

PWM CONTROLLER WITH BUILT-IN 2A@5Ω MOSFET

DESCRIPTION

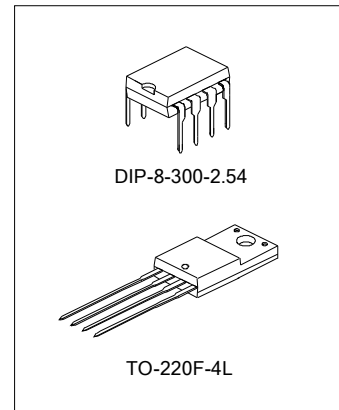
SA482X67K65 is a current mode PWM controller for power switch. It included PWM controller with integrates the fixed frequency oscillator, the under voltage lock-out, the leading edge blanking, the thermal shutdown protection, and the over current protection.

FEATURES

- * Restart current (Typ. 100μA)
- * Precision Fixed Operating Frequency
- * Overcurrent protection
- * Overvoltage protection
- * Undervoltage lockout
- * Built-in temperature protection
- * Built-in high voltage MOSFET
- * Auto restart mode

APPLICATIONS

- * Switch power.



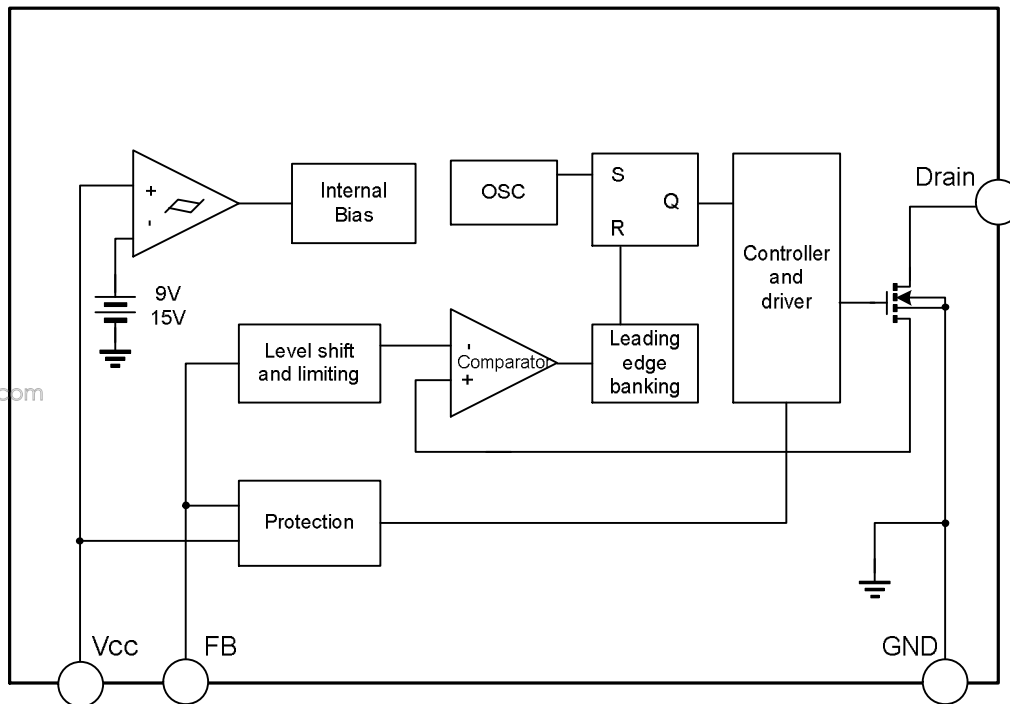
ORDERING INFORMATION

Device	Package
SA482P67K65	DIP-8-300-2.54
SA482T67K65	TO-220F-4L

TYPICAL OUPUT POWER CAPABILITY

DEVICE	190~265VAC		85~265VAC	
	Close	Open	Close	Open
SA482P67K65	14W	20W	12W	14W
SA482T67K65	20W		14W	

