

4.4V-80V Vin, 1A, High Efficiency Synchronous Step-down DCDC Converter

I Y d a 9 e a 9 d Y a f
 9 = %) ((I Y d a a d d _ J d 2
 % < a L e Y Y) 2 % () * -
 9 e Z a f G Y d _ L e Y J Y f _
 O a A N d Y _ J Y f _ 2 , & N % (N
 f d G f 2) 9
) N) Z Y c J f N d Y _ Y * -
 A _ Y E G K = L + * (e) . (e J f
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 D I a f f 2 , * 9
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 9 b Y Z d f * ((c * & E
 = f Y d d c K f f a Y a f
 + e A f Y d K % Y L æ
 H A a Y
 J Y f e K Y K e a f = E A
 D < f a f Y f E d æ e G f L æ
 f a f
 H a a f = f Y Z d L d Y b Y Z d A
 N d Y _ M f % d Y _ D c G H a f
 M N D G L d Y f a
 K Y % a % Z æ
 G % d Y _ Y f G % e Y H a f
 = K G H % D H Y c Y _

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N ₅ *, N L ₅ %()	)*- a Yd Yd a f *- &			
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N ₅	G Y ₅ _d dY_		, & 0()	N
N ₅ WMNDG	_a MNDG L d	N ₅ a ₅ _	+&- , & +((	N eN
A <F	K f f e N ₅ d	=F5(	(&)&0	9
A	l a f f e N ₅ d	=F5+&N f f% a d_ : GGL%O 5-N	, * . +	9
A a WNE	9 a f e N ₅ d d	N ₅ 5, 0N =F5-N N ₅ ML 5-N f %Y	, .	9

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		L ₅ %() *-	. ((	
J <KGFVD	D %a EGK =L f% a Yf	L ₅ *-	), (). (*(	e
		L ₅ %() *-	+((	

N _J =	J f dY_ :	L ₅ *-	(&1))&)	N
		L ₅ %() *-	(&/-)&*-	

A ₅ W K	a %a EGK =L Yc f d a d		)&)& *	9
A ₅ WKKJ	D %a EGK =L d f d a d		(&)&)&	9
A	R d		*(	e9
N a	a a_ d dY_ f : d		(&/-	N
a W d'	< d' æ a a_		*-.	d
a W Ya	a a f f% æ		. 0	e
A=9 CVE A	E d æ e d Yc f Y HKE e		(&	9

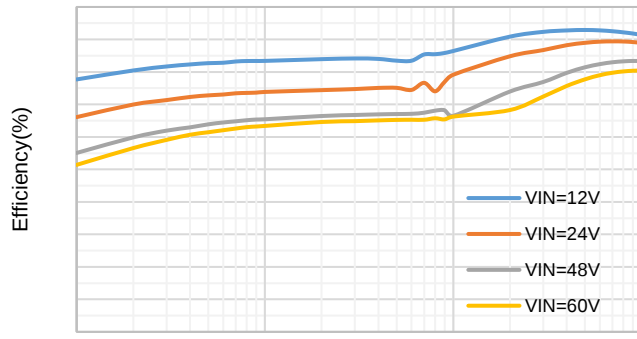
N=FW	=f YZd a d		)&-)&	N
N=FVD	=f YZd d Yf)			

N _{KQF} V _D	JL d dY_ d d d		(&-	N
GFVE A	E d æ e f %æ		). (	f
G VE A	E d æ e %æ		*- (	f
D<G	EY æ e f æ d D<G e		. &	

N _H W _N	H a d_ dY_	POWER GOOD (% of FB voltage)	01	
		POWER BAD (% of FB voltage)	0/	
N _H W _N	H a d_ dY_	POWER BAD (% of FB voltage)	))*	
		POWER GOOD (% of FB voltage)	))(	
N _H W _{DGO}	H dY_ d d d	IPull-Up = 1 mA	0-	e N
H W d	< d æ H % a f Yd		-(	
J _H	H % f % a Yf		0-	

