

SPECIFICATION (TENTATIVE)

Device Name : High-Side Intelligent Power Switch(IPS)

Type Name : F5044H

Spec. No. : MT5F 9488

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- 1.Scope** This specifies Fuji High-Side Intelligent Power Switch F5044H
- 2.Construction** Self-Isolation structure
Output part; N-channel enhancement mode
- 3.Application** For switching
- 4.Outview** SOP-8 (EIAJ SC-87) Outview See to 5/5 Page

5.Absolute maximum ratings (at Tc=25°C. unless otherwise specified.)

Description	Symbol	Characteristics	Unit	Conditions
Supply voltage	V_{CC}	50	V	Pulse 0.25 sec
Supply voltage	V_{CC}	33	V	DC
Continuous Drain current	I_D	3	A	
Input voltage	V_{IN}	$-0.3 \sim V_{CC}+0.3$	V	DC
Status current	I_{ST}	5	mA	
Maximum power dissipation	P_D	1.5	W	*
Operating junction temperature	T_J	150	°C	
Storage temperature range	T_{stg}	$-55 \sim 150$	°C	

* Surface Mounted on 1000mm² PCB(FR-4)

6.Electrical characteristics (at Tc=25°C. unless otherwise specified.)

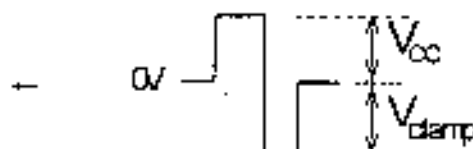
Description	Symbol	Conditions	Characteristics			Unit
			min.	typ.	max.	
Operating voltage	V_{CC}		6		28	V
Standby current	I_{CC}	$V_{CC}=13V \quad R_L=10\Omega$ $V_{IN}=0V$			3	mA
Input voltage	$V_{IN(H)}$	$V_{CC}=13V$	3.6			V
	$V_{IN(L)}$	$V_{CC}=13V$			1.5	V
Input current	$I_{IN(H)}$	$V_{CC}=13V \quad V_{IN}=5V$			12	μA
On-state resistance	$R_{DS(on)}$	$V_{CC}=13V \quad I_L=1.25A$			0.11	Ω
Output leakage current	I_{OL}	$V_{CC}=13V$			0.5	mA

Description	Symbol	Conditions	Characteristics			Unit
			min.	typ.	max.	
Over-current detection **	I_{OC}	$V_{CC}=13V$	3		6	A
Peak-current under Over-current detection	P_{peak}	$V_{CC}=13V$		10		A
Over-temperature shutdown	T_{trip}	$V_{CC}=13V$	150		200	°C
Over-voltage shutdown	V_{OV}		26		33	V
Turn-on Time	t_{on}	$V_{CC}=13V$			100	μs
Turn-off Time	t_{off}	$R_L=10\Omega$			40	μs
Status voltage	V_{SRL}	$V_{CC}=13V$ $R_L=10\Omega$ $V_{IN}=0V$ $I_{BT}=1mA$			0.4	V
Status leakage current	I_{SRL}	$V_{CC}=13V$ $R_L=10\Omega$ $V_{IN}=5V$			10	μA
Output-clamp voltage ***	V_{CLAMP}	$V_{CC}=13V$ $I_L=1.0A$ $V_{IN}=0V$ $L=10mH$	$-(50-V_{CC})$		$-(60-V_{CC})$	V
Diode forward on-voltage	V_{SD}	$V_{IN}=0V$ $I_{SD}=-6A$			1.5	V
Open-load detection	R_{LOPEN}	$V_{CC}=13V$ $V_{IN}=0V$	5		30	kΩ

