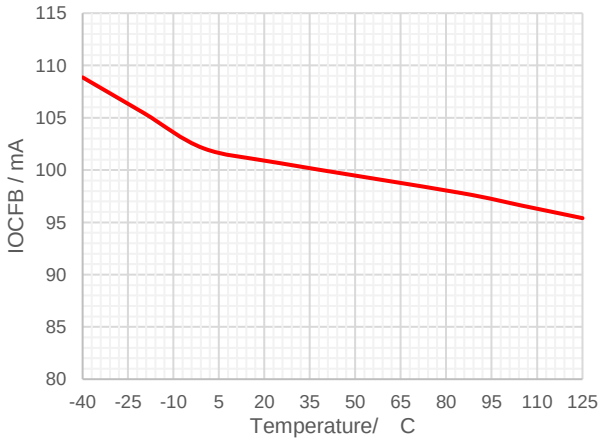
65
80
95
110
125
Temperature/ C


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

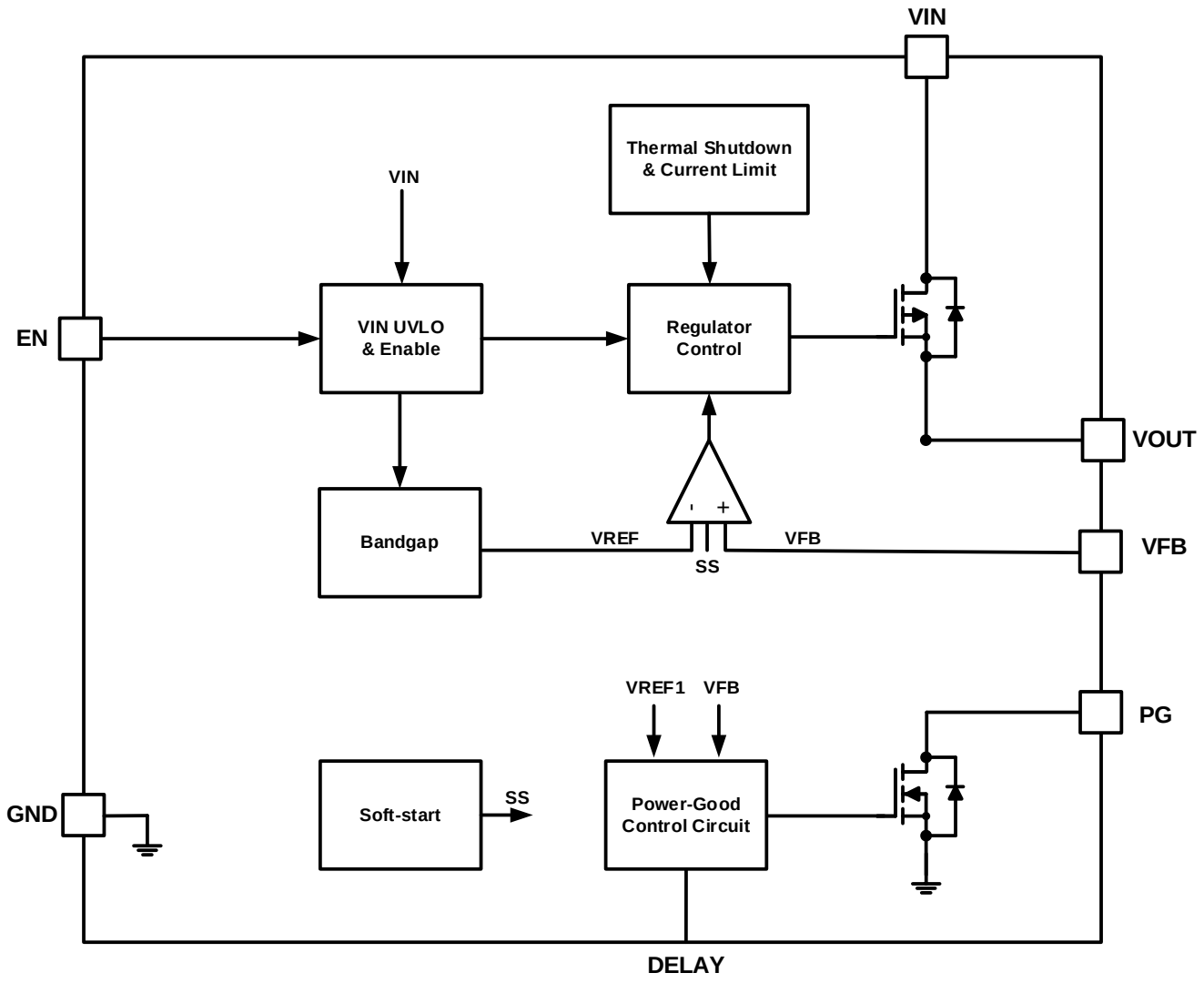
0 (0 0) / . 0 J) / . G

TYPICAL CHARACTERISTICS (continued)

0 (0 J) / .) / . G

0 (0 0) / . 0 J) / .

FUNCTIONAL BLOCK DIAGRAM



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

OPERATION

Overview

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

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

. B - . LC JLL > = ; FI JLL C H; <F =I H LL 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 ; JJFC; CH H >CHA K H= =I H CA L; CH) B L JLL = CH ; L CH=F > B 0 (CLJ H> L I F; A FF =E I 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 I F; 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 I F; A LC ; <I 0 ; H> B (JCH I F; A = > B H; <F BL BI F> 0 (9 . B > C C >C; <F > B H B 0 (JCH I F; A ; FF < FF 0 I L B H B (JCH I F; 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

