

500V breakdown voltage Full bridge driver IC SPF5104 (Positive driver system)

Features

- 500V breakdown voltage positive power supply drive system
- Adopt bootstrap circuit system
- Encapsulate MOSFET (4pieces) and a control MIC
- Compact type power surface mount package
- Suitable for inverter element for HID ballast unit

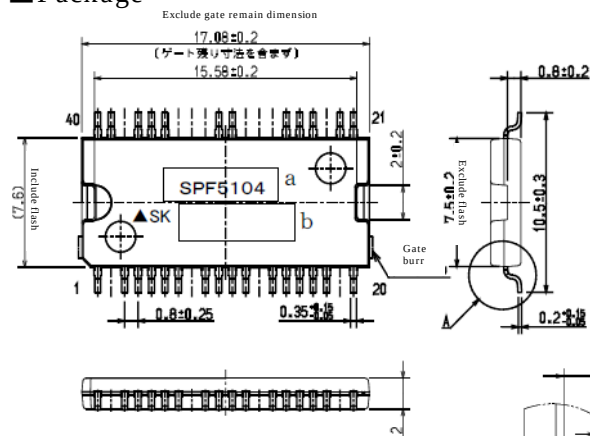
Absolute maximum ratings

No.	Item	Symbol	Unit	Rating	Conditions
1	Power supply voltage 1	VBB	V	-0.3~500	between VBB and GND
2	Input voltage	VIN1	V	-0.3~6	
		VIN2	V	-0.3~6	
3	Power supply voltage 2	VB	V	-0.3~20	
4	Floating power supply voltage	VC1	V	-0.3~520	
		VC2	V	-0.3~520	
5	Output voltage	VOUT1	V	-0.3~C1-20	between VOUT1 and GND
		VOUT2	V	-0.3~C2-20	between VOUT2 and GND
6	Output current	IOUT(DC)	A	7 *1	Ta=25°C, VB=VC≥8V, VBB=10V
7	Total power dissipation	PD	W	27.2 *2	Tc=25°C
8	Storage temperature	Tstg	°C	-40~+150	
9	Junction temperature	Tj	°C	150	

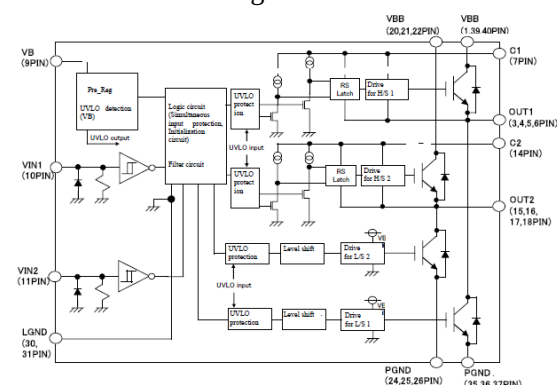
Electrical characteristics

No.	Item	Symbol	Unit	Value			Conditions
				Min.	Typ.	Max.	
1	IGBT output breakdown voltage	BVOUT	V	500			*3 IOUT=100uA, Tj=-40~150°C
2	IGBT output leakage current	IOUT(off)	uA			100	IOUT=100uA
3	IGBT output on-state voltage	VOUT(on)	V		1.2	1.5	IOUT=1A, VIN=5V
4	Circuit current	IB1	mA		2	5	Tj=25°C, VIN1=VIN2=0V
					2	5	Tj=-40~150°C, VIN1=VIN2=0V
		IB2	mA		2	6	Tj=25°C, VIN1=5V(0V), VIN2=0V(5V)
					2	6	Tj=-40~150°C, VIN1=5V(0V), VIN2=0V(5V)
5	Floating power supply leakage current to GND	ILK	uA			100	VCx=VOUTx=400V
6	Floating power supply leakage current to output	ICOLK	uA		100	200	VCx-VOUTx=10V
7	Input threshold voltage	VINthH	V	3.5			VB=7~20V, Tj=-40~150°C
		VINthL	V			1.0	
8	Input bias current	IINH	uA			250	VIN1=VIN2=5V
		IINL	uA	-1		1	VIN1=VIN2=0V
9	Delay time	td(on)	us		0.40	0.50	VBB=42V, I0=0.8A
					1.60	2.10	VB=10V, VC=10V
		td(off)	us		0.25	0.35	VBN=5V(Out Stage=ON)
					1.10	1.60	VBN=0V(Out Stage=OFF)
		Δtd				2.5 *4	Δtd=H/S td(off) - L/S td(on)
							or L/S td(off) - H/S td(on)
10	UVLO voltage	VUVLOH	V	3.6	4.1	4.6	Release voltage
		VUVLOL	V	3.4	3.9	4.4	Lockout voltage
11	UVLO start voltage hysteresis voltage	ΔVUVLO	V		0.2	0.4	ΔUVLO=VUVLOH-VUVLOL
12	UVLO start voltage between C and O	VUVLOCO	V		3.0		There is no hysteresis.
13	Operating voltage	VB	V	6		20	Tj=-40~+150°C

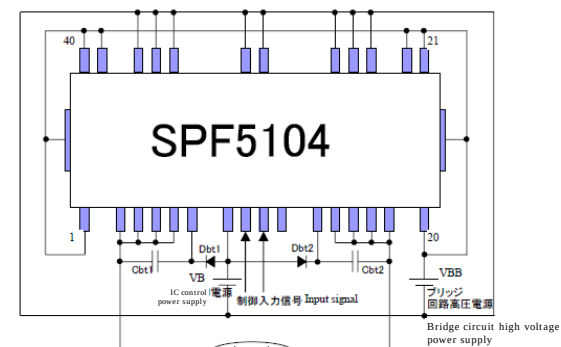
Package



Circuit block diagram



Typical connection diagram



Timing chart

