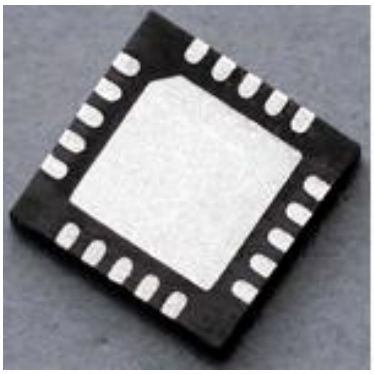
MCF1124

MCF1124 LDO N
LDMOS N
LDMOS LDO
5V QFN20L

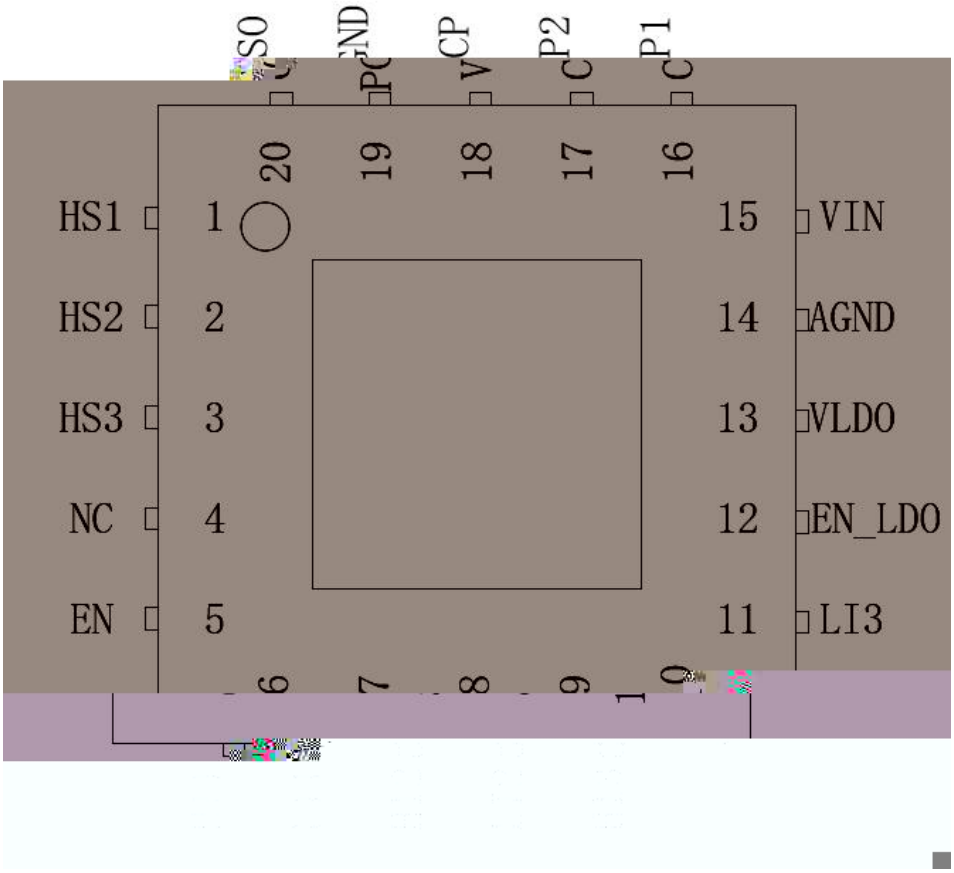


1.1 QFN20L

HI LI
GATE

- N LDMOS
- R_{DSON}=1.96Ω
- I_{load}=500mA
- LDO 300mA
- 3.3V/5V
- VIN+5V
-
-
-
-
- standby 10uA
- AEC-Q100
- RoHS

MCF1124	QFN20L	



3.1 MCF1124

MCF1124 CP1 CP2 VCP VIN

VLDO PGND

1) HI1 HI3 LI1 LI3

HI LI 1 3

HI LI

“ 11 ”