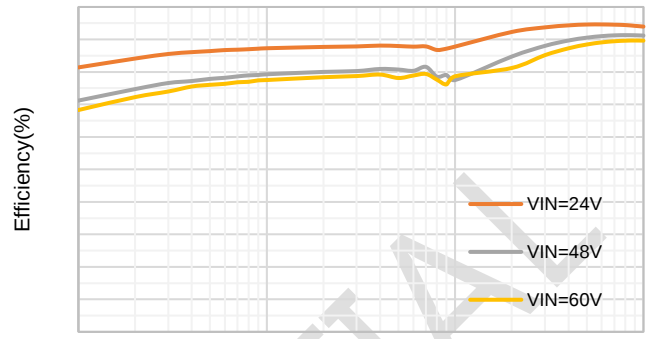
N: GGLMN		: GGL%O Yd_	* &	N
L _{K<}	L e Yd f d	L _B a d_	). 0	
		a	)-	

< a e Z f YY aYaf



Output Current(A)

a_ * &= aaf KO 5, ((c NGML 5-N



Output Current(A)

a_ + &= aaf KO 5, ((c NGML 5)*N

a_ , &D Y J _ d'af N 5, ON NGML 5-N

a_ - &Df J _ d'af NGML 5-N A 59<5)9

a_ . & a f f NK L e Y

a_ / & K J <KGF NK L e Y

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L K L*0)(I a Y, &N%0(Nđ)9
a %a Yf).(e J f d %a
f d _đ dY_

=EA af d f f Z c f
EGK =L &Aæ d ê f f Yf

a Z a%đ +*(e J f
f Yc f e

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O f f Y f_Y Y f dY_ &
O f YZ f aaf Y e dY_ ad af Y f Y & a d Z f
Y a dY_ Z d +/& f

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EGK =L a Yf d %a EGK =L a f89 Z a a d _Y f K L*0)(l a e d æ a
 fYd e f f f &
 L MNDG a %a EGK =L _Y a Y d *8N&O f dY_ Y Z Y Y Y a
 Z d *8N : KL MNDG dY_ Y Z Y Y Y a a d aaf a a %a EGK =L
 d f& f f d %a EGK =L a a Yd dY_ Z Y Y Y a
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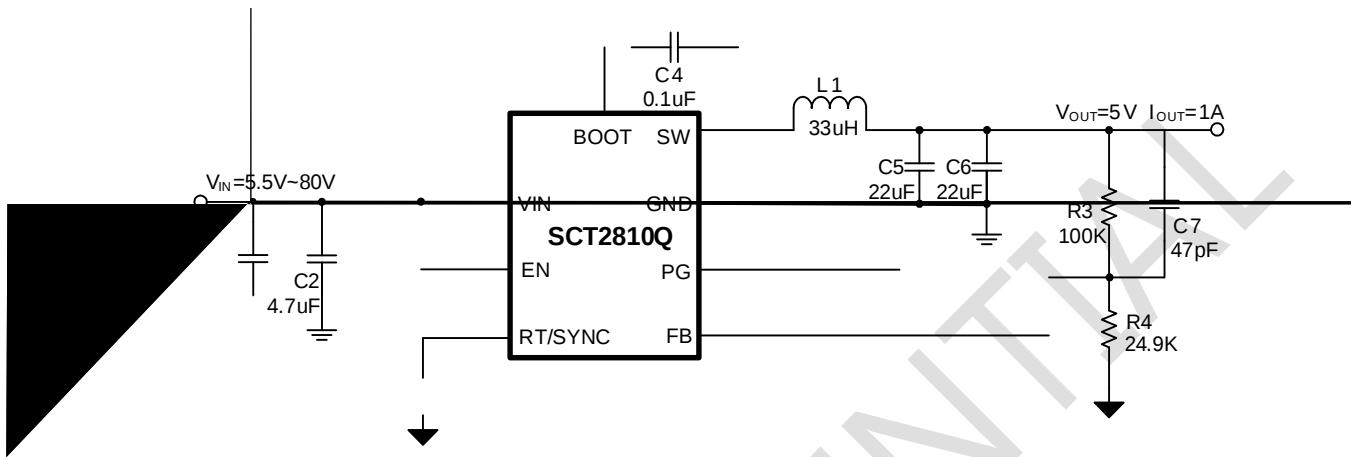
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L a afe YZ eYc Y Y_ a a f Yd d' eYda Yf
_ d' &