BLOCK DIAGRAM



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ABSOLUTE MAXIMUM RATING

Characteristics	Symbol	Rating	Unit	
Drain-Gate Voltage (RGS=1MΩ)	V _{DGR}	650	V	
Gate-Power (GND) Voltage	V _{GS}	±30	V	
Drain Current Pulsed ⁽¹⁾	I _{DM}	8.0	ADC	
Continuous Drain Current (T _{amb} =25°C)	I _D	2.0	ADC	
Continuous Drain Current (T _{amb} =100°C)	I _D	1.3	ADC	
Signal Pulsed Avalanche Energy ⁽²⁾	E _{AS}	68	mJ	
Power Supply Voltage	V _{CC}	30	V	
Analog Input Voltage	V _{FB}	-0.3~ V _{SD}	V	
Total Power Consumption	SA482P67K65	P _D	2.2	W
	SA482T67K65		42	
	SA482P67K65	Darting	0.017	W/°C
	SA482T67K65		0.33	
Operating Junction Temperature	T _J	+160	°C	
Operating Temperature	T _{amb}	-25~ +85	°C	
Storage Temperature	T _{stg}	-55~+150	°C	

Note: 1. Pulse width is limited by maximum junction temperature.

2. L=51mH, starting T_j=25°C

ELECTRICAL CHARACTERISTICS (sense MOSFET part, unless otherwise specified, $T_{amb}=25^{\circ}\text{C}$)

Characteristics	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BVDSS	$V_{GS}=0V, I_D=50\mu A$	650	--	--	V
Zero Gate Voltage Drain Current	IDSS	$V_{DS}=\text{Max. } V_{GS}=0V$	--	--	50	μA
		$V_{DS}=0.8\text{Max. } V_{GS}=0V$ $T_{amb}=125^{\circ}\text{C}$	--	--	200	μA
Static Drain-Source On Resistance	RDS(ON)	$V_{GS}=10V, I_D=0.5A$	--	5.0	6.0	Ω
Forward Transconductance	Gfs	$V_{DS}=50V, I_D=0.5A$	1.5	--	--	S
Input Capacitance	Ciss	$V_{GS}=0V, V_{DS}=25V, f=1\text{MHz}$	--	550	--	pF
Output Capacitance	Coss		--	38	--	
Reverse Transfer Capacitance	Crss		--	17	--	
Turn On Delay Time	Td(on)	$V_{DD}=0.5BVDSS, I_D=1A$	--	20	--	nS
Rise Time	Tr		--	15	--	
Turn Off Delay Time	Td(off)		--	55	--	
Fall Time	Tf		--	25	--	
Total Gate Charge (Gate-Source+Gate-Drain)	Qg	$V_{GS}=10V, I_D=1A,$	--	--	35	nC
Gate-Source Charge	Qgs	$V_{DD}=0.5BVDSS$	--	3	--	
Gate-Drain Charge	Qgd		--	12	--	

ELECTRICAL CHARACTERISTICS (control part, unless otherwise specified, $T_{amb}=25^{\circ}\text{C}$)

Characteristics	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Undervoltage Section						
Start Threshold Voltage	Vstart	$V_{FB}=0$	14	15	16	V
Stop Threshold Voltage	Vstop	$V_{FB}=0$	8.4	9	9.6	V
Oscillator Section						
Oscillate Frequency	FOSC		61	67	73	KHz
Frequency Change With Temperature	--	$-25^{\circ}\text{C}\leq T_{amb}\leq +85^{\circ}\text{C}$	--	± 5	± 10	%
Maximum Duty	Dmax		72	77	82	%
Feedback Section						
Feedback Source Current	IFB	$0V\leq V_{FB}\leq 3V$	0.8	1.0	1.2	mA
Shutdown Feedback Voltage	VSD	$V_{FB}\geq 6.5V$	6.9	7.5	8.1	V
Shutdown Delay Current	Idelay	$5V\leq V_{FB}\leq V_{SD}$	4	5	6	μA
Reference Voltage						
Output Voltage	Vref		4.80	5.00	5.20	V
Temperature Stability	$\Delta V_{ref}/\Delta T$	$-25^{\circ}\text{C}\leq T_{amb}\leq +85^{\circ}\text{C}$	--	0.3	0.6	mV/ $^{\circ}\text{C}$
Current Limit						
Peak Current Limit	Iover	Max. inductor current	1.89	2.15	2.41	A