/

“ 11 ”

2) HS1 HS3

HS HS VCP

HI

PGND

8) CSO

CSO PGND PGND

V_{PGND} 0 PGND

PGND V_{PGND}

V_{ref} V_{PGND} V_{ref} CSO

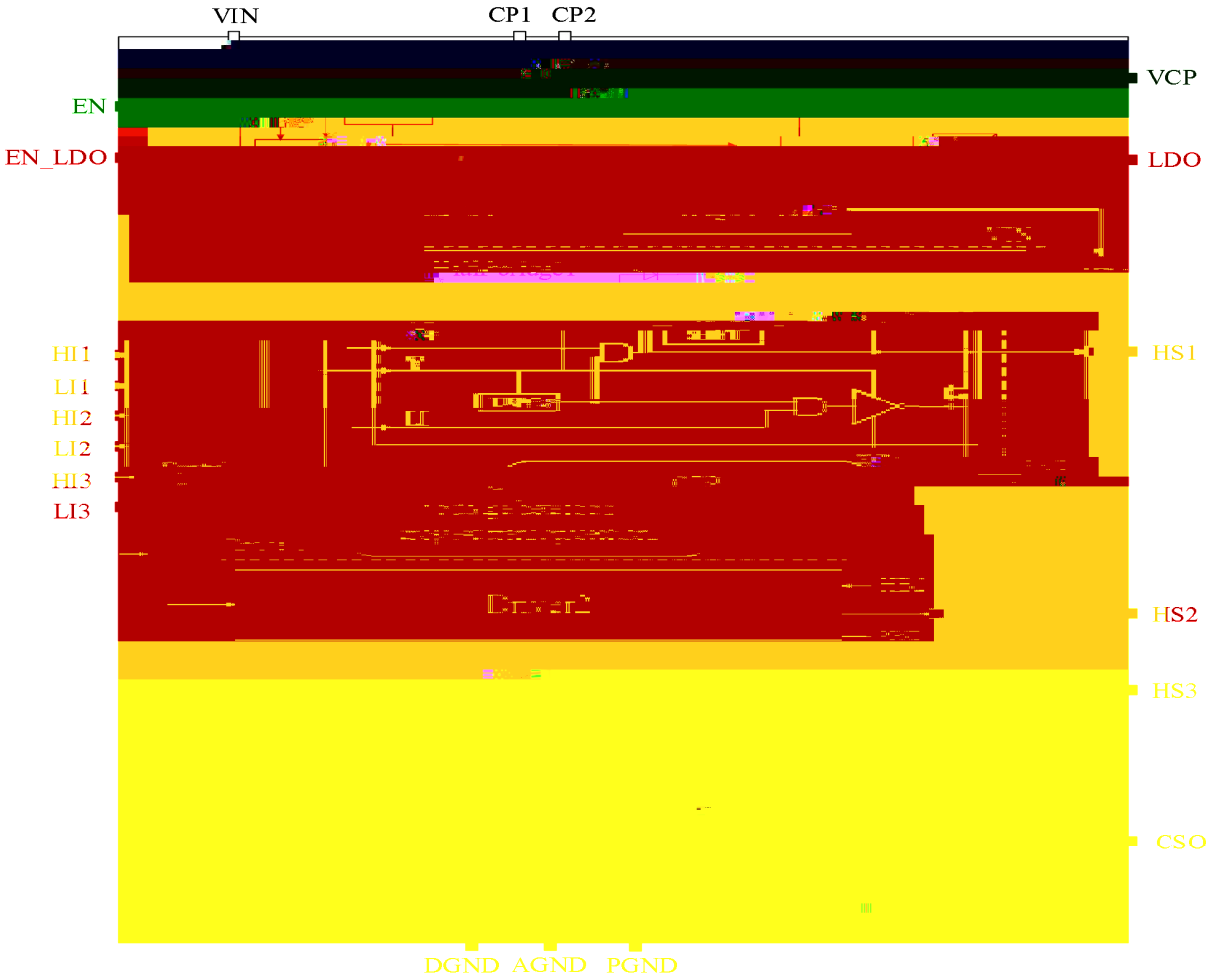
CSO

PGND

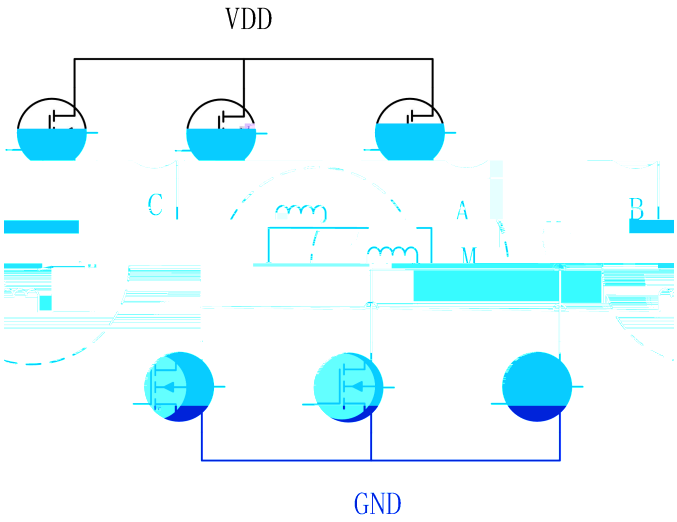
CS

3.1

