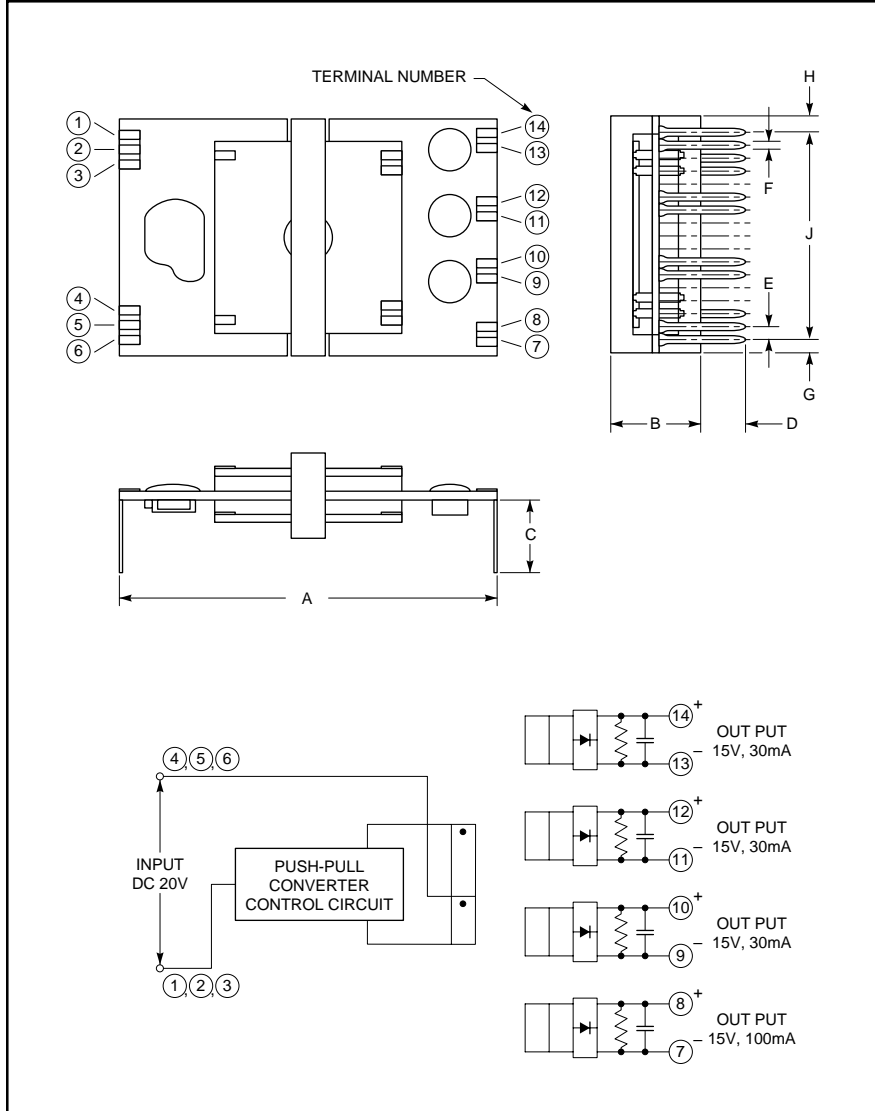


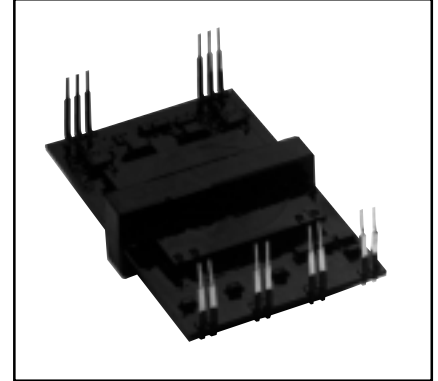
### Isolated DC-to-DC Converter



Outline Drawing and Circuit Diagram

Dimensions	Inches	Millimeters
A	2.03	51.5
B	0.71	18.0
C	.39±.06	12.5±1.5
D	.18±.06	4.5±1.5
E	0.07	1.8

Dimensions	Inches	Millimeters
F	0.02	0.55
G	0.08	2.1
H	0.08	2.1
J	1.13	28.8



#### Description:

M57140-01 is an isolated DC-to-DC converter designed to drive IPMs (Intelligent Power Modules). With an input of DC 20V, the module supplies four 15V outputs. Isolation is provided from primary to secondary and also between the secondaries. Interwinding isolation is designed for driving the IPM.