** At Over-current detection, the device moved switching mode.

*** <Output-clamp voltage : V_{CLAMP} >

$$50V \leq V_{CC} + V_{CLAMP} \leq 60V$$



7. Thermal resistance

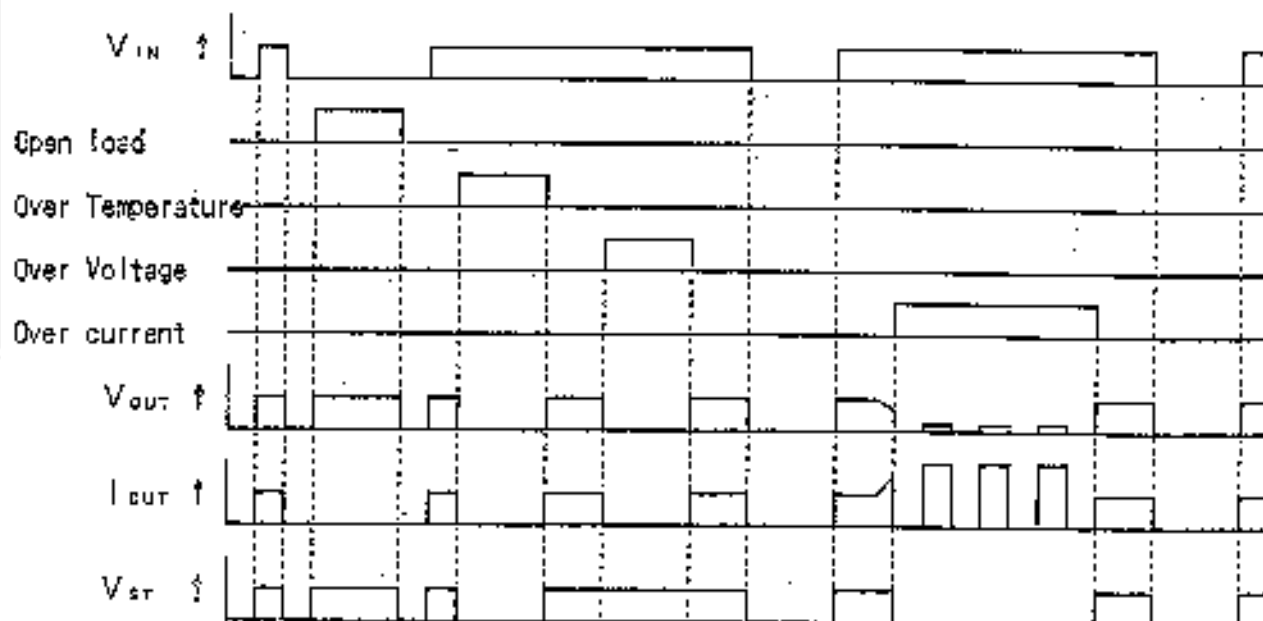
Description	Symbol	Conditions	Characteristics			Unit
			min.	typ.	max.	
Thermal Resistance	$R_{th(j-c)}$	Junction - case			4.17	°C/W
	$R_{th(j-a)}$	Junction - ambient ****			83.0	°C/W

**** Surface Mounted on 1000mm² PCB (FR-4)

8. Truth Table

	Input voltage	Status voltage	Output voltage	Remarks
Normal operation	L H Open	L H L	L H L	
Open load	L	H	H	Auto-restart
Over current	L H	L L	L L	swtting mode Auto-restart
Over Temperature	L H	L L	L L	Auto-restart
Over Voltage	L H	L H	L L	Auto-restart