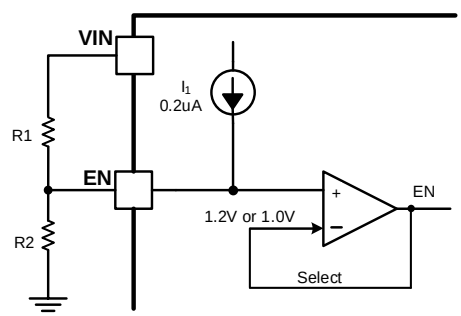
0 (LC 0 CH LC BL BI F> I H; <F B > C

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



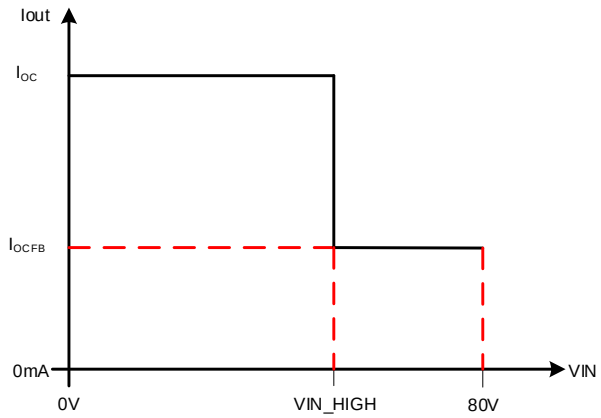
CA L - G / 0 &) < H; <F >CC

Regulated Output Voltage

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

. B I J IF; A C H L A F; > B H B > C C = LL H FC C 1 B H; = LL H FC C H I == L B L A F; I L< A I B ; J < =; I B = L ; J L > C ; C H B LG; F B >I H C LA L > B > LH I L B > =I I F >I H B LH; F B LG; F B >I H = = C LH B > <; =E I H B I J = LL H ; F =I H> C H J L C B > = = =F < H= LL H FC C; H> B LG; F B >I H

1 B B I L= LL H VIN_HIGH Control ; L B - . LC JLL > = I F> < GI L LL < ; H> ; L B HI L= LL H ; F ; H> B L A H I == L C; FI L K C B G; G G F; > A = LL H B F> < G; F L B; H) > LA ; L J . B =B; L; = LC C B H B I F A L



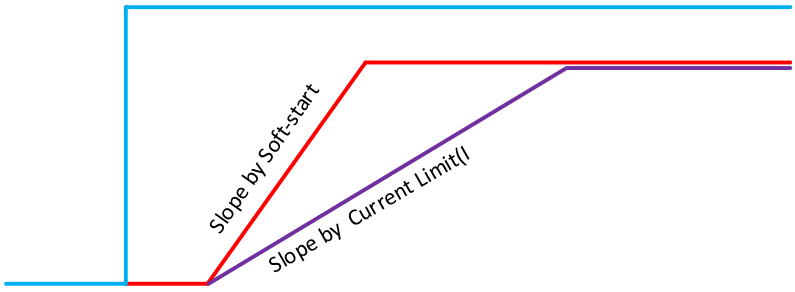
A L LL H &C C B I F><; =E ; L

Internal Soft-Start

. B - . LC JLL > = I AL; ; H I LH; F I ; L = = C B; L; GJ B L L H= I F; A LL G LL I F I 0 L L H= I F; A B (J I C J F > < F 0 &) F< B I ; H> B I LH; F I ; L L . B I ; L ; FI L > LA B >I H> I B LG; FI LF; > A

F A L B B ; L J ; I LG ; G; F I J =; J; = L ; H> F; LA I J =; J; = L 1 B H I J =; J; = L C G; F I L ; GJF B F J I 0) / . C FC C < I ; L 1 B H I J =; J; = L C F; LA I L ; GJF B F J I 0) / . C FC C > < = LL H FC C) ; 0 (VIN_HIGH ; H> B F J I 0) / . C FC C > < = LL H FC C) B H0 (VIN_HIGH

H- . LC JLL > = J ; F. C ; H> J ; F) C G ; H> J ; F) C G =I F> B I F A I LG F; I L H C; F ; L J = =; F= F; H



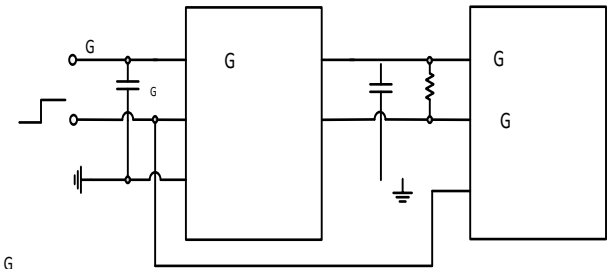
A L -I ; L 1 ; I LG) J ; J; = L

Power-Good and Power-Good Delay

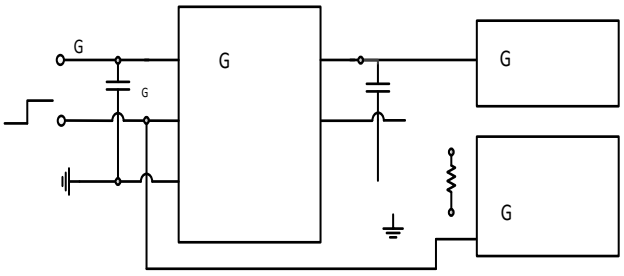
. B JI LAI > JCHC ; HI J H>L; CHI J ; H> =; H< =I HH = > I ; H 0 I LFF LL; CFBLI AB ; H LH; F J FF J L CI L. B I J C BCAB CGJ >; H= B H0) / . C AL ; L B; H B LCJ BL BI F> 0 9, 0) / . () 0) / . >LI J < FF 0 9 0) / . () B I J H>L; CHI J LH I H; H> J FF B I J FF I J I F; A GI HCJ LCHA C H H > > B JCHI =;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

B JI LAI > > F; CG C H H AB I L I G ; J JFCG; CH =I F> =I HH = ; LH; F=; J; =CJ L LI G & 3 JCHI (BC =; J; =CJ LC =B; LA > LI G 0 I 0 < B & 3 JCHI = LL H & 3 ; H> A H L; L; > F; CG When C_{DELAY} is used, the PG output is high-impedance when V_{OUT} exceeds V_{IT}, and V_{DELAY} exceeds V_{REF}. The power-good delay time can be calculated using: $t_{DELAY} = (C_{DELAY} \times V_{REF})/I_{DELAY}$. For example, when C_{DELAY}= 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; =CJ 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

