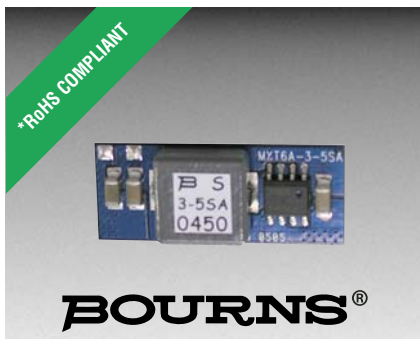




Features

- 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

Output Voltage Programming

Via external trim resistor between Trim and GND:

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

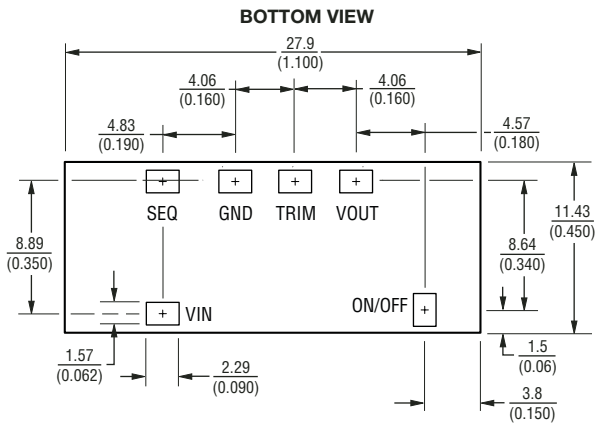
Via application of external voltage between Trim and GND:

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

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

BOURNS®

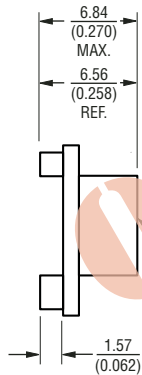
Product Dimensions



SIDE VIEW

DIMENSIONS:
MM
(INCHES)

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

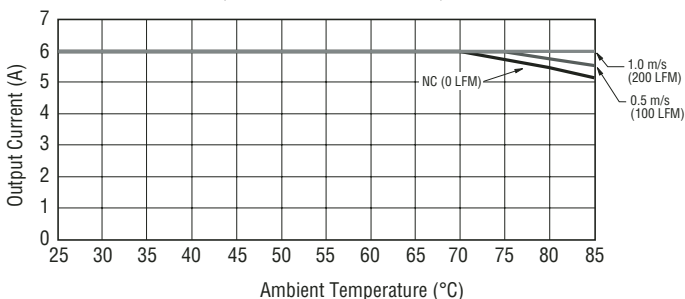


Pinout Detail

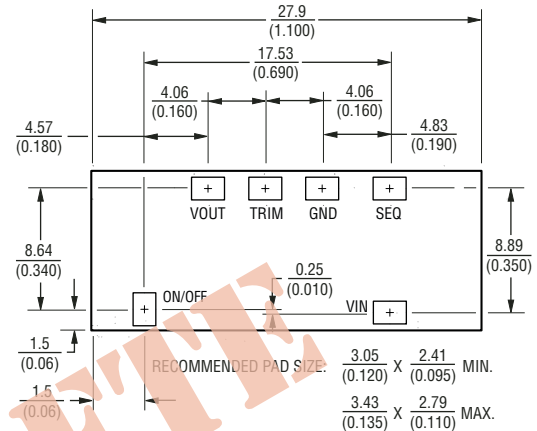
PIN	FUNCTION
1	ON/OFF
2	VIN
3	SEQ
4	GND
5	TRIM
6	VOUT

Derating Output Current vs. Local Ambient Temp & Airflow

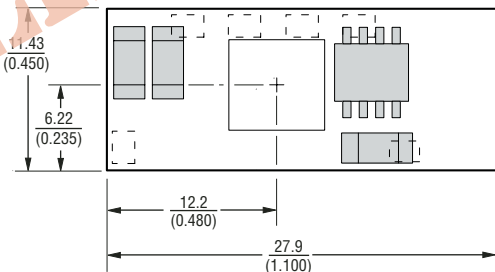
($V_{in} = 5.0 \text{ Vdc}$, $V_o = 3.3 \text{ Vdc}$)



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.
 Customers should verify device performance in their specific applications.

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