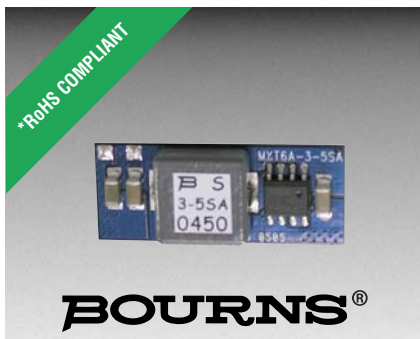




Features

- Industry standard SMT package
- Output voltage programmable from 0.75 V_{dc} to 3.6 V_{dc} via external resistor
- 6 A output current
- Up to 96 % efficiency
- Small size, low profile
- Cost-efficient
- Low output ripple and noise
- High reliability
- Remote on/off
- Output overcurrent protection (non-latching)
- Sequencing function

MXT6A-3-5SA SMT Non-Isolated Power Module

Description

Bourns® MXT6A-3-5SA is a non-isolated DC-DC converter offering designers a cost and space-efficient solution with standard features such as sequencing, remote on/off, precisely regulated programmable output voltage and overcurrent protection.

Specifications

Parameter	Min.	Nom.	Max.	Units	Notes
INPUT					
Voltage	2.4		5.5	V _{dc}	V _{in} (min) = V _O + 0.5 V, V _O > 1.9 V
Current			6.0	A _{dc}	
Remote ON/OFF:	Standard	-P Option			
Low or Open =	On	Off			
High =	Off	On	2.4	0.4 V _{dc} V _{in}	10 µA max. 1 mA max.
OUTPUT					
Voltage Adjustment Range	0.75		3.63	V _{dc}	
Current	0.0		6.0	A _{dc}	
Voltage Setpoint Accuracy	-2.0		2.0	% V _{O,set}	
Line Regulation		0.3		% V _{O,set}	
Load Regulation		0.4		% V _{O,set}	
Temperature Regulation		0.4		% V _{O,set}	
Ripple (pk-pk) (20 MHz Bandwidth)		40	50	mVpk-pk	1 µF ceramic//10 µF tantalum capacitors
Ripple (rms)		10	15	mVrms	1 µF ceramic//10 µF tantalum capacitors
Dynamic Load Response:					
50 % to 100 % Load or 100 % to 50 % Load; (ΔI/Δt = 2.5 A/µs; 25 °C)		130 25		mV µs	1 µF ceramic//10 µF tantalum capacitors
50 % to 100 % Load or 100 % to 50 % Load; (ΔI/Δt = 2.5 A/µs; 25 °C)		50 50		mV µs	2 x 150 µF polymer capacitors
GENERAL					
MTBF		15,000,000		hours	
Operating Temperature	-40		+85	°C	
Storage Temperature	-55		+125	°C	
Switching Frequency		300		kHz	
Efficiency		81.0		%	V _{O,set} = 0.75 V _{dc}
(V _{in} = 5.0 V _{dc} , T _A = 25 °C, Full Load)		87.0		%	V _{O,set} = 1.2 V _{dc}
		89.0		%	V _{O,set} = 1.5 V _{dc}
		90.0		%	V _{O,set} = 1.8 V _{dc}
		93.0		%	V _{O,set} = 2.5 V _{dc}
		95.0		%	V _{O,set} = 3.3 V _{dc}

Applications

- Intermediate Bus architecture
- Distributed power applications
- Workstations and servers
- Telecom equipment
- Enterprise networks including LANs/WANs
- Latest generation ICs (DSP, FPGA, ASIC) and microprocessor powered applications

*RoHS Directive 2002/95/EC Jan 27 2003 including Annex.

Specifications are subject to change without notice.

Customers should verify device performance in their specific applications.