L K L*0)(I æ de f G % dY_ H afGNH a a e f æ a dY_ f
dY Yf af f_ e Y d f aaf d dY Yf af &L dY_ e YY f GNH
a a e Y : f dY_ f fYd f dY_ &O f : dY_))* f fYd
)N f dY_ a %a EGK =L f Y a dY_ f f f Y_ Yf & f :
f dY_ Yd Z d))()N f dY_ a %a EGK =L Yf f f Y_ Yf &

L H f a Yf f% Yf & ff f NgML dY_ f _ Y d% a
Z f)(c Yf)((c &HdY f Y dY_ ff H f f *(N&
Gf : f a Z f 01 Yf))(f fYd dY_ f H GG< f a % Yf
f dY a *(dY &L H f a d d f : a d Yf 0/ Y Yf))*
f e f Yd f Yd f dY_ a *(d f æ &O d H a d d a Naf MNDG eYd
f Y Y =F f d d G dY_ af Y Y Yf *(d f _
æ f a H d' &

L K L*0)(I a e YeY_ f a Y Yf a aYaf f aaf &Gf
bf af e Y). 0 f fYd eYd f EGK =L a f &O f
bf af e Y Yd Z d)-+ a Y a f fYd Y Y &



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K a d_ f	, ((c
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L Yf af J f (&-9 (&-9 dY	)10eN

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)N&

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 dY_ Yf f a d & a_ a á_ f Y Y a á_ d a
 f_ Y f Yd aaf Yf eYd eYf &A a af Ye Y a á_
 f , ((c a d Y a Z eYd daf a Yf a_ aaf Yaf&

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KO a a a á_ f &

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 JEK f Yf < a Yf < J &DY_ á Yf d á d á f a d Yf dY
 d dY_ a d& dY_ Yd á Yd Y f YZa_ aYd a
 a_ a a Yf Yf d Y Yaf f &9_ d eáf_ á Yf a Yd
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A_H a á Yc%% Yc f &
 Da á Yf á &
 KO a a á_ f &

NGML a dY_ &
NÆ a dY_ &

Kd f % f a d f Y a d dY_ eYæ e d dY_ f Y dYaf a
Yd Y Yd dY e dæ e d Yf a &M = Yaf 0 Yd dY d Yf Yd &

0

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DeÆ a e dæ e d Yf a &
a a d_ f &
NGML a dY_ &
NÆ eY a eYæ e d dY_ &
A_ML eY a eYæ e < dY f &
DAI a aaf A_HH A_ML&

L Yd f d d_ - d a d a d f d f &O f d d_
Yf d a Y - f d d Y Yaf f d_ Yf a Yc Yaf f Yf
JEK f Yd f Z &L Yc a d_ f d A_H=9C Yf A_EK Yf Z
Yd dY Y d = Yaf 1 Yf = Yaf)(&