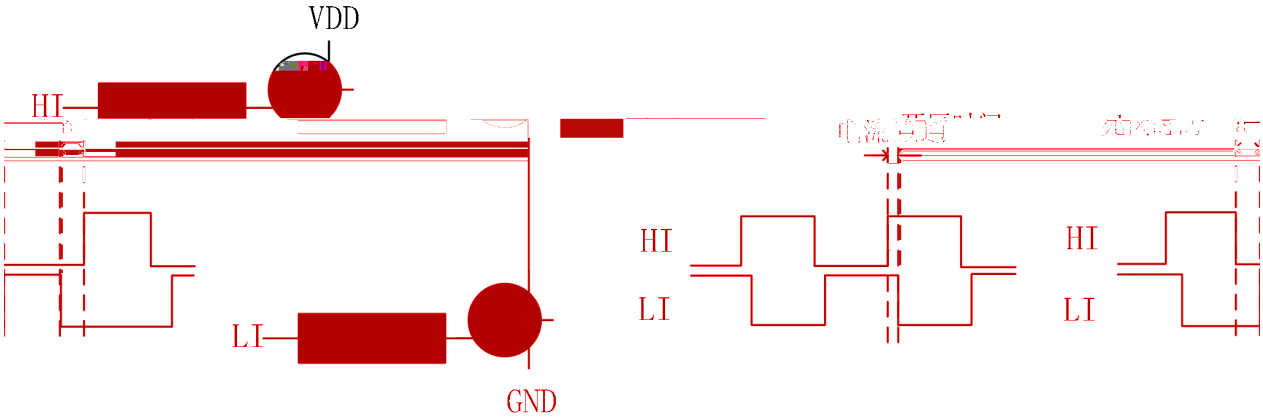
1	HS1	1
2	HS2	2
3	HS3	3
4	NC	
5	EN	standby
6	HI1	1
7	LI1	1
8	HI2	2
9	LI2	2
10	HI3	3
11	LI3	3
12	EN_LDO	VLDO VLDO 5V VLDO 3.3V
13	VLDO	3.3V/5V
14	AGND	
15	VIN	
16	CP1	
17	CP2	
18	VCP	VIN
19	PGND	1 3
20	CSO	PGND