Output Voltage Programming

Via external trim resistor between Trim and GND:

$$R_{\text{trim}} = \left[\frac{21.07}{V_o - 0.7525} - 5.11 \right] \text{ k}\Omega$$

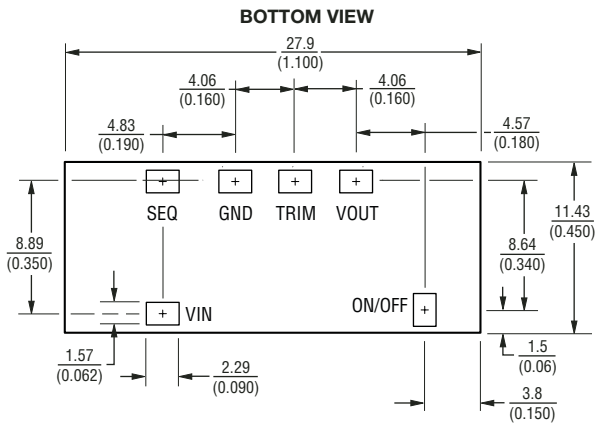
Via application of external voltage between Trim and GND:

$$V_{\text{trim}} = (0.7 - 0.1698 \times \{V_o - 0.7525\})$$

MXT6A-3-5SA SMT Non-Isolated Power Module

BOURNS®

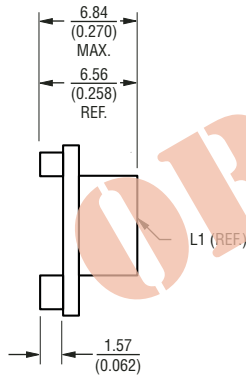
Product Dimensions



SIDE VIEW

DIMENSIONS:
MM
(INCHES)

TOLERANCES:
DECIMAL .X ± 0.5
(0.02)
DECIMAL .XX ± 0.25
(0.010)

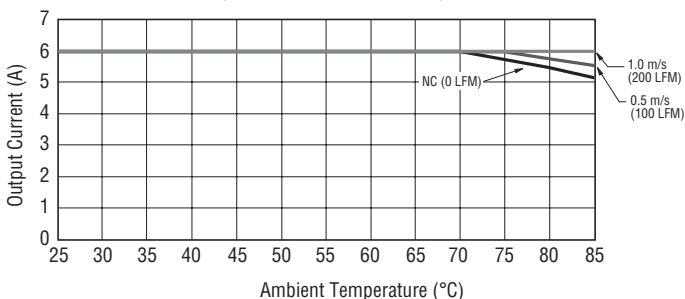


Pinout Detail

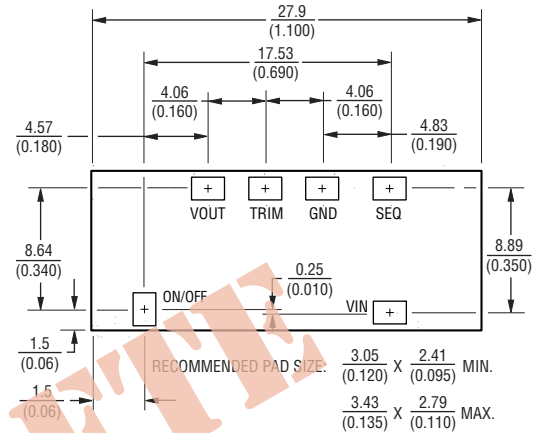
PIN	FUNCTION
1	ON/OFF
2	VIN
3	SEQ
4	GND
5	TRIM
6	VOUT

Derating Output Current vs. Local Ambient Temp & Airflow

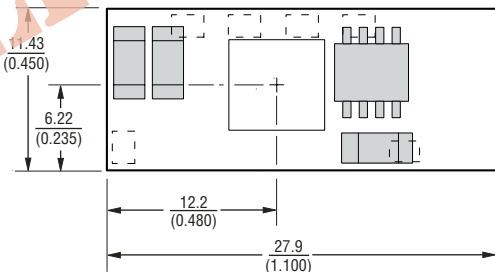
($V_{in} = 5.0 \text{ Vdc}$, $V_o = 3.3 \text{ Vdc}$)



Recommended Pad Layout



Pick and Place Location



How to Order

MXT6A-3-5SA (-P)

Configuration _____
 • M = Surface Mount Device
 Internal Identifier _____
 Identifies Sequencing Pin Function _____
 Output Current (Amps) _____
 Input Voltage (V) _____
 Outputs _____
 • S = Single
 Output Voltage (V)* _____
 • A = Adjustable
 Optional Positive On/Off Logic _____
 *Fixed output voltage parts and optional features available; contact factory.



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Specifications are subject to change without notice.
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