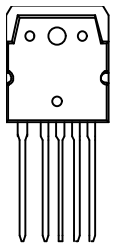
KA1L0680

S P S

FEATURES

- Precision fixed operating frequency (50KHz)
- Pulse by pulse over current limiting
- Over load protection
- Internal thermal shutdown function
- Under voltage lockout
- Internal high voltage sense FET
- Soft start
- Low Start up Current (≤0.4mA)

TO-3P



1.DRAIN 2.GND 3.Vcc 4.FB 5.Soft Start

PRODUCT SUMMARY

Part Number	BVdss	Rds(on)	I_D
KA1L0680	800V	1.9 Ω	6A

ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C , unless otherwise specified)

Characteristics	Symbol	Value	Unit
Drain - Source(GND) Voltage (1)	V_{DSS}	800	V
Drain - Gate Voltage (R_{GS} =1M Ω) (1)	V_{DGR}	800	V
Gate - Source(GND) Voltage	V_{GS}	±30	V
Rise Time (2)	Tr	150	ns
Fall Time (2)	Tf	130	ns
Drain-Sourse Off State Leakage Current (Vds = 0V, Vgs = 0V)	I_{DSS}	250	uA
Continuous Drain Current (Tc = 25°C)	I_D	6.0	A_{DC}
Supply Voltage	V_{CC}	30	V
Analog Input Voltage Range	V_{FB}	-0.3 ~ V_{SD}	V
Total Power Dissipation	P_D (wt H/S)	150	W
	Derating	1.21	W/ °C
Operating Temperature	T_{OPR}	- 25 ~ + 85	°C
Storage Temperature	T_{STG}	- 55 ~ + 150	°C

Notes: (1) T_J = 25°C to 150°C
(2) V_{DD} = 400V, I_D = Max. Rating, V_{GS} = 10V

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ELECTRICAL CHARACTERISTICS (Control part)

(Ta = 25 °C unless otherwise specified)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
REFERENCE SECTION						
Vref	Output Voltage (note 1&3)	4.80	5.00	5.20	V	Tj = 25 °C
Vref/ ΔT	Temperature Stability (note 1&3)	-	0.3	0.6	mV/ °C	-25°C ≤ Ta ≤ +85°C
OSCILLATOR SECTION						
FOSC	Initial Accuracy	45	50	55	KHz	Ta = 25 °C
ΔF / ΔT	Frequency Change with Temperature	-	±5	±10	%	-25°C≤ Ta≤ +85°C
PWM SECTION						
DMAX	Maximum Duty Cycle	62	67	72	%	
FEEDBACK SECTION						
I FB	Feedback Source Current	-	1.0	-	mA	Ta = 25 °C , Vfb = 0V
Idelay	Shutdown Delay Current	-	5	-	uA	Ta = 25 °C , 5 V≤ Vfb≤ V SD
OVER CURRENT PROTECTION SECTION						
IL(MAX)	Over Current Protection	3.4	4.0	4.6	A	Max. Inductor Current
UVLO SECTION						
Vth(H)	Start Threshold Voltage	14	15	16	V	
Vth(L)	Minimum Operating Voltage	9	10	11	V	After turn on

ELECTRICAL CHARACTERISTICS (Continued)

(Ta = 25°C unless otherwise specified)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
TOTAL STANDBY CURRENT SECTION						
I_{ST}	Start up Current		0.25	0.4	mA	V_{CC} = 14V
I_{OPR}	Operating Supply Current (control part only)		15	18	mA	
V_Z	Vcc Zener Voltage	30	32.5	35	V	I_{CC} = 20mA
SHUTDOWN SECTION						
V_{SD}	Shutdown Feedback Voltage	7	7.6	8.2	V	
T_{SD}	Thermal Shutdown Temperature		150		°C	Note 1

Notes: (1) These parameters, although guaranteed,are not 100% tested in production
(2) In output section, the design target is the maximum current after current clamping
(3) These parameters, although guaranteed,are tested in EDS(wafer test) process.

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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
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