VIN
CP1
CP2
VCP
EN
EN_LDO
LDO
HI1
LI1
HI2
LI2
HI3
LI3
HS1
HS2
HS3
CSO
Driver
DGND
AGND
PGND

3.2



4.2

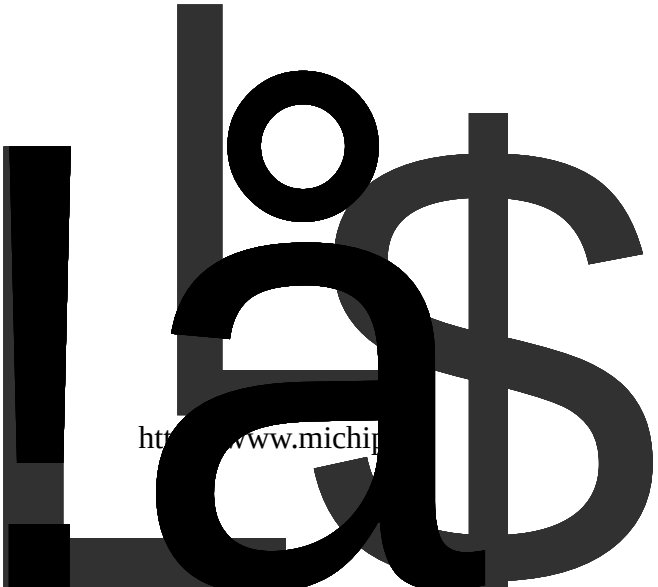


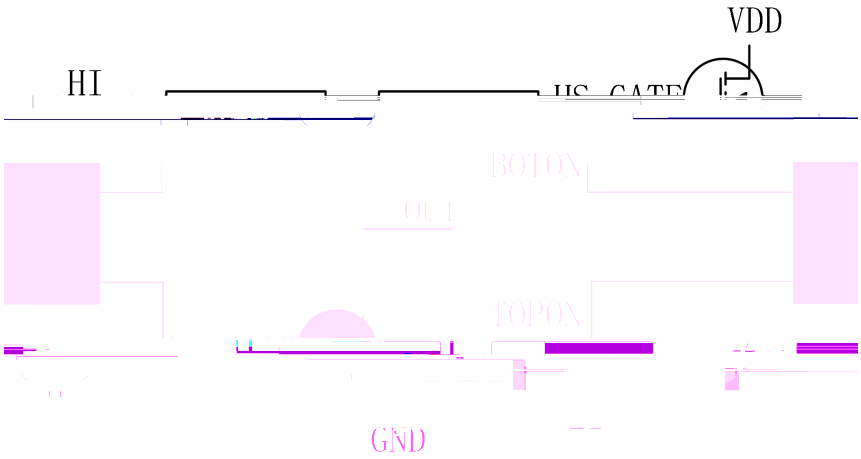
4.4 N LDMOS HI LI 4.4b

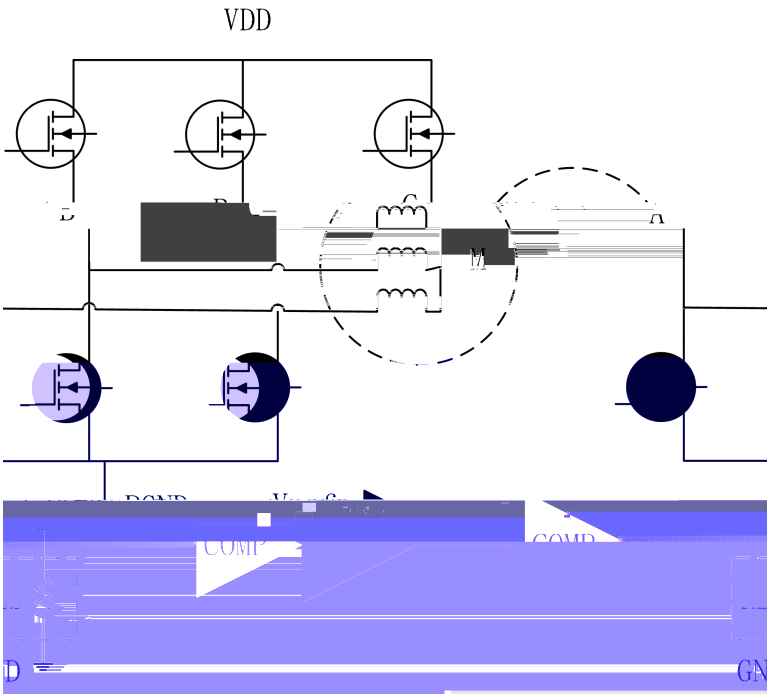
HI LI VDD GND

4.4 c

HI

