



- High efficiency - 94% @ 3.3V full load
- SMD & SIP packages
- Small size and low profile : 0.8" x 0.45" x 0.258" (SMD) ; 0.9" x 0.40" x 0.24" (SIP)
- Output voltage programmable from 0.75Vdc to 3.3Vdc via external resistor
- Delivers up to 6A of output current
- No minimum load required
- Low output ripple and noise
- Fixed switching frequency (300KHz)
- Lead free Directive compatible
- Remote ON/OFF
- Input under-voltage lockout
- Output overcurrent protection
- Over temperature protection
- Cost - efficient open frame design
- ISO 9001 certified manufacturing facilities



UL E193009
TUV R50079098
CB JPTUV-013646

TECHNICAL SPECIFICATION All specifications are typical at nominal input, full load and 25°C otherwise noted

OUTPUT SPECIFICATIONS	
Output current	6A max
Voltage accuracy	Full load and $V_{in,min}$ $\pm 2\%V_{o,set}$
Minimum load	0%
Line regulation	$V_{in}=V_{o,set}+0.5V$ to $V_{in,max}$ at Full Load $\pm 0.3\%V_{o,set,typ}$
Load regulation	0% to 100% FL $\pm 0.4\%V_{o,set,typ}$
Ripple and noise (Note1)	20MHz bandwidth 20mVrms,max 50mVp-p,max
Temperature coefficient	$\pm 0.4\%$, typ
Dynamic load response (Note1)	$\Delta I_o / \Delta t = 2.5A/uS$, $V_{in,nom}$ Peak deviation 130mV,typ Load change step (50% to 100% or 100% to 50% of $I_{o,max}$) Setting time ($V_o < 10\%$ peak deviation) 25uS,typ
Dynamic load response (Note2)	$\Delta I_o / \Delta t = 2.5A/uS$, $V_{in,nom}$ Peak deviation 50mV,typ Load change step (50% to 100% or 100% to 50% of $I_{o,max}$) Setting time ($V_o < 10\%$ peak deviation) 50uS,typ
Output current limit	220%,typ
Output short-circuit current	Hiccup, automatics recovery
External load capacitance	$ESR \geq 1m\Omega$ 1000uF,max $ESR \geq 10m\Omega$ 3000uF,max
Output voltage overshoot-startup	$V_{in}=2.4\sim 5.5V$, F.L. 1% $V_{o,set}$
Voltage adjustability (see fig.1)	(Note3) 0.7525V ~ 3.63V
INPUT SPECIFICATIONS	
Input voltage range	$V_{o,set} < V_{in} - 0.5V$ 2.4 - 5.5VDC
Maximum input current	$V_{in}=V_{in,min}$; $V_{o,set}=3.3V$; $I_o=I_{o,max}$ 6000mA
Input filter (Note 4)	C filter
Input no load current ($V_{in}=5V$, $I_o=0$, module enabled)	$V_{o,set} = 0.75Vdc$ 20mA,typ $V_{o,set} = 3.3Vdc$ 45mA,typ
Input undervoltage lockout	Start-up voltage 2.2V,typ Shutdown voltage 2.0V,typ
Input reflected ripple	5~20MHz, 1uH source impedance 35mA _{p-p}

GENERAL SPECIFICATIONS	
Efficiency	See table
Isolation voltage	None
Switching frequency	300KHz, typ
Approvals and standard	IEC60950-1, UL60950-1, EN60950-1
Dimensions	(SMD) 0.8 X 0.45 X 0.254 Inch (20.3 X 11.4 X 6.45 mm)
	(SIP) 0.9 X 0.40 X 0.236 Inch (22.9 X 10.2 X 6.0 mm)
Weight	2.8g(0.1oz)
MTBF (Note 5)	2.133×10^7 hrs
ENVIRONMENTAL SPECIFICATIONS	
Operating temperature range	-40°C ~ +85°C
Storage temperature range	-55°C ~ +125°C
Thermal shock	MIL-STD-810D
Over temperature protection	135 °C,typ
FEATURE SPECIFICATIONS	
Remote ON/OFF(Note 6) (Negative logic)(standard)	ON = 0V < $V_r < 0.3V$ OFF = 1.5V < $V_r < V_{in,max}$
(Positive logic)(option)	ON = $V_{in,max}$ OFF=0V < $V_r < 0.3V$
Input current of Remote control pin	10μA~1.0mA
Remote off state input current	Nominal V_{in} 0.6mA,typ
Rise time	Time for V_o to rise from 10% to 90%of $V_{o,set}$ 6msec,max.
Turn-on delay time	Case 1 (Note7) 1msec,typ
	Case 2 (Note8) 1msec,typ



Model Name	ON/OFF Logic	Package	Input Voltage	Output Voltage	Output Current	Efficiency (%) 5.0Vin, 3.3Vdc@6A
DOS06-05T	Negative	SMD	2.4 ~ 5.5Vdc	0.75 ~ 3.3Vdc	6A	94%
DOS06-05T-P	Positive					
DOH06-05T	Negative	SIP	2.4 ~ 5.5Vdc	0.75 ~ 3.3Vdc	6A	94%
DOH06-05T-P	Positive					

- Note
- External with $C_{out} = 1\mu F$ ceramic//10 μF tantalum capacitors.
 - External with $C_{out} = 2 \times 150\mu F$ polymer capacitors.
 - Output voltage programmable from 0.75V to 3.3V by connecting a single resistor (shown as R_{trim} in Table 1) between the TRIM and GND pins of the module. To calculate the value of the resistor R_{trim} for a particular output voltage V_o , use the following equation:

