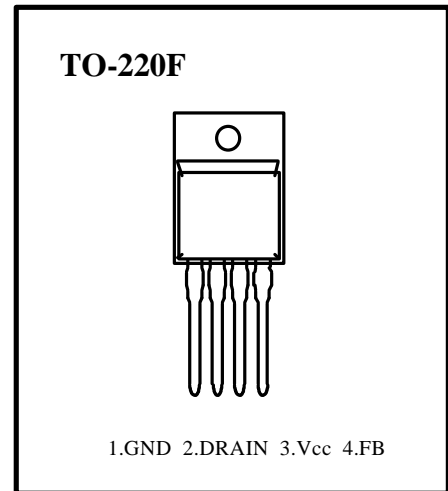


FEATURES

- Precision fixed operating frequency (70KHz)
- Pulse by pulse over current limiting
- Over load protection
- Internal thermal shutdown function
- Under voltage lockout
- Internal high voltage sense FET
- Low start up current ($\leq 0.4\text{mA}$)



PRODUCT SUMMARY

Part Number	BV _{dss}	R _{ds(on)}	I _D
KA1M0380	800V	5 Ω	3A

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$, 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)	T _r	95	ns
Fall Time (2)	T _f	60	ns
Drain-Source Off State Leakage Current (V _{ds} = 0V, V _{gs} = 0V)	I _{DSS}	250	μA
Continuous Drain Current (T _c = 25 $^\circ\text{C}$)	I _D	3.0	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)	20	W
	Derating	0.28	W/ $^\circ\text{C}$
Operating Temperature	T _{OPR}	- 25 ~ + 85	$^\circ\text{C}$
Storage Temperature	T _{STG}	- 55 ~ + 150	$^\circ\text{C}$

Notes: (1) T_J = 25 $^\circ\text{C}$ to 150 $^\circ\text{C}$

(2) V_{DD} = 400V, I_D = Max. Rating, V_{GS} = 10V

ELECTRICAL CHARACTERISTICS (Control part)

(Ta = 25°C unless otherwise specified)

Symbol	Characteristics	Min	Typ	Max	Unit	Test Conditions
REFERENCE SECTION						
Vref	Output Voltage	4.80	5.00	5.20	V	Ta = 25 °C
Vref/ ΔT	Temperature Stability	-	0.3	0.6	mV/ °C	-25°C ≤ Ta ≤ +85°C Note1
OSCILLATOR SECTION						
FOSC	Initial Accuracy	62	67	72	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		mA	Ta = 25 °C , Vfb = 0
Idelay	Shutdown Delay Current		5		uA	5 V < Vfb < VSD
OVER CURRENT PROTECTION SECTION						
IL(MAX)	Over Current Protection	1.5	1.8	2.2	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	Ta = 25 °C ,
V _Z	V _{CC} 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}	ThermalShutdownTemperature(T _j)		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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FACT Quiet Series™	Quiet Series™	
FAST®	SuperSOT™-3	
FASTr™	SuperSOT™-6	
GTO™	SuperSOT™-8	
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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
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