

**FEATURES :**

- SMD Packages
- High Efficiency 93% @ 3.3V Full Load
- Customized Solutions Available
- Operating Temperature From -40°C To +85°C
- 3 Years Warranty
- Input Under-Voltage Lockout
- Input Range From 8.3VDC to 14.0VDC
- Output Current Up To 10A
- Output Voltage Programmable From 0.75VDC to 5.0VDC Via External Resistor

Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

Part Number	ON/OFF Logic	Input Range	Output Voltage	Output Current		Efficiency (%) 12Vin, 3.3Vdc @10A
				Min. Load	Max. Load	
03D-12-10	Negative	Vo(set) ≤ 3.63V Vin = 8.3-14Vdc	0.75 ~ 5.0Vdc	0A	10A	93%

**Input Specifications**

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	Vo(set) ≤ 3.63V	8.3	Vin(nom)=12V	14	Vdc
	Vo(set) > 3.63V	8.3	Vin(nom)=12V	13.2	Vdc
Input Current	Vin=8.3 to 14.0Vdc; Io(max.)			7	A
Input Filter (Note4)	C filter				
No Load Current (Vin=12V, Io=0, Module enabled)	Vo(set)=0.75Vdc		40		mA
	Vo(set)=5.0Vdc		100		mA
Under Voltage Lockout	Start-up Voltage		7.9		V
	Shutdown Voltage		7.8		V

Input reflected ripple current 5~20MHz, 1uH source impedance:20mA-p-p

YUAN DEAN SCIENTIFIC



DC-DC Converter

03D-10A SERIES

Non-Isolated

Single Output

1.29"\*0.53"\*0.3"



Applications

- Wireless Network
- Telecom/Datacom
- Distributed Power Architectures
- Industry Control System
- Semiconductor Equipment
- Microprocessor Power Applications



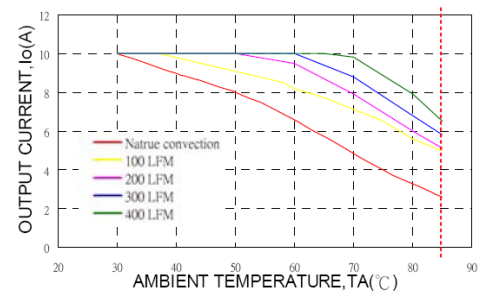
Output Specifications

Parameters	Conditions	Min	Typ	Max	Units
Output current				10	A
Voltage Tolerance	Full load and Vin(nom.)			±2	%
Minimum load				0	A
Line Regulation	Vin=Vin ( min ) to Vin ( max ) at Full Load		±0.3		%
Load Regulation	No Load to Full Load		±0.4		%
Ripple & Noise (Note2)	20MHz bandwidth			75	mVp-p
Dynamic load response (Note 2)	$\Delta I_o / \Delta t = 2.5A/uS, V_{in}(nom)$	Peak deviation	200		mV
	Load change step (25% to 100% or 100% to 25% of Io(max))	Setting time (Vo<10%peak deviation)	25		uS
Dynamic load Response (Note 3)	$\Delta I_o / \Delta t = 2.5A/uS, V_{in}(nom)$	Peak deviation	100		mV
	Load change step (25% to 100% or 100% to 25% of Io(max))	Setting time (Vo<10%peak deviation)	25		uS
Output current limit		200			%
Output short-circuit current	Hiccup, automatic recovery				
External load capacitance	ESR≥1mΩ		1000		uF
	ESR≥10mΩ		5000		uF
Output voltage overshoot-startup	Vin=Vin(min) to Vin(max);F.L		1		%
Voltage adjustability (see fig.1)		0.7525	5.0		V

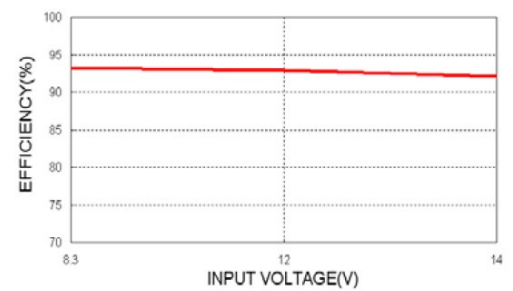
General Specifications

Parameters	Conditions	Min	Typ	Max	Units
Switching Frequency			300		KHz
Isolation Voltage			None		
Efficiency			See table		
Dimensions			33.0 X 13.5 X 7.7		mm
Weight			6.0		g
MTBF (Note 1)	MIL-HDBK-217F		1.048 x 10 <sup>6</sup>		hrs

