

Dropper Type System Regulator ICs SI-3322S

Features

- High accuracy output of $5V \pm 30mV$
- Memory backup power supply $4V \pm 0.2V$
- Power on reset function
- Supply voltage monitor function
- Watch dog timer
- CR not required for setting external time constant

Absolute Maximum Ratings

Parameter	Symbol	Applicable terminals	Ratings	Unit	Conditions
Terminal voltage	V_{IN} (1)	BAI, V_{CC} , V_{NMIC}	-0.3 to 32	V	
		V_S , NMIC, RSTTC, OUTE			
	V_{IN} (2)	V_{SC} , NMI, RESET, OUTE	-0.3 to 7	V	
		W/D, STBY			
Storage temperature	Tstg	—	-40 to +125	°C	
Operating temperature	Top	—	-40 to +105	°C	
Power dissipation	P_D	—	1.4	W	$T_a = 25^\circ C$

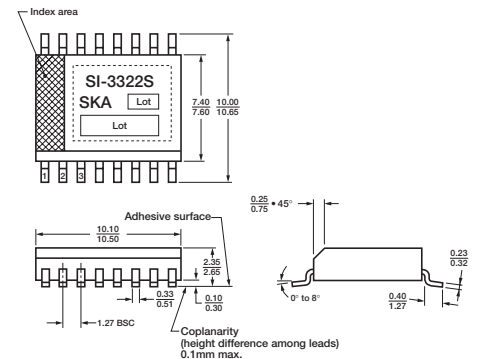
Electrical Characteristics

($T_a = 25^\circ C$ unless otherwise specified)

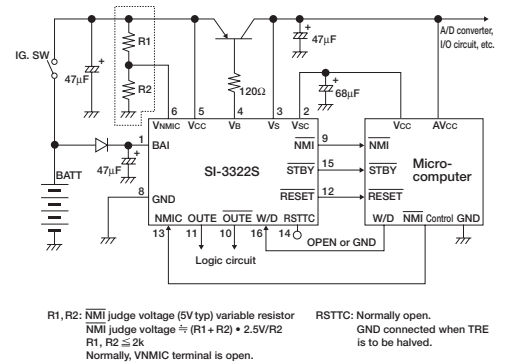
Parameter		Symbol	Ratings			Unit	Conditions
			min	typ	max		
V _{SC} output voltage		V _{SC}	3.8	4	4.2	V	BAI = 4.2 to 16V, I _{SC} = -0.2mA
V _S output voltage		V _S	4.97	5	5.03	V	V _{CC} = 5.2 to 16V, I _O = -350mA
V _S -V _{SC} voltage difference		ΔV _S			0.3	V	V _{CC} = 5.2V, I _{SC} = -50mA
BAI input current		I _{BAI}			0.6	mA	BAI = 4.9 to 16V, I _{SC} = -0.2mA
V _{CC} input current		I _{CC}			5	mA	V _{CC} = 3 to 16V
V _B input current		I _B			25	mA	V _{CC} = 3 to 16V
V _S input current		I _S			20	mA	V _{CC} = BAI = 3 to 16V, I _{SC} = 0mA
NMIC input current		I _{NMIC}	-0.04	-0.1	-0.4	mA	V _{CC} = BAI = 14V
W/D input current		I _{W/D}	-0.04	-0.1	-0.4	mA	V _{CC} = BAI = 14V
RSTTC input current		I _{RTC}	-0.04	-0.1	-0.4	mA	V _{CC} = BAI = 14V
NMI judge voltage	Lo	V _{NIL}	4.9	5	5.1	V	NMIC = 0V
	Hysteresis	ΔV _N	0.12		0.3	V	
NMI output voltage	Hi	V _{NOH}	V _S -0.5			V	I _{source} = -1mA
	Lo	V _{NOL}			0.6	V	I _{sink} = 0.5mA
STBY output voltage	Hi	V _{SOH}	V _S -0.5			V	I _{source} = -1mA
	Lo	V _{SOL}			0.6	V	I _{sink} = 0.5mA
RESET output voltage	Hi	V _{ROH}	V _S -0.5			V	I _{source} = -1mA
	Lo	V _{ROL}			0.6	V	I _{sink} = 0.5mA
OUTE output voltage	Hi	V _{UOH}	V _S -0.5			V	I _{source} = -1mA
	Lo	V _{UOL}			0.6	V	I _{sink} = 0.5mA
OUTE output voltage	Hi	V _{TOH}	V _S -0.5			V	I _{source} = -1mA
	Lo	V _{TOL}			0.6	V	I _{sink} = 0.5mA
Standby release time		T _{ST}	5	10	20	ms	
Reset release time		T _{RE}	60	75	90	ms	
Reset cycle		T _{RC}	40	50	60	ms	
Reset period		T _{RP}	20	25	30	ms	
W/D signal stop detect period		T _{WS}	10	12.5	15	ms	
Reset signal output time		T _{NR}	80			μs	
Standby signal output time		T _{RS}	10			μs	
W/D fail judge frequency		F _{FH}	2		5	kHz	
Out enable release time		T _{WE}	40	50	10	ms	

