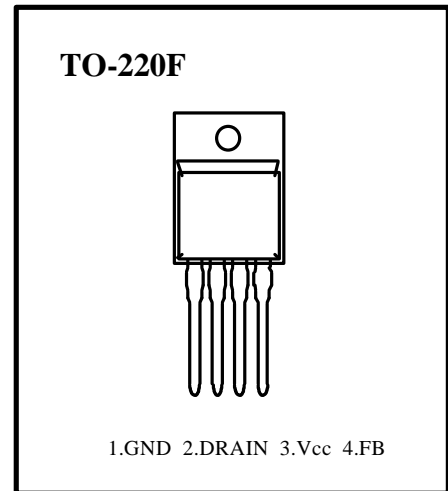


FEATURES

- 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 (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)	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°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/ °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

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 , V _{fb} = 0
I _{delay}	Shutdown Delay Current		5		uA	5 V < V _{fb} < V _{SD}
OVER CURRENT PROTECTION SECTION						
I _{L(MAX)}	Over Current Protection	1.5	1.8	2.2	A	Max. Inductor Current
UVLO SECTION						
V _{th(H)}	Start Threshold Voltage	14	15	16	V	
V _{th(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™	QST™	
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
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