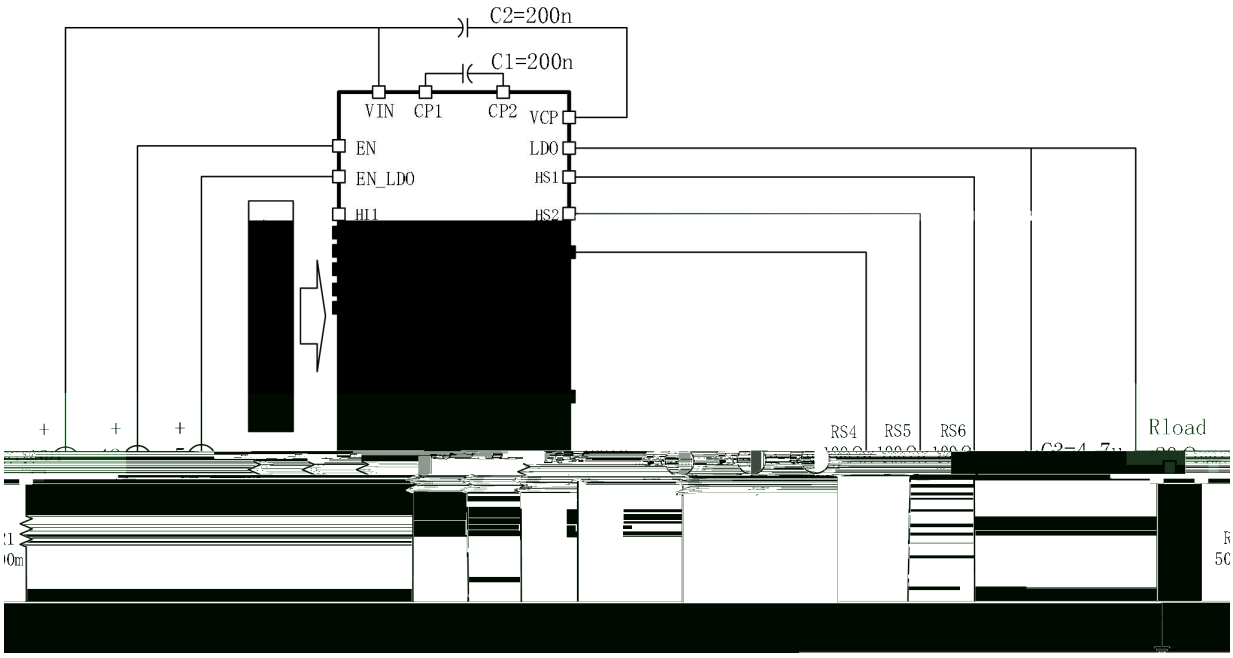



VDD
HI
BOTOX
OUT
TOPOX
GND



4.4

N



5.1

5

Tj = -40 150

	VIN	-0.3	66	V	
	EN	-0.3	66	V	
	EN_LDO	-0.3	7	V	
	HI1 HI3 LI1 LI3	-0.3		V	
	HS1 HS3	0	60	V	
	VLDO	-0.3	5.5	V	

	CSO	-0.3	5.5	V	
	Tj		150		
	Tstg	-40	150		
	Rthj-a	50	90	K/W	
ESD [1]	$V_{ESD-HBM}$	-2000	2000	V	