Notes: The direction of current flowing into the IC is positive (+).

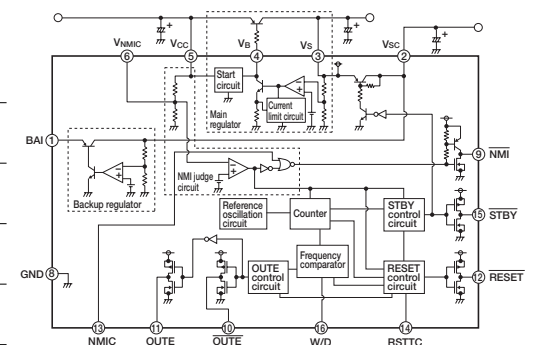
External Dimensions (unit: mm)



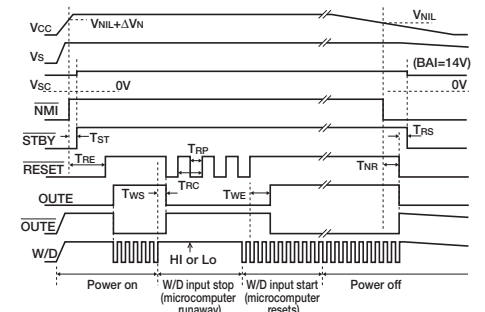
Standard Connection Diagram



Circuit Block Diagram

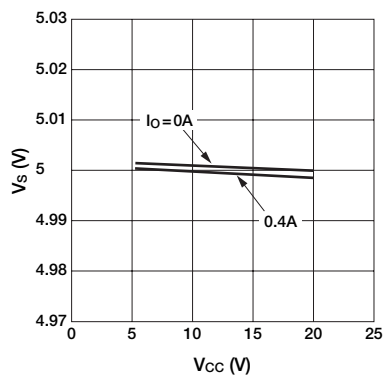


Timing Chart

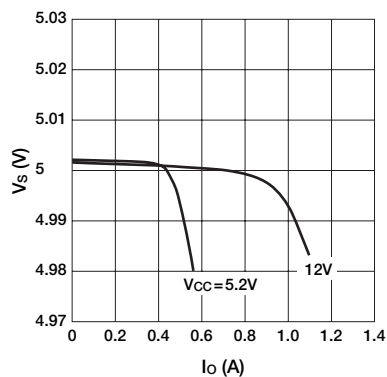


Electrical Characteristics

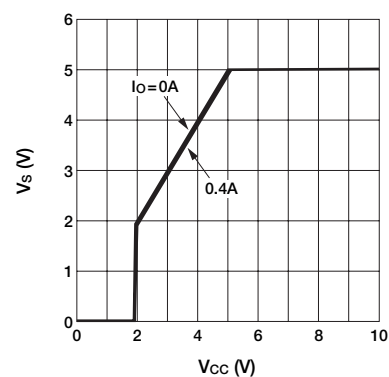
■ V_S Line Regulation



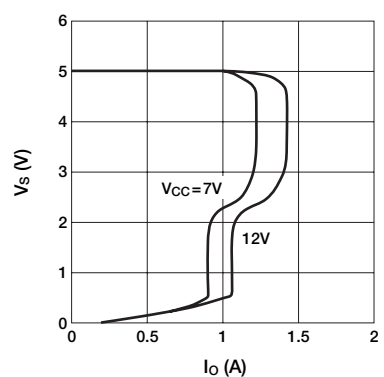
■ V_S Load Regulation



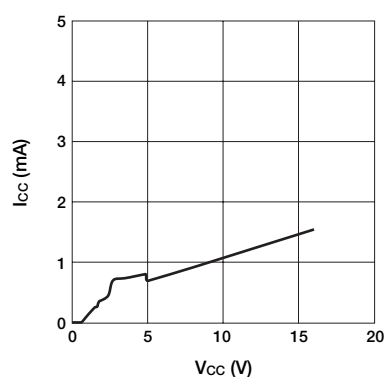
■ V_S Rise Characteristics