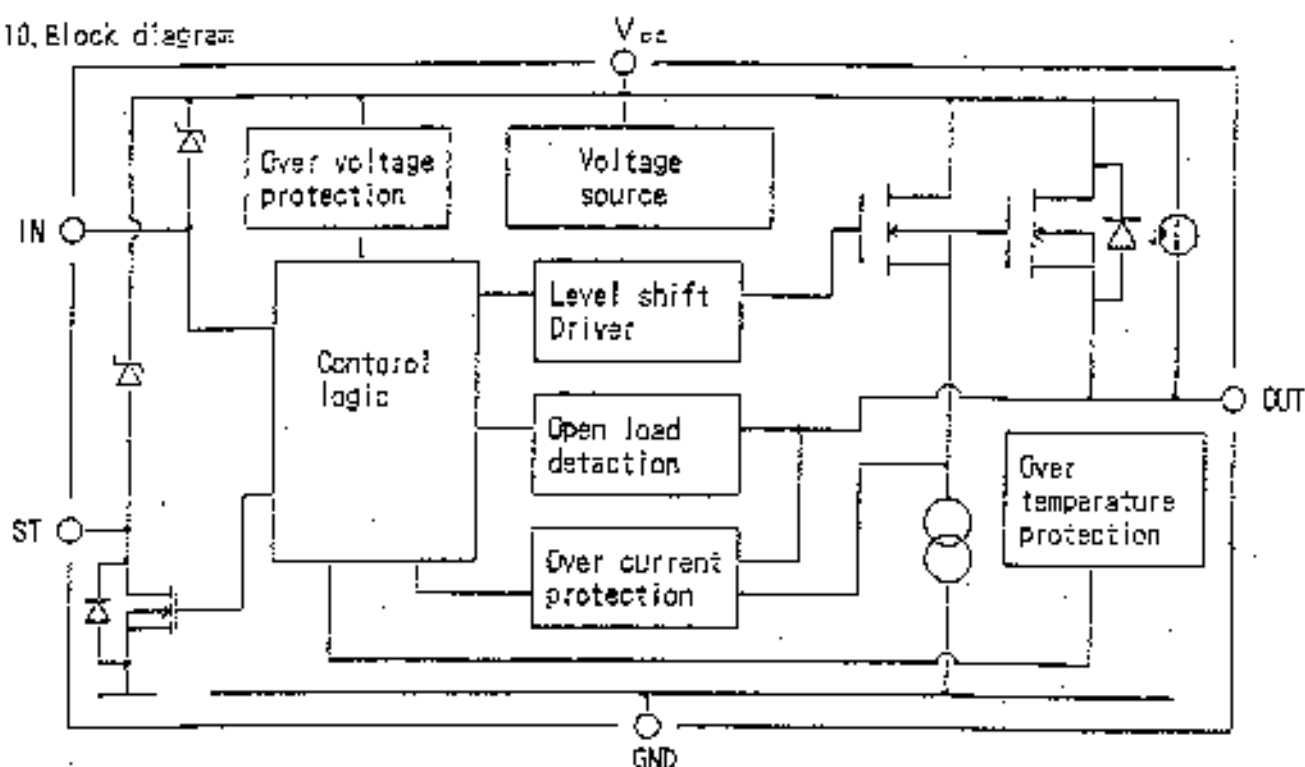
9. Timing Chart



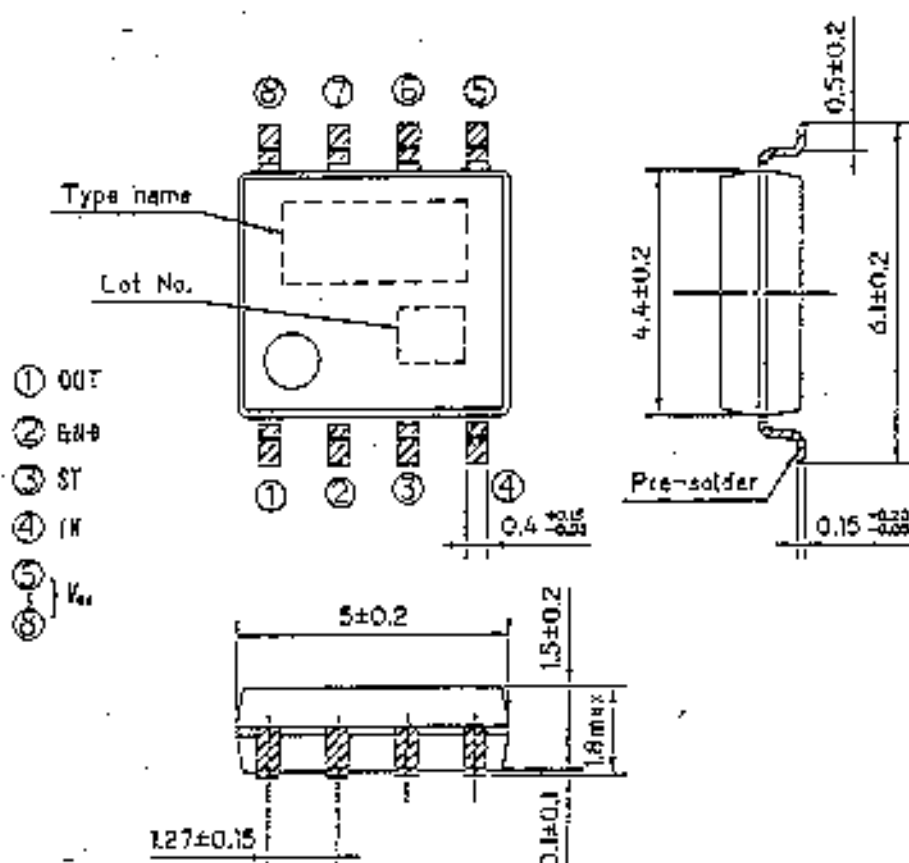
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10. Block diagram



11. Out View



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