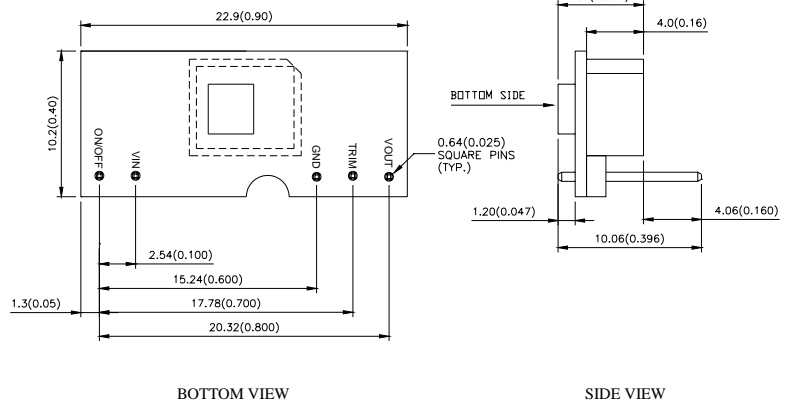
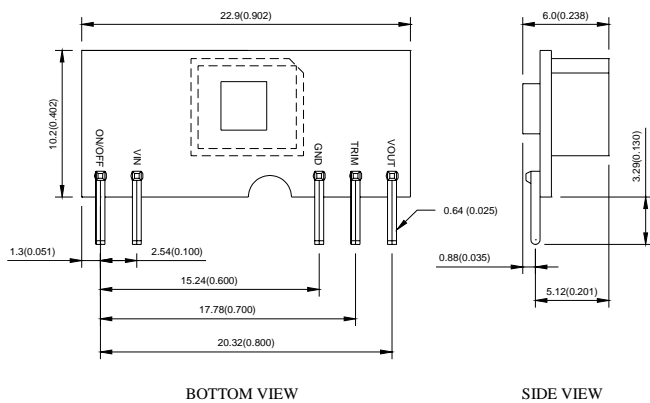
$$R_{trim} = \left[\frac{21070}{V_o - 0.7525} - 5110 \right] \Omega$$

- 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 C_{in} is 2x150 μF low-ESR polymer capacitors // 2x47 μF ceramic capacitors at least.
- BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 25°C. (Ground fixed and controlled environment)
- Device code with suffix "-P" – Positive logic(On/Off is open collector/drain logic input; Signal referenced to GND)
- Device code with no suffix – Negative logic (On/Off pin is open collector/drain logic input with external pull –up resistor; signal referenced to GND)
- Case 1 :On/Off input is set to logic low (module on) and then input power is applied (delay from instant at which $V_{in}=V_{in,min}$ until $V_o=10\%$ of $V_{o,set}$)
- Case 2 :Input power is applied for at least one second and then the On/Off input is set to logic low (delay form instant at which $V_{on/off}=0.3V$ until $V_o=10\%$ of $V_{o,set}$)

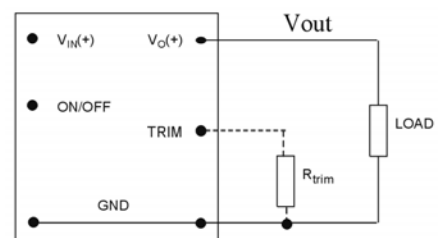
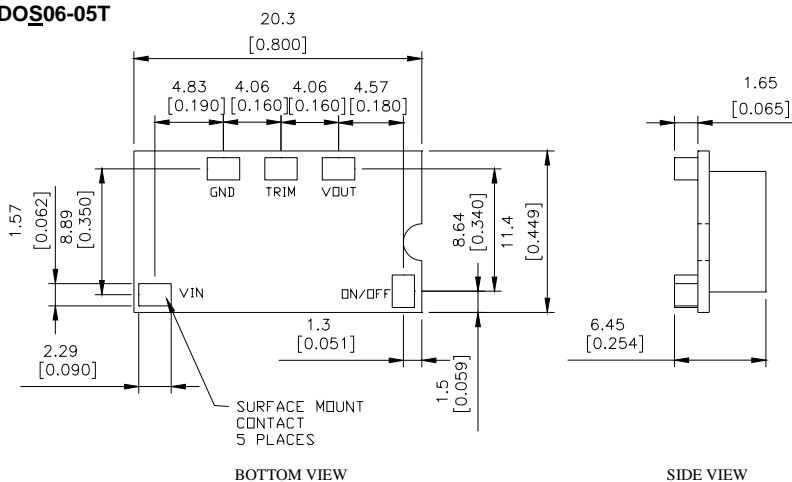
CAUTION: This power module is not internally fused. An input line fuse must always be used.

DOH06-05T

DOH06-05TA



DOS06-05T



$V_{o,set}$ (V)	R_{trim} (K Ω)
0.7525	Open
1.2	41.973
1.5	23.077
1.8	15.004
2.5	6.974
3.3	3.160

Dimensions are in millimeter and (inches).
Tolerances : x.x mm \pm 0.5 mm (x.xx in. \pm 0.02in).[unless otherwise indicated]
x.xx mm \pm 0.25 mm (x.xxx in \pm 0.01in).