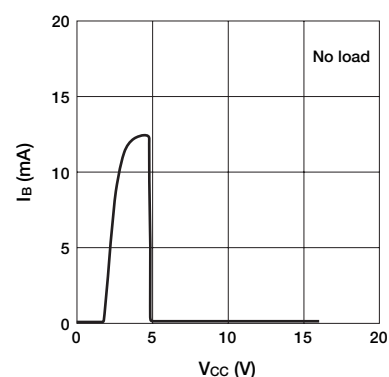
■ V_S Overcurrent Protection Characteristics



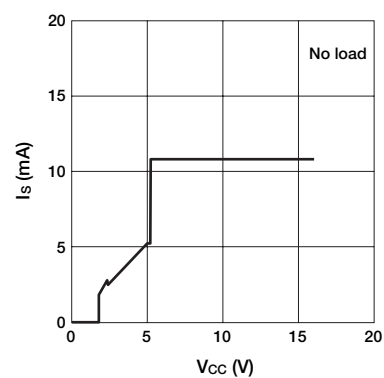
■ V_{CC} Input Current



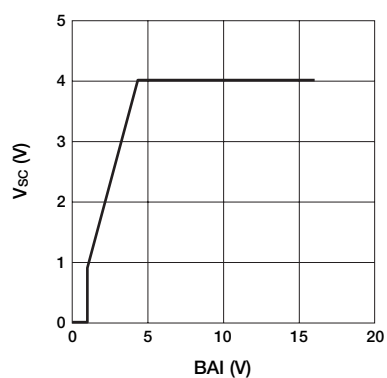
■ V_S Input Current



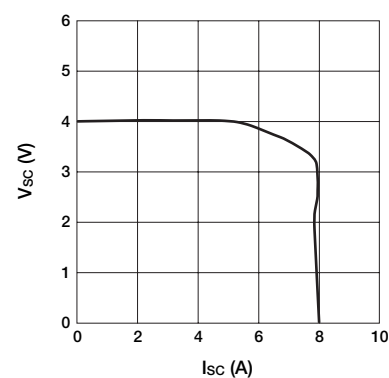
■ V_S Input Current



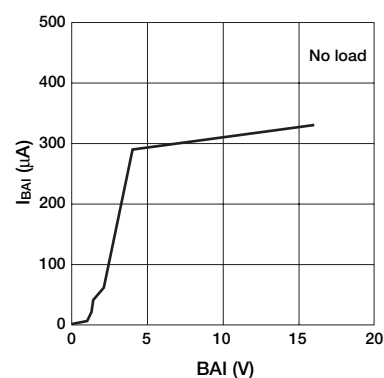
■ V_{SC} Rise Characteristics



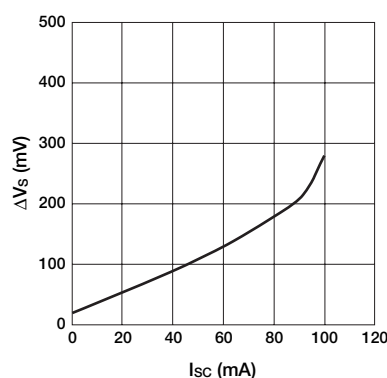
■ V_{SC} Overcurrent Protection Characteristics



■ B_{AI} Input Current



■ V_S - V_{SC} Voltage Difference



■ $\overline{NMI}$ Judge Voltage Characteristics

