Features

- Built-in diagnostic function to detect short and open circuiting of loads and output status signals
- DMOS 2ch output
- Allows ON/OFF using C-MOS logic level
- Built-in overcurrent and thermal protection circuits

Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Ratings	Unit	Conditions
Power supply voltage	V_B	35	V	
Input terminal voltage	V_{IN}	–0.3 to 7	V	
Input terminal current	I_{IN}	5	mA	
DG terminal voltage	V_{DG}	–0.3 to 7	V	
DG terminal current	I_{DG}	5	mA	
Drain to source voltage	V_{DS}	V_B–45	V	
Output current	I_O	2.5	A	
Power dissipation	P_D	2.7	W	Ta=25°C
Source to drain Di forward current	I_F	0.8	A	
Channel temperature	Tch	150	°C	
Operating temperature	T_{OP}	–40 to +105	°C	
Storage temperature	Tstg	–40 to +150	°C	

Electrical Characteristics

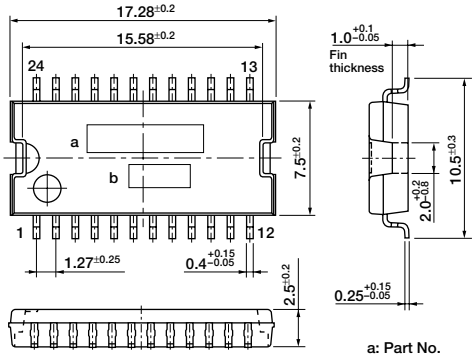
(V_B=14V, Ta=25°C unless otherwise specified)

Parameter		Symbol	Ratings min	Ratings typ	Ratings max	Unit	Conditions
Operating power supply voltage		$V_{B\ (opr)}$	5.5		35	V	
Quiescent circuit current		Iq			1	mA	V_{IN}=0V, V_{OUT}=0V
Output ON resistance		$R_{DS\ (ON)}$			150	mΩ	I_O=2A
					250	mΩ	I_O=1A, Ta=80°C
Output leak current		I_O, leak		50		μA	V_{OUT}=0V
Input voltage	Output ON	V_{IH}		2.0	3.0	V	Ta= –40 to +105°C
	Output OFF	V_{IL}	1.0	1.8		V	Ta= –40 to +105°C
Inpup current	Output ON	I_{IH}		70		μA	V_{IN}=5V
Overcurrent protection starting current		I_S	2.6			A	V_{OUT}=V_O–1.5V
Internal current limit		I_{Lim}		10		A	V_{OUT}=0V
Thermal shutdown operating temperature		T_{TSD}	155	165		°C	
Load open detection threshold voltage		Vopen		3		V	
Output transfer time		T_{ON}		165		μs	
		T_{OFF}		60		μs	
DG leak current		I_{DG}			20	μA	V_{DG}=5.5V
Low level DG output voltage		V_{DGL}		0.15		V	I_{DG}=1.6mA
DG output transfer time		T_{PLH}		70		μs	
		T_{PHL}		45		μs	

Recommended Operating Conditions (for one channel)

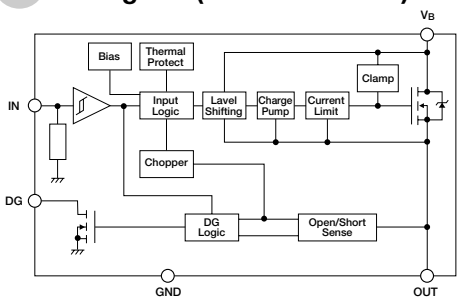
Parameter	Ratings min	Ratings max	Unit
Power supply voltage	5.5	16	V
V_{IH}	4	5.5	V
V_{IL}	–0.3	0.9	V
I_O		1.15	A
R_{IN}	10	20	kΩ
R_{DG}	10	20	kΩ

External Dimensions (unit: mm)

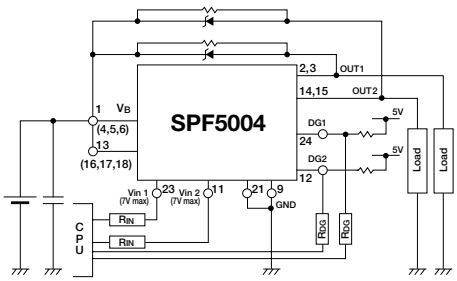


a: Part No.
b: Lot No.

Block Diagram (for one channel)

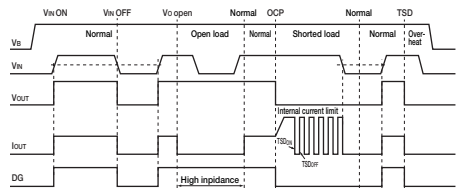


Standard Connection Diagram



* Make VB of 4Pin, 5Pin, 6Pin, 16Pin, 17Pin and 18Pin short from the fin to be plated by solder.

Timing Chart



Mode	V_{IN}	DG	V_O
Normal	H	H	H
	L	L	L
Open load	H	H	H
	L	H	H
Shorted load	H	L	L (Limiting)
	L	L	L
Overheat	H	L	L
	L	L	L