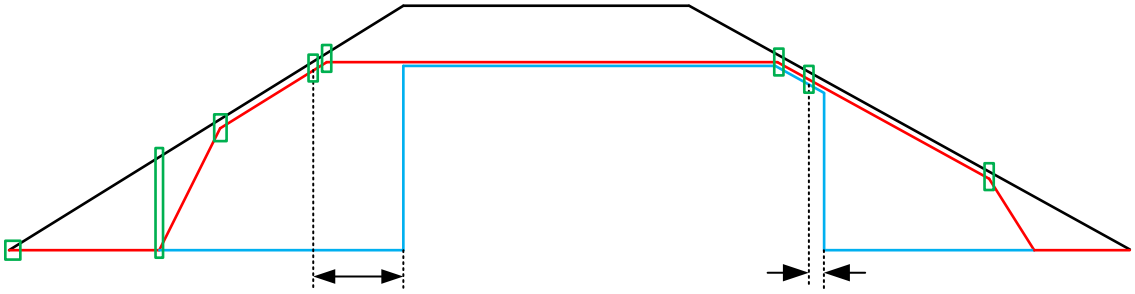
B JI CHI B 0) / . L ; =B BL BI F> 0 9, 0) / . () ; H> LI G BC JI CHI &) =I H B JI L AI > > F; CG L BC > F; B JCHLC I BCAB F F BI CHA B; 0) / . C I E

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 > > AFC=B CG BCB CF L ; 0) / . H> L B I =; > I L ; G JF < FCH FF; > L; H CH L JI H L BC > F; B I J C B I L > I 0 F F I BCABFCAB JI L ; CF ;

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



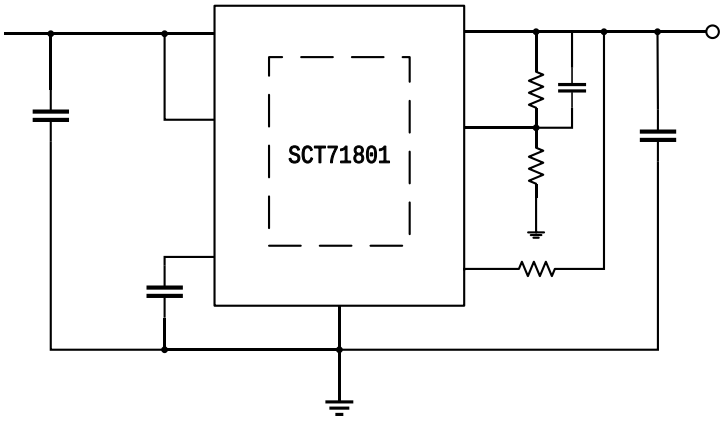
@A L - ; L J ; H> - B >I H ; GJF - . - LC

Thermal Shutdown

. BC > @ @H LJI L; ; B LG; F B >I H . . =@= C; ; JL = @H L G I LB ; @A I L=I H @I I H LG; F I J L; @H B DH=@H GJ L; L BI F> H = > B . . LQ JI @I . B DH=@H GJ L; L = >@A B . -

APPLICATION INFORMATION

Typical application 1:

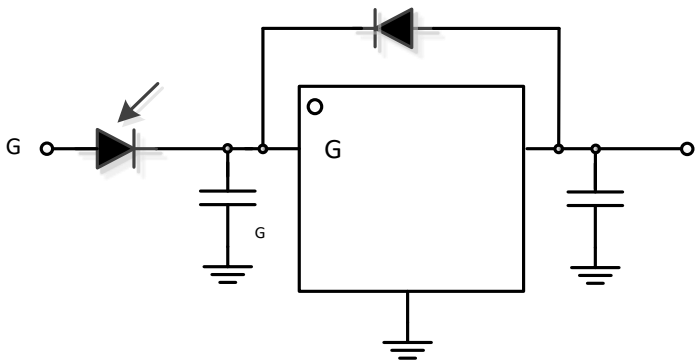


@A L - . . JG; F JJFG; @CH-=B G; G

Design Parameters

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

Typical application 2:



@A L - . . JG; F JJFG; @CH-=B G; G @B, L I F;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 I F; A C < ; H LH; FL C I L>CC L, ; H>, CI JC; F; JJFC; CH =B G; C , =I GG H> > , L C; H= C E / K ; CH I =; F= F; ,

B L

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

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

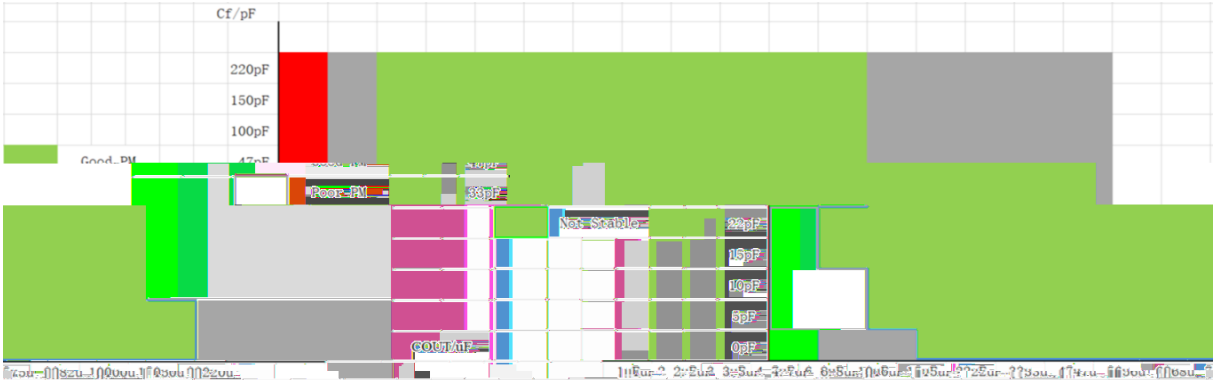
0I 0	) / .	J	, E	, E	) / . - , I J CH; F