#### Features:

- Output Specification:  
+15V x 4, Total 3W max.
- Primary-to-secondary Isolation:  
2500 V<sub>RMS</sub>, One Minute
- Secondary-to-secondary Isolation Voltage:  
1500 V<sub>RMS</sub>, One Minute
- Compact, Low Profile Design

#### Applications:

- IPMs for General Purpose Inverter and AC Servo
- Power Source for MOSFET Driving Circuits

#### Ordering Information:

M57140-01

**M57140-01**  
**Isolated**  
**DC-to-DC Converter**

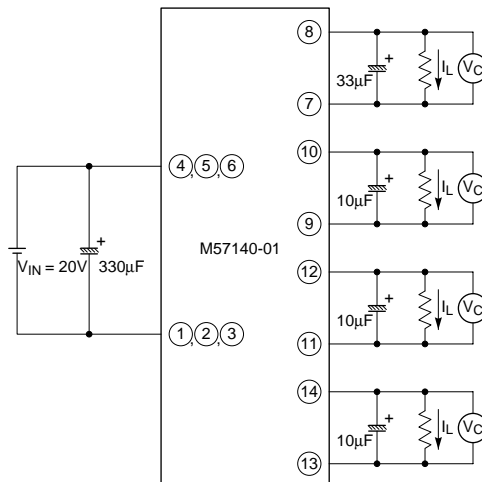
**Absolute Maximum Ratings,  $V_{IN} = 20V$ ,  $T_a = 25^\circ C$  unless otherwise specified**

Characteristics	Symbol	Test Conditions	M57140-01	Units
Input Voltage	$V_{IN}$	Terminals (4), (5), (6) - (1), (2), (3)	25	Volts
Load Current	$I_L$	Terminals (14)-(13), (12)-(11), (10)-(9)	30	mA
		Terminals (8)-(7)	100	mA
Operating Temperature	$T_{opr}$	There Should be	-10 ~ +75	$^\circ C$
Storage Temperature	$T_{stg}$	No Condensation	-20 ~ +85	$^\circ C$
Internal Power Dissipation	$P_d$	-	1.5	Watts
Primary-to-Secondary Isolation		1 Minute	2500	$V_{rms}$
Secondary-to-Secondary Isolation		1 Minute	1500	$V_{rms}$

**Electrical Characteristics,  $V_{IN} = 20V$ ,  $T_a = 25^\circ C$  unless otherwise specified**

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Input Source Voltage	$V_{IN}$	Direct Current	18	20	22	Volts
Output Voltage	$V_O$	Between Pins (10)-(9), (12)-(11), (14)-(13) $I_L = 30mA$	13.5	15.0	16.5	Volts
		Between Pins (8)-(7), $I_L = 100mA$	13.5	15.0	16.5	Volts
Peak Load Current	$I_{LP}$	Between Pins (10)-(9), (12)-(11), (14)-(13)	-	33	-	mA
		Between Pins (8)-(7)	-	110	-	mA
Load Regulation	Reg-out	Between Pins (10)-(9), (12)-(11), (14)-(13) $I_L = 0 \sim 30mA$	-	5	10	%
		Between Pins (8)-(7), $I_L = 0 \sim 100mA$	-	7	12	%
Efficiency	h	Between Pins (10)-(9), (12)-(11), (14)-(13) $I_L = 30mA$	-	70	-	%
		Between Pins (8)-(7), $I_L = 100mA$	-	70	-	%