03D-12-10,Vo=3.3V,Derating Curve



03D-12-10, Vo=3.3V Efficiency VS Input Voltage



03D-12-10, Vo=3.3V Efficiency VS Output Load

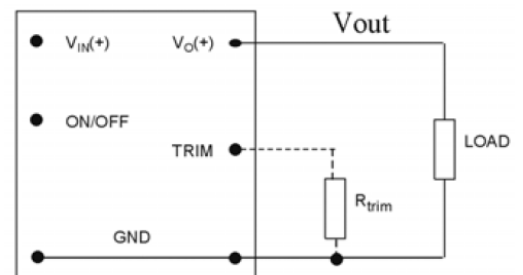
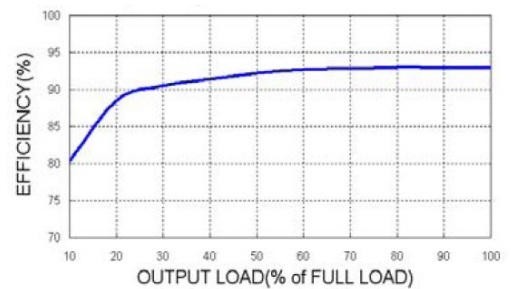


Fig. 1

**Environmental Specifications**

Parameters	Conditions	Min	Typ	Max	Units
Operating Temperature Range	with derating	-40		85	°C
Storage Temperature Range		-55		125	°C
Thermal Shock			MIL-STD-810F		
Over Temperature Protection			125		°C

**Feature Specifications**

Parameters	Conditions	Min	Typ	Max	Units
Remote ON/OFF					
Negative Logic (Standard)	ON = $0V < V_r < 0.3V @ I_{IN}$			10	uA
	OFF = $2.5V < V_r < V_{in}(Max) @ I_{IN}$			1	mA
Input Current of Remote Control Pin		0.01		1.0	mA
Remote off State Input Current Nominal Vin			2.0		mA
Remote Sense Range				0.5	V
Rise Time (Time for Vo to rise from 10% to 90% of Vo(set))				6	ms
Turn-on Delay Time	Case 1 (Note 5)		3		ms
	Case 2 (Note 6)		3		ms

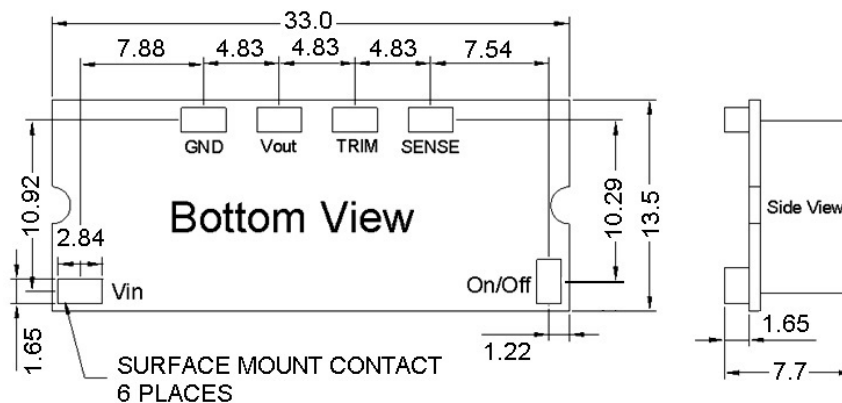
**Note :**

1. MIL-HDBK-217F Notice2 @Ta=25 °C, Full load(Ground, Benign, controlled environment).
2. External with Cout = 1μF ceramic//10μF tantalum capacitors.
3. External with Cout = 2×150μF polymer capacitors.
4. It's necessary to equip the external input capacitors at the input of the module. The capacitors should connect as close as possible to the input terminals that ensuring module stability. The external Cin is 4×47μF ceramic capacitors at least.
5. Case 1 :On/Off input is set to logic low (module on) and then input power is applied (delay from instant at which Vin=Vin(min.) until Vo=10% of Vo(set))
6. Case 2 :Input power is applied for at least one second and then the On/Off input is set to logic low (delay from instant at which Von/off=0.3V until Vo=10% of Vo(set))

**CAUTION :**

This power module is not internally fused. An input line fuse must always be used.

**Dimensions**



Unit : mm  
Tolerance : XX.X ± 0.5 • XX.XX ± 0.25