Input Capacitor and Output Capacitor

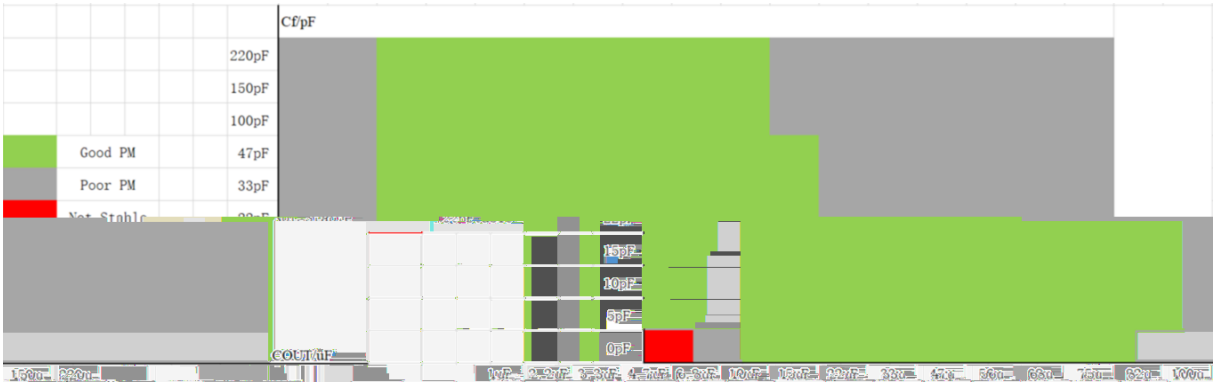
- . L =I GG H> ; >>CIA; I LAL ; L=; J; =CI L CB; < J; =; J; =CI L CI J; L; FF F; 0 (JCI I E J B CIJ I F; A ; <F F GCI G F = LI F C =; J; =CI LI LI B L=; J; =CI L CB BCAB =; J; =C; H= C AA > I L B G JI L CB F; LA I F; A JC . B I F; A L; CIAI B =; J; =CI L G < AL ; L B; H B G; CG G CIJ I F; A

. I H L FI J ; <CC B - . JLI > = L K C ; H I J =; J; =CI L CB ; GCICG G = C =; J; =C; H= ; F I H> B JLI > = =I P JJI L I J =; J; =CI LL; HA LI G I ; H> CB ; H -, L; HA < H ; H> - . L =I GG H> F = CIA ; 2 , I L 2 , J = L; GC =; J; =CI L CB F -, I L GJ L; L L; HA I CGJLI B F; > L; H CH L JI H

1 B H CIA F; LA I J =; J; =CI L CB BCAB L -, L C I L I L ; GJF I J F = LI F C =; J; =CI L CB -, L C I L CI B ; JJFC; CH - . L =I GG H> ; >>CIA L; F -, I J =; J; =CI L J; L; FF F =I HH = CH CB B F; LA F = LI F C =; J; =CI L BC CF FCG CI; B H> L BI I I L BI I I F; A =; > < B F; LA -, L C I L; H> A < LF; > L; H CH J LI LG; H=



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



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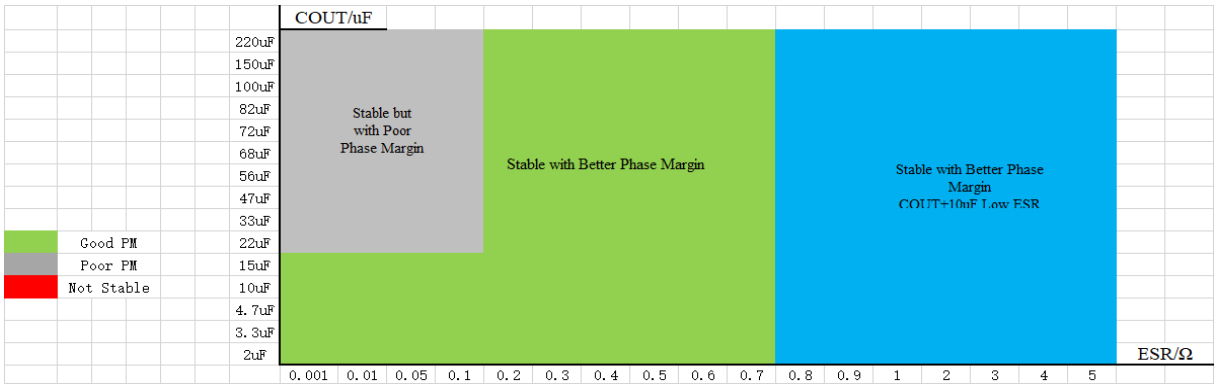


@A L - . - ; <@C 0-) J ; J; =@ L

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 > CG H > I < >C CJ; > I LL G B =BCJ . B G; CCG G D H= 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 BCEH ; H> B ; G<CH GJ L; L

LCHA H LG; FI J L; CH &) D H= CH GJ L; L BI F> H = > I L F CG; L F CH> LCL; CH I B JLL J LC I B =BCJ / CHA < FF K ; CH I =; F= F; B JI L>C CJ; CH ; H> CCG; B D H= CH GJ L; L

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

. B D H= CH GJ L; L =; H< CCG; > CHA K ; CH , 90 C B D H= CH I ; G<CH B LG; FL C ; H= <; > I H= I G L 0 LC B ; JJ FCG; CH; H> ; FF CCH G; LACH CH B B LG; F> CAH < B I FF CHA G BI > C > I =; F= F; B D H= CH GJ L; L .

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

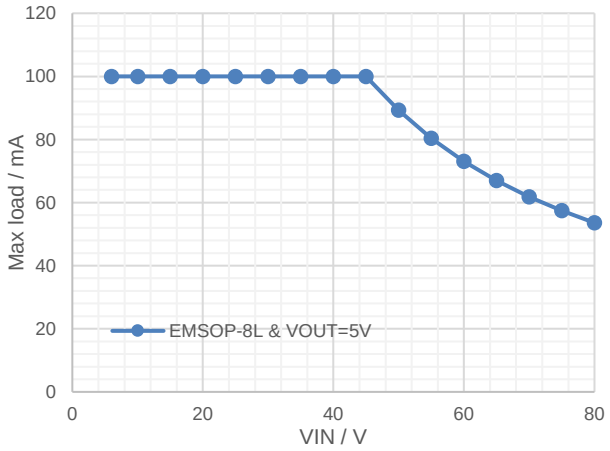
I L B - . JLL > = B G; CCG G ; FF ; <F JI L>C CJ; CH I >C L H J; =E; A ; FC > CH B I FF CHA ; <F ; H> B L F ; L <; > I H I L 0 <I ; L> F; LA L JI L>C CJ; CH CF LCAA L B LG; F B >I H JLL = CH ; L F =I F> =; F= F; B , 90 I >C L H J; =E; A . B I FF CHA ; <F C D I L I LL L H= <; > I H I L 0 JF; F; H AB G; LACH B H I > CAH B LG; FJ LI LG; H=