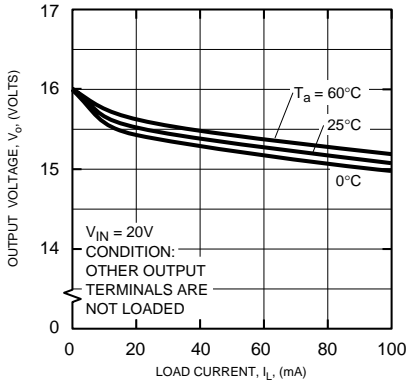
**Application Circuit**



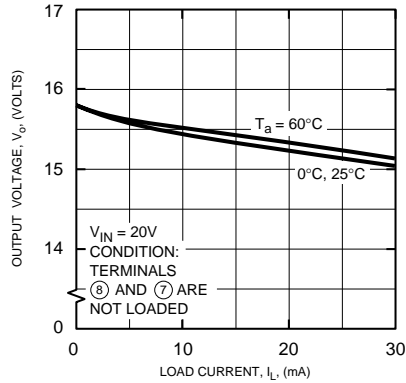


**M57140-01**  
**Isolated**  
**DC-to-DC Converter**

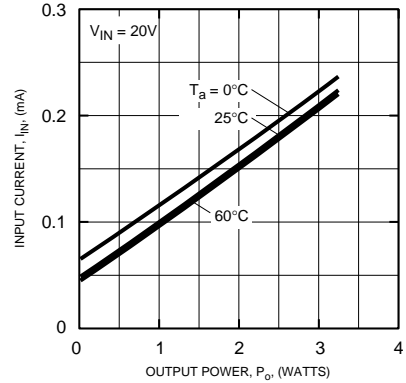
**OUTPUT VOLTAGE - LOAD CURRENT CHARACTERISTICS BETWEEN TERMINALS (8) AND (7)**



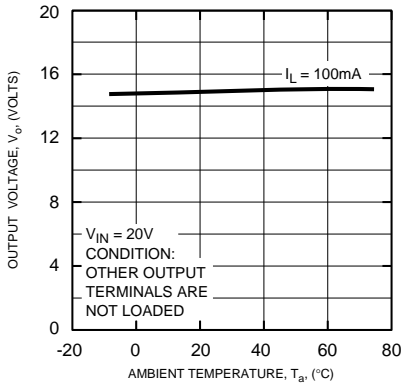
**OUTPUT VOLTAGE - LOAD CURRENT CHARACTERISTICS BETWEEN TERMINALS (10)-(9), (12)-(11), (14)-(13)**



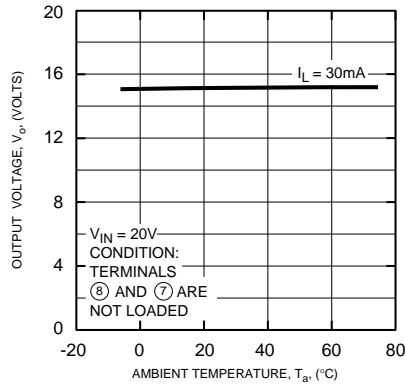
**INPUT CURRENT - OUTPUT POWER**



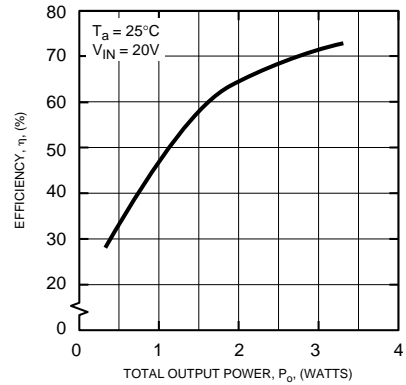
**OUTPUT VOLTAGE VS AMBIENT TEMPERATURE BETWEEN TERMINALS (8) AND (7)**



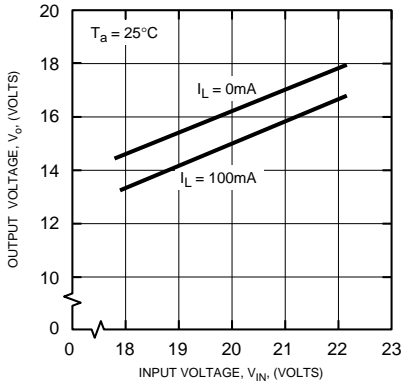
**OUTPUT VOLTAGE VS AMBIENT TEMPERATURE BETWEEN TERMINALS (10)-(9), (12)-(11), (14)-(13)**



**EFFICIENCY CHARACTERISTICS**



**OUTPUT VOLTAGE VS INPUT VOLTAGE BETWEEN TERMINALS (8) AND (7)**



**OUTPUT VOLTAGE VS INPUT VOLTAGE BETWEEN TERMINALS (10)-(9), (12)-(11), (14)-(13)**