1) ESD JESD22-A114

5.2

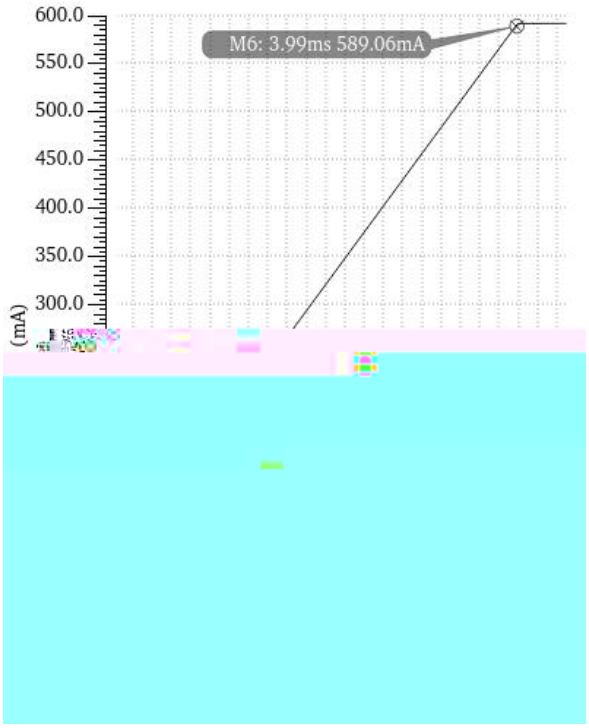
(VIN=48V 25 5.1)

I_{VIN}		RS1~RS3 Rload EN=VIN	1.74		1.92	mA
IQ	Standby	EN=0	8.3	8.5	10	uA
I_{HS}		HI LI		472.37		mA
V_{HS}				47.24		V
Vdr	V_{HS} V_{VIN}			0.76		V
R_{DSON_drv}				1.609		Ω

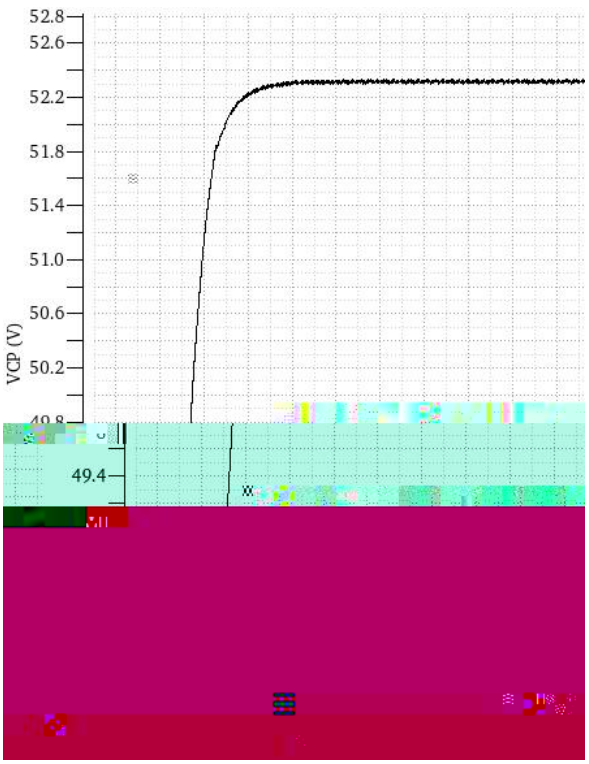
I_{VLDO}	LDO	EN_LDO	248.4	250.5	251.4	mA
V_{VLDO}	LDO			5.01		V
R_{DSON_LDO}	LDO	GATE		4		Ω
V_{EN_LDO}		V_{EN_LDO} 0~5V		3.06		V
V_{HI}/V_{LI}		HI/LI 0~5V		3.14 1.77		V
V_{UVLO}		VIN 0~5V		2.92 2.74		V
V_{OV-DET}		VIN 0~65V		50.32 48.96		V
V_{CP1}		LDO	52.29 47.83	52.88 47.95		V
V_{CP2}			47.76 42.91	47.9 42.95		V
V_{VCP}			48	52.77	52.9	V
V_{CSO}		V_{PGND} V_{CSO} V_{PGND}		500.4 441.77		mV
TSD				160		
THYST				18		