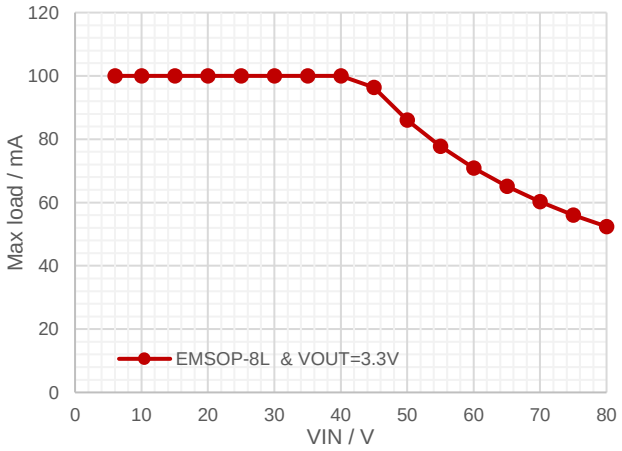
. B CHI LG; CH I L 0 F; L I CH L I GG GG C

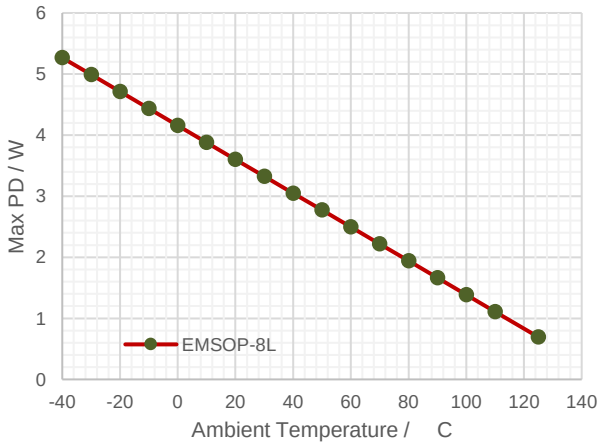
Thermal Performance of Different Packages Based on EVM Test

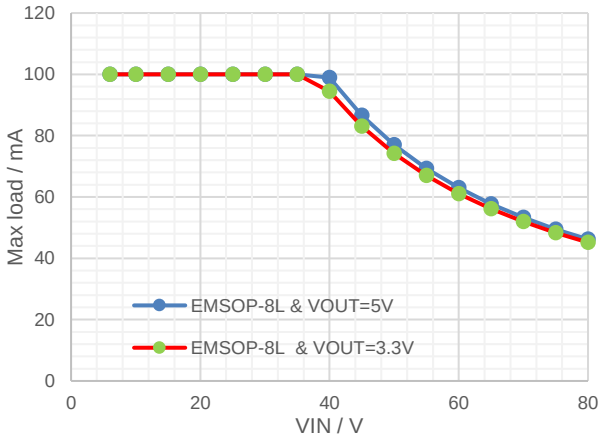
Package	Max Allowable PD (W) (Not Trigger TSD,VOUT=5V)	Max Allowable PD (W) (TJ≤150)	R JA_EVM (℃/W)
-) &			

THERMAL CHARACTERISTICS



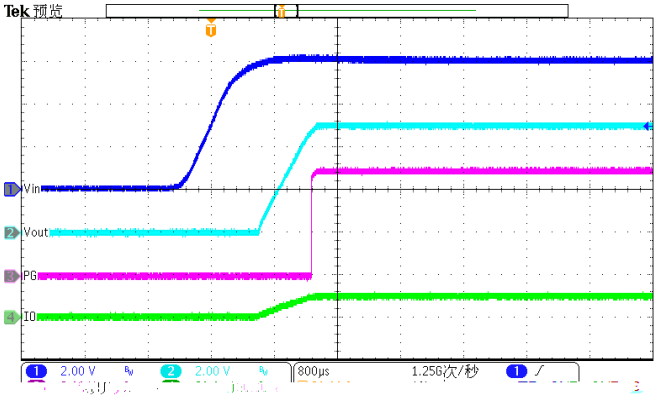




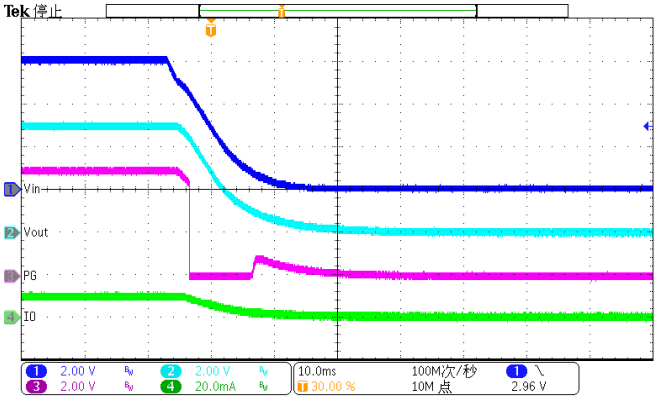


Application Waveforms

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



CA L I L J FF; > G



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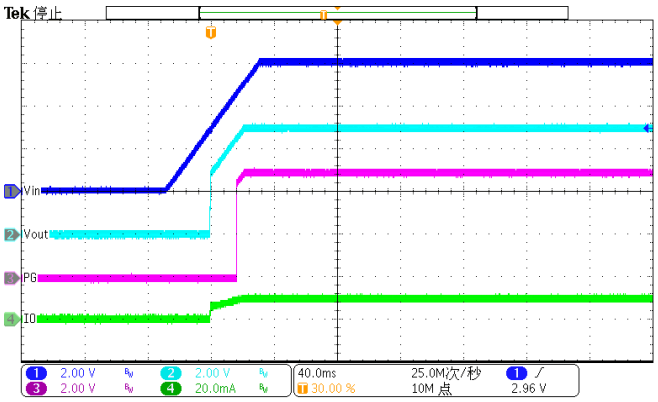

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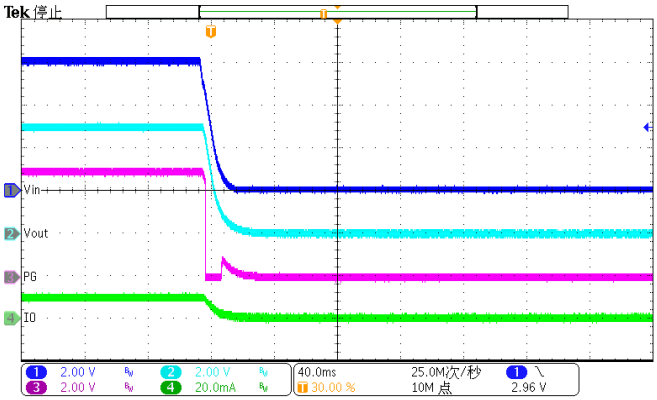


CA L -FF I L>I H JCHJ FF> J I 0) / .