1

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O 2

A_H=9C dW d f d Yc f &
A_ML a < dY f &
A_HH a d Yc% % Yc f &
A_EK a d JEK f &

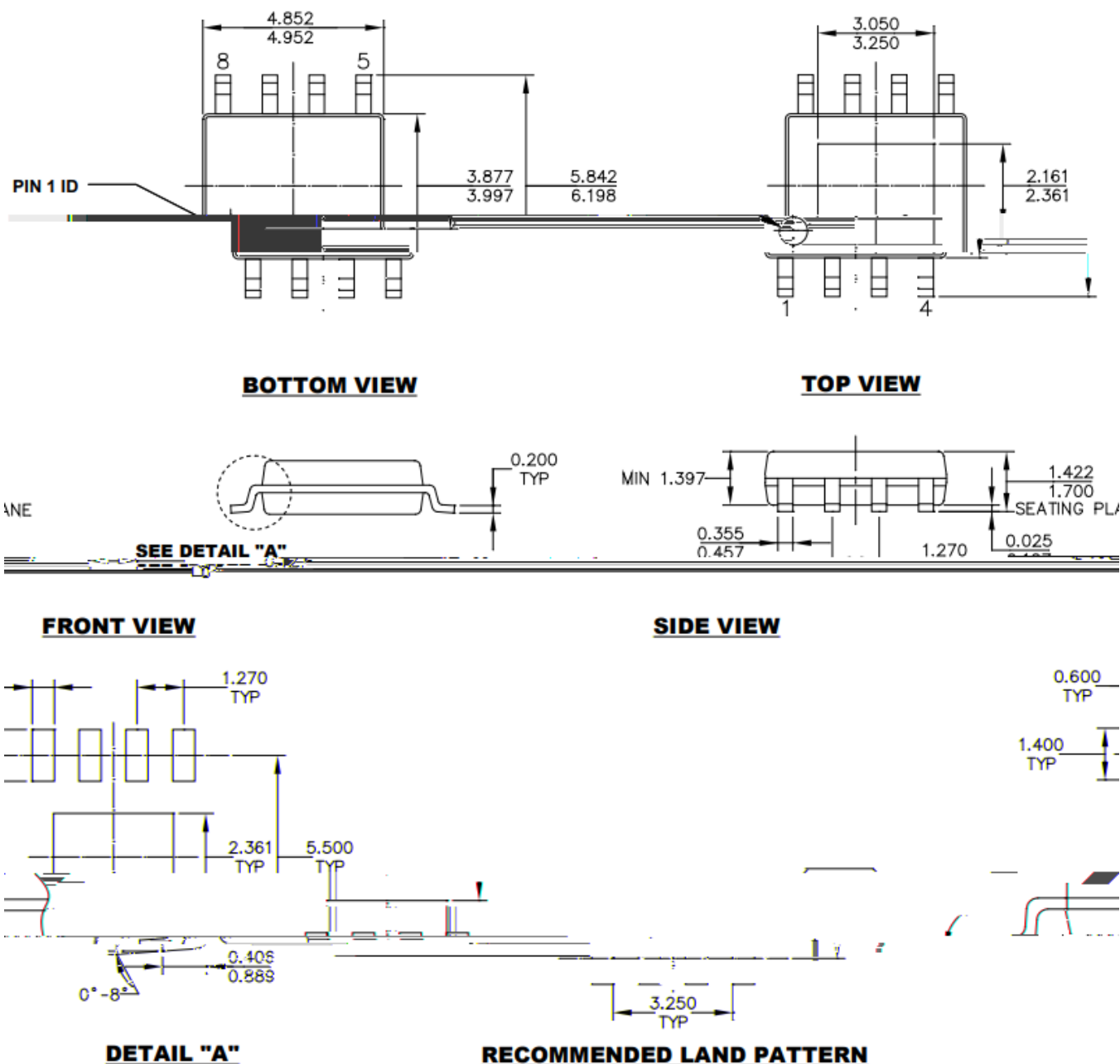
A dY d_ dY Yf af f aaf d Yc f Yf d Y a f d a
a a a aYd)&9&L e f Ya Y Y a Yf d a Y Y Yaf f
Yf_ Y Yf)&9&: Y eYæ e A_H=9C d a Z a eYæ e f Y
K L*0)(I Yf d Yd f f d f a d&L eYæ e a f Yd
Y d af d Yf &L eYd d d dY_ d f a d dY d_ Y

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NOTE:

1) ALL DIMENSIONS ARE IN MILLIMETERS.
 2) PACKAGE LENGTH DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
 3) PACKAGE WIDTH DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSIONS.
 4) LEAD COPLANARITY (BOTTOM OF LEADS AFTER FORMING) SHALL BE 0.1 MILLIMETER MAX.

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- 5) DRAWING REFERENCE TO JEDEC MS-012, VARIATION AA.
- 6) DRAWING IS NOT TO SCALE.

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