5.3

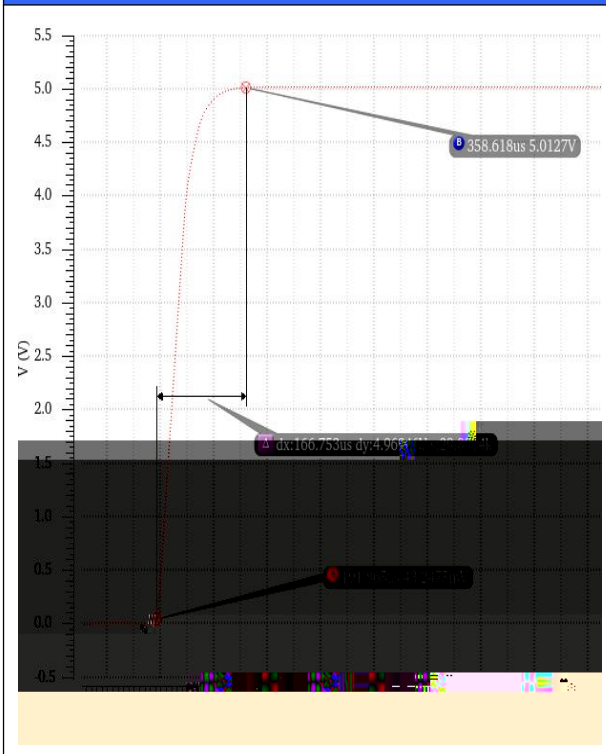
VIN=30 V TAMB = 25 5.1



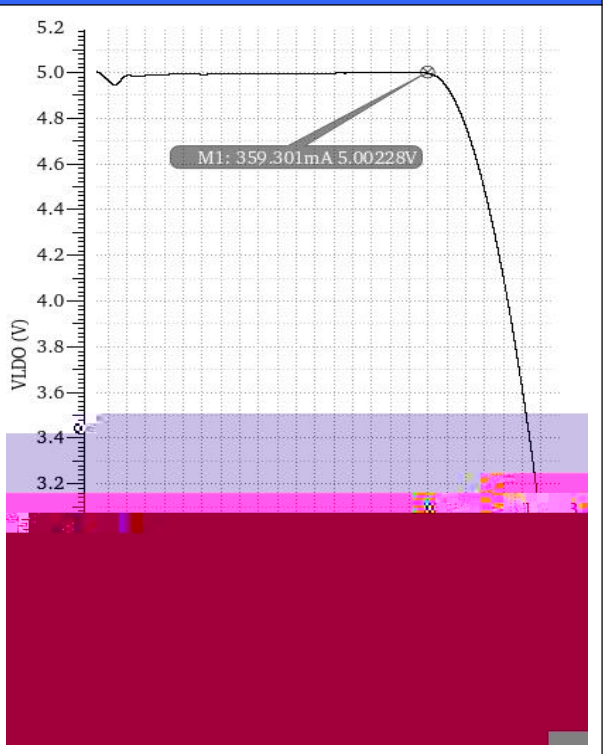
VIN VS I_{HS}



VCP

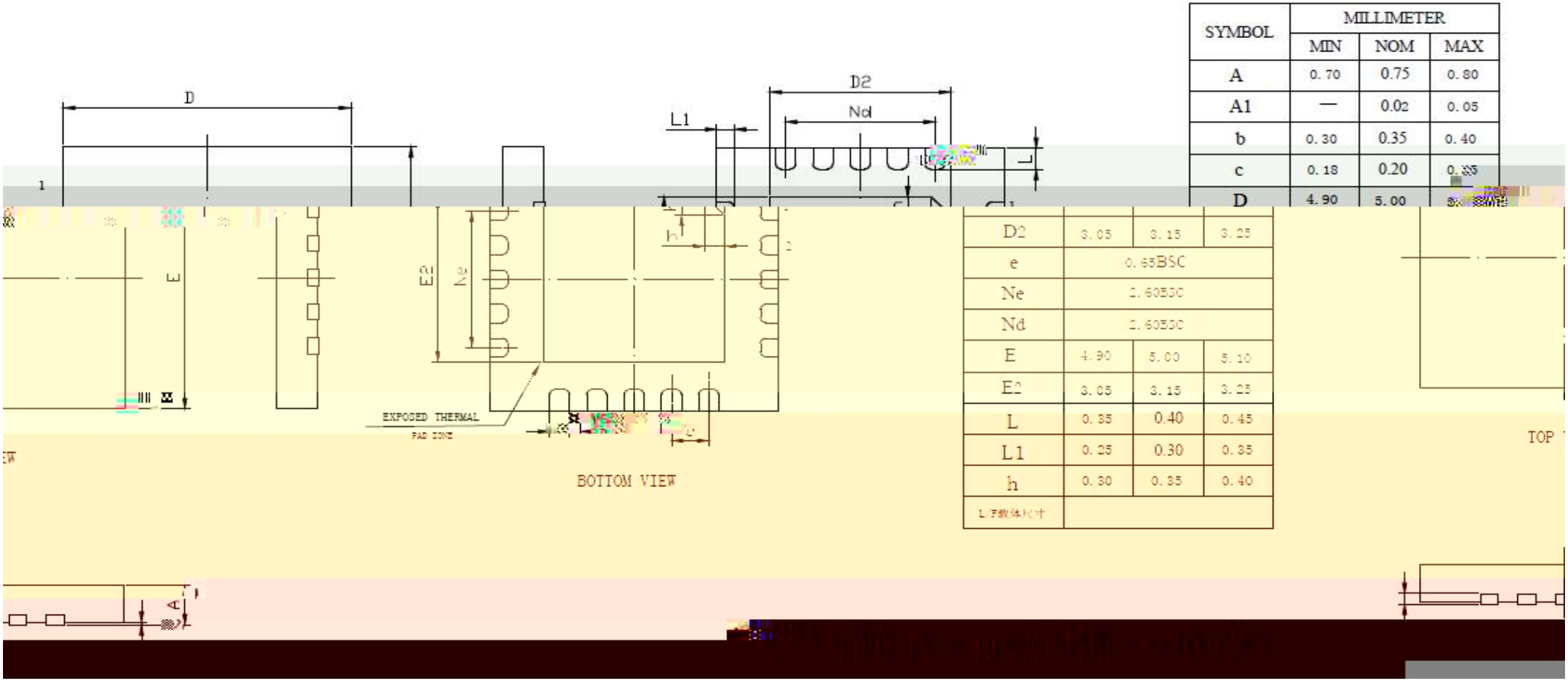


LDO



LDO VLDO I_{LDO}

MCF1124



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	—	0.02	0.05
b	0.30	0.35	0.40
c	0.18	0.20	0.25
D	4.90	5.00	5.10
D2	3.05	3.15	3.25
e	0.65BSC		
Ne	2.60BSC		
Nd	2.60BSC		
E	4.90	5.00	5.10
E2	3.05	3.15	3.25
L	0.35	0.40	0.45
L1	0.25	0.30	0.35
h	0.30	0.35	0.40
L/F载体尺寸			

QFN20