CA L &I ; > . L; H CH

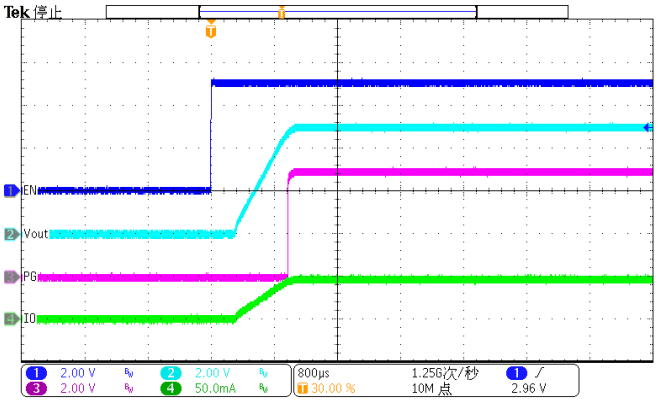
G G 0) / . 0

CA L &I ; > . L; H CH

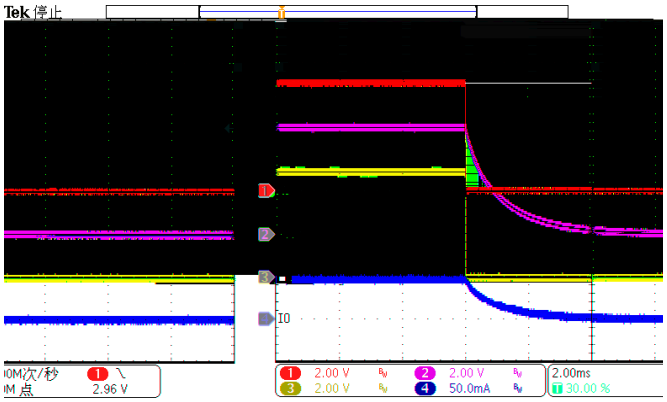
G G 0) / . 0

Application Waveforms(Continued)

