

SI-7510 New Pentagon Connection

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit	Remarks
Main Supply Voltage	V _{CC1}	44	V	
Logic Supply Voltage	V _{CC2}	7	V	
Logic Input Voltage	V _{IN}	-0.3 to V _{CC2}	V	
REF Input Voltage	V _{REF}	-0.3 to V _{CC2}	V	
SENCE Input Voltage	V _{SENCE}	2	V	Except when tw<1μs
Charge Pump Output Voltage	V _{MC3}	48	V	
Power Dissipation	P _D	1.6	W	
Operating Ambient Temperature	T _a	-10 to 80	°C	
Storage Temperature	T _{stg}	-20 to 150	°C	
Junction Temperature	T _j	150	°C	

Recommended Operating Ranges

Parameter	Symbol	Operating Ranges	Unit
Main Supply Voltage	V _{CC1}	10 to 42*	V
Logic Supply Voltage	V _{CC2}	3 to 5.5	V
REF Input Voltage	V _{REF}	0.1 to 1	V

*: Insert a 5V Zener diode between V_{CC1} and V_{MC3} when using with V_{CC1} of 35 V or more.

Electrical Characteristics

(T_a=25°C, V_{CC1}=24V, V_{CC2}=5V, unless otherwise specified)

Parameter	Symbol	Ratings			Unit	Conditions
		min.	typ.	max.		
Main Supply Current	I _{CC1}			25	mA	
Logic Supply Current	I _{CC2}			10	mA	
Logic Input Voltage	V _{IL}			1.25	V	
	V _{IH}	3.75			V	
Logic Input Current	I _{IL}	-20		20	μA	V _{IL} =0V
	I _{IH}	-20		20	μA	V _{IH} =5.5V
ENA Input Current	I _{ENA}	-100		20	μA	V _{ENA} =0V
REF Input Current	I _{REF}	-20		20	μA	V _{REF} =0 to 5.5V
SENCE Voltage	V _{SENCE}		1		V	V _{REF} =1V
SENCE Current	I _{SENCE}	-20		20	μA	V _{SENCE} =0V, 2V
	V _{MOL}			1	V	I _{MOL} =1mA
MO Output Voltage	V _{MOH}	4			V	I _{MOH} =-1mA
	V _{RCL}		0.5		V	
RC Pin Threshold Voltage	V _{RCH}		1.5		V	
	I _{RC}		300		μA	V _{RC} =0V
Charge Pump Output Voltage	V _{MC3}		V _{CC1} +9		V	
High Side Output Voltage (between gate sources)	V _{HGSL}			1	V	Without Zener diode
	V _{HGSH}		8.5		V	
Low Side Output Voltage	V _{LGL}			1	V	
	V _{LGH}		7.5		V	
Maximum CL Frequency	f _{ck}	100			KHz	
Maximum Input CL Width (on)	T _{CON}	1			μs	
Power-on Reset time	PTW		1.5		μs	
Output Delay Time	T _{IO}		2		μs	
CW/CCW, F/H	T _{ICS}	500			μs	Against CL ↑
Input Data Setup Time	T _{ICH}	500			μs	