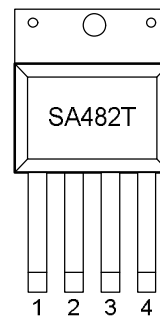
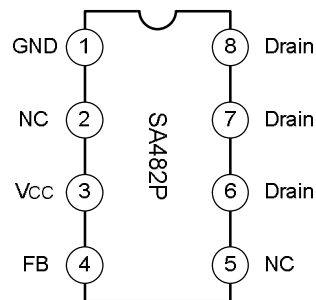
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Characteristics	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Protection Section						
Overvoltage Protection	V_{ovp}	$V_{CC} \geq 24V$	25	27	29	V
Overheat Protection	T_{sd}		140	160	--	°C
Total Standby Current						
Start Current	I_{start}	$V_{CC} = 14V$	--	100	170	μA
Supply Current (Control Part)	I_{op}		--	7	12	mA

PIN CONFIGURATION

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1: GND 2: Drain 3: VCC 4: FB

PIN DESCRIPTION

Pin No.		Pin name	Pin descriptions
SA482P67K65	SA482T67K65		
6, 7, 8	2	Drain	Drain pins
1	1	GND	Ground.
3	3	VCC	Power supply pin.
4	4	FB	Feedback input pin.
2, 5	--	NC	Not connect.

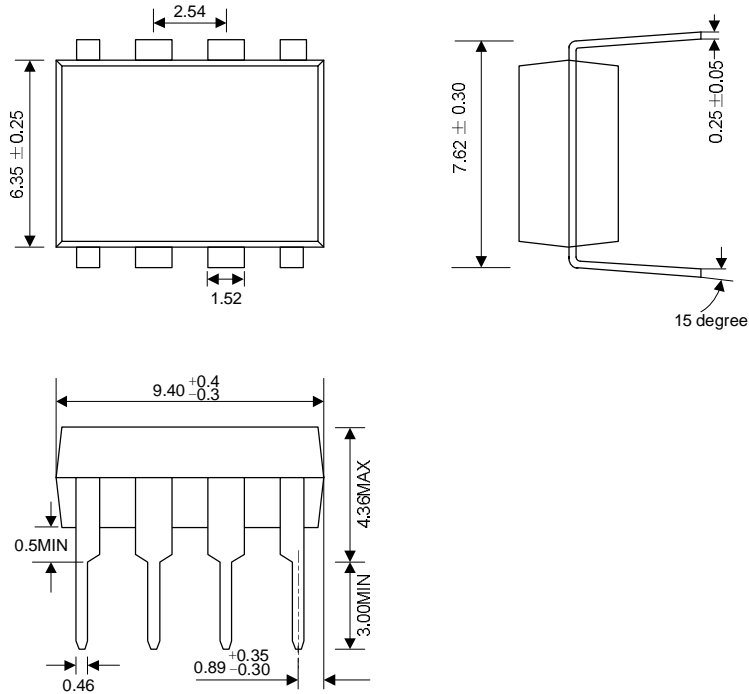
FUNCTION DESCRIPTIONS

SA482X67K65 is used for off-line SMPS with high voltage MOSFET and current mode PWM controller. The PWM controller integrates the fixed frequency oscillator, the undervoltage lockout, the overvoltage protection, the overcurrent protection, the temperature protection, and the leading edge blanking. SA482X67K65 need few external components, increasing the efficiency and system reliability, suited for a flyback converter or a forward converter.

PACKAGE OUTLINE

DIP-8-300-2.54

UNIT: mm



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TO-220F-4L

UNIT: mm