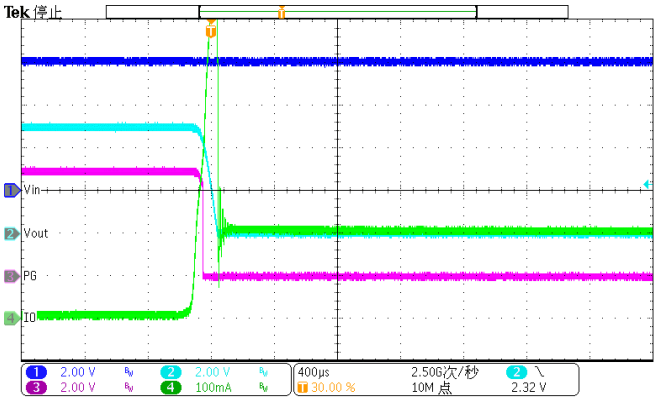
0CH 0I 0 HF I B L C H >



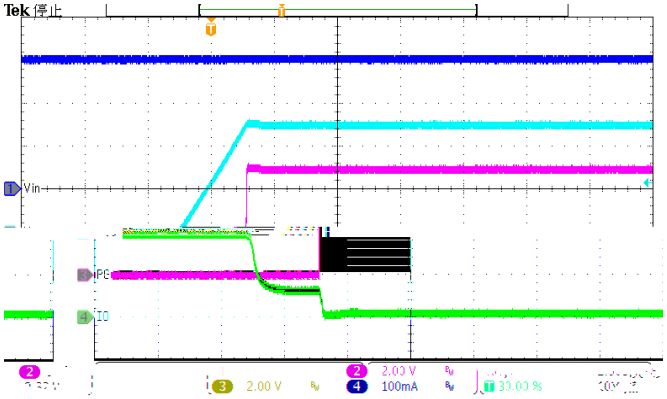
CA L H <F F; > G



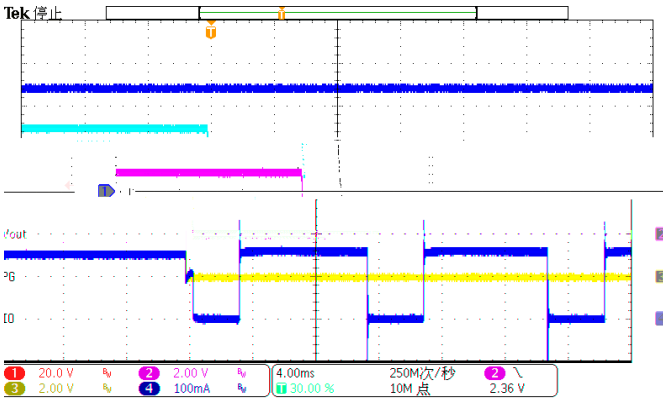
CA L C; <F F; > G



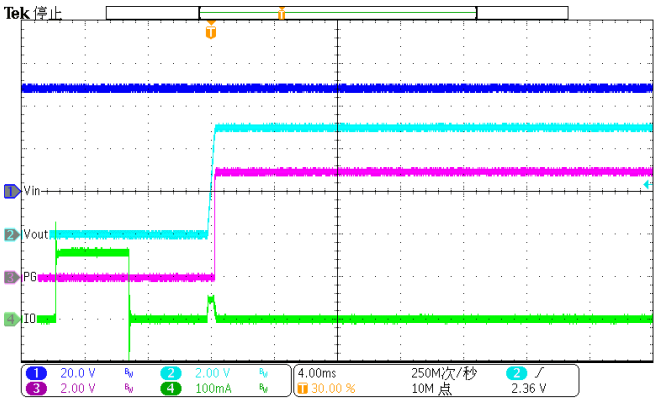
CA L H L-BI L C= C L = CH



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



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

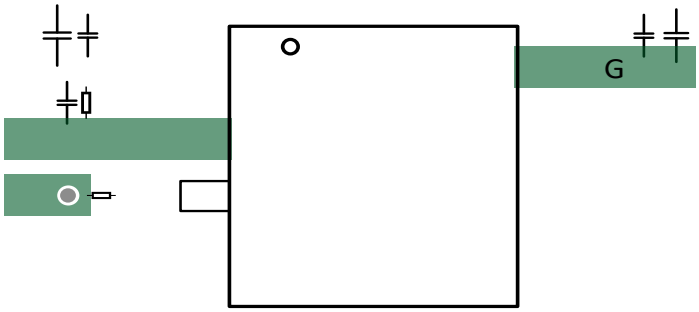


CA L C) L. GJ L; L L = CH0CH 0

Layout Guideline

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

1. I B GIJ =; J; =GI L ; H> I J =; J; =GI L G < JF; = > ; =FF I B > G JGI ; JI GF
2. C L =I GG H> > I < J; B GIJ JGI I AIJ H> GB; < J; =; J; =GI L . B FF I J ; L ; I LG > <
   B < J; =; J; =GI L=I HH = GH 0 (JGI; H> B (JGI B G G < ; G; FF; JI GF
3. C L =I GG H> > I G L; = F HAB I L BGE=I JJ L GAB I GGHGC , >LI J ; H> B ; >C GI; GH
4. . I GGJIJ B B LG; FJ LI LG; H= I B > G ; H> G; GGC B = LL H I J ; BGAB; G<CH GJ L; L
   - . L =I GG H> JL ; >GIA B =I JJ L H> L B B LG; FJ; > ; ; L; JI GF ; H> JF; =GIA HI AB B LG; F
   Ç I H B =I JJ L H> L B B LG; FJ; >
5. GIAF; LA F = LI F G =; J; =GI L GB BGAB - , L C I L - . L =I GG H> ; >>GIA; FF - , =; J; =GI L
   J; L; FF F=I HH = GH GB B F; LA F = LI F G =; J; =GI L

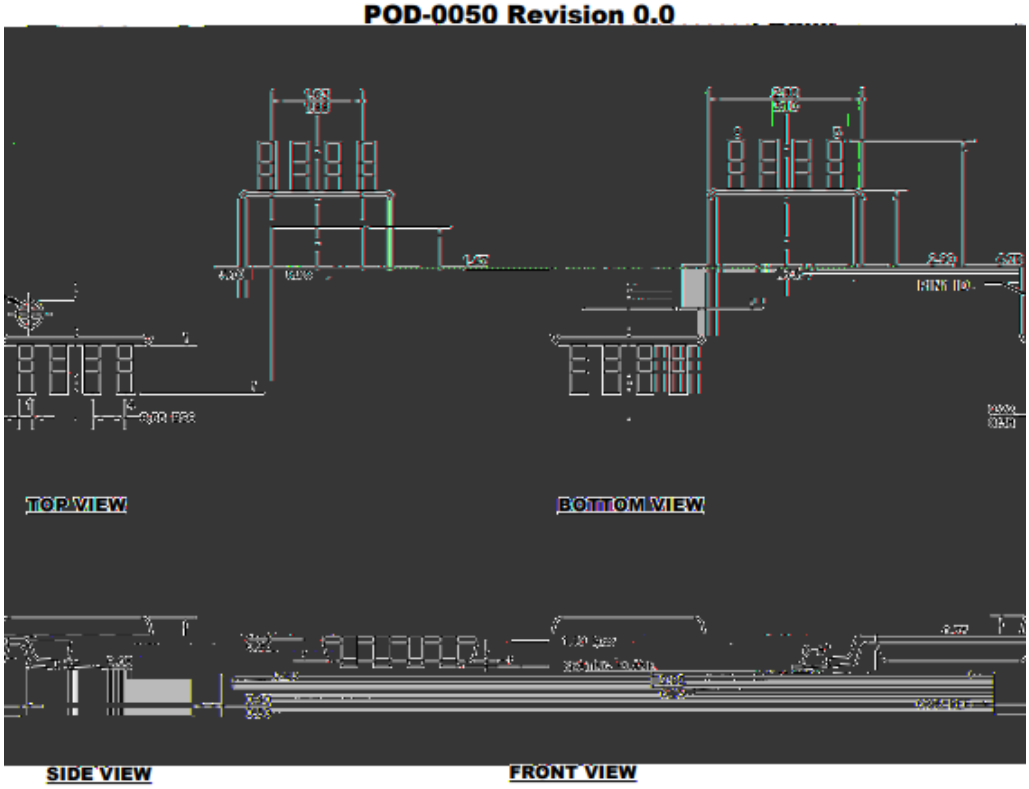


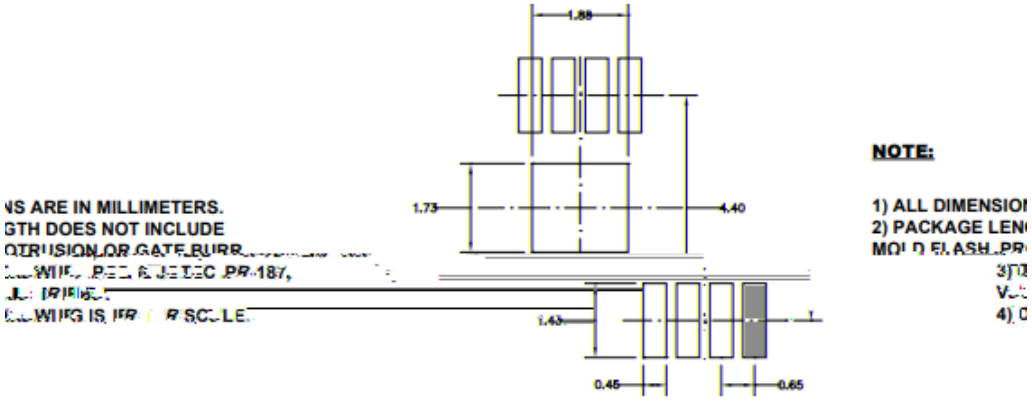
GA L & I ; GJF

SCT71801A00MTER

PACKAGE INFORMATION

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





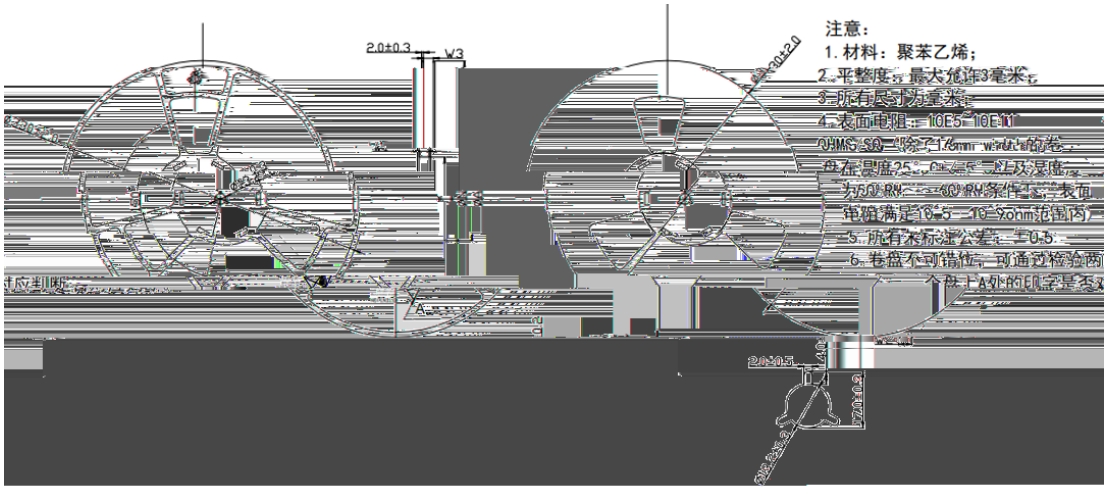
RECOMMENDED LAND PATTERN

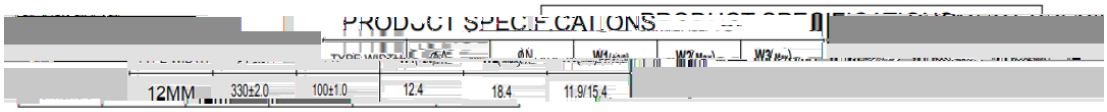
-) & ; =E; A) FCI CG H CH

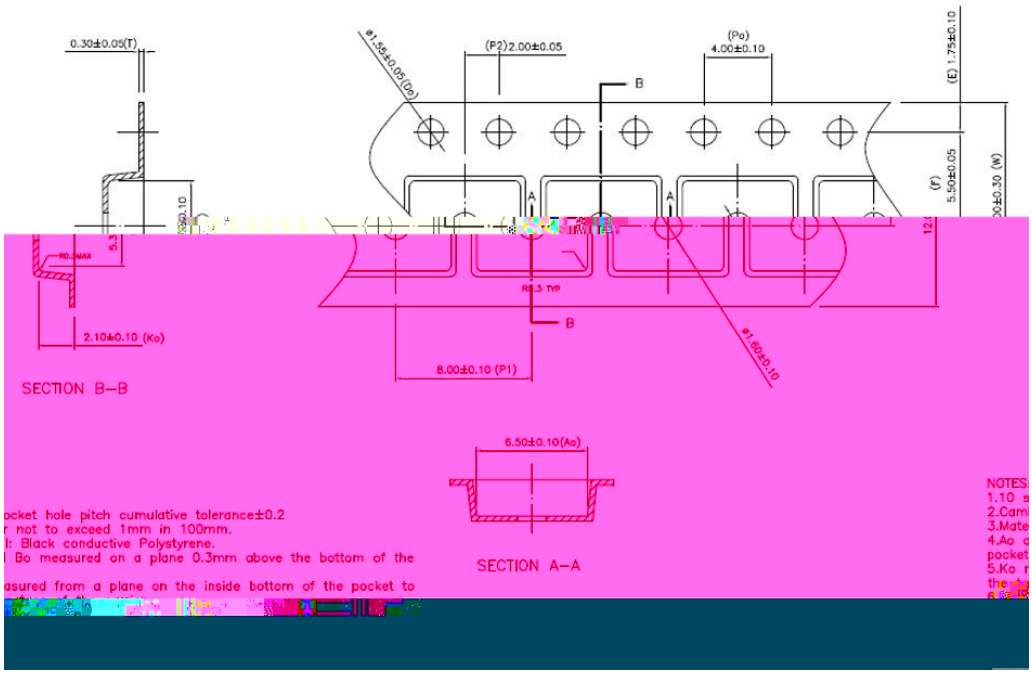
NOTE:

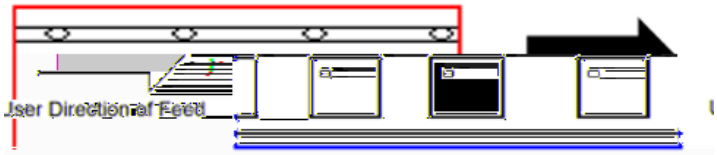
1. L; CHA JLL JI > I < G; > ; J; =E; A I FCI) ; LC CH
2. L; CHA H I =; F
3. FFCI ; L>CG H CH ; L CI G FCG L
4. . B LG; FJ; > B; FF< I F> L > I H B <I ; L>
5. CG H CH I JI > J; > I H <I I G I J; =E; A >I H CI=F > GI F> F; B
6. I H; = <I ; L> ; <LG; CH I LG CI CG G I F> LG; E < I F L; H= < H B JCI

TAPE AND REEL INFORMATION









NOTICE: . B GHI LG; GCH GI BC >I = G H C <D = I =B; HA GBI H G / L BI F> ; LL; H ; H> A ; L; H B BGC> J; L H IF = ; F LL J L LGAB ; L H GI LGIA > JI H B H GI AL; GIA - GGI H I H H . =BH IF A - . JLL > = GI I ; H ; JJFG; GCH - . GFH ; G ; H F A; FL JI H G<GC I L; H ; G ; JJFG; GCH