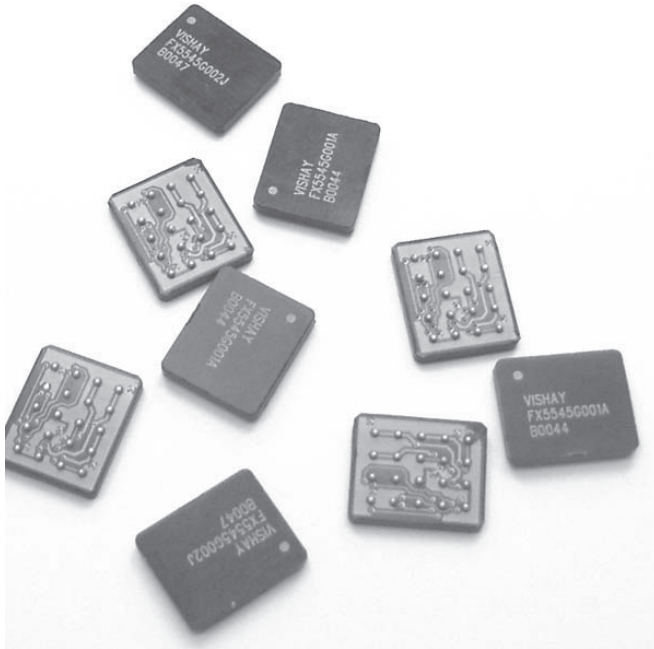


## Industry Smallest and Low Profile 8W 2.5A DC/DC Buck Converter with High Output Density Power



### FEATURES

- Fully integrated DC/DC converter
- High efficiency over large load range
- 100% duty cycle
- Power density - more than 300W/inch<sup>3</sup>
- 1uA shutdown current
- 2.7V to 6V input range (1Li+ and 3-cell NiCd or NiMH cells)
- 1.8V to 3.3V output voltage
- Programmable PWM/ $\overline{\text{PSM}}$  controls
- Low output ripple
- BGA/LGA construction
- Temperature range: - 40°C to + 85°C
- No external components needed
- Output power 8W
- Maximum current 2.5A
- Low profile

The DC/DC converter is a programmable topology synchronized Buck converter for today's continuous changing portable electronic market. The DC/DC converter provides flexibility of utilizing various battery configurations and chemistries such as NiCd, NiMH, or Li+ with an input voltage range of 2.7V to 6V. An additional flexibility is provided with topology programmability to power multiple loads such as power amplifiers, microcontrollers, or baseband logic IC's. For ultra-high efficiency, converters are designed to operate in synchronous rectified PWM mode under full load while transforming into externally controlled pulse-skipping mode (PSM) under light load.

The DC/DC converter is available in 20-ports BGA package. In order to satisfy the stringent ambient temperature

requirements, the DC/DC converter is designed to handle the industrial temperature range of - 40°C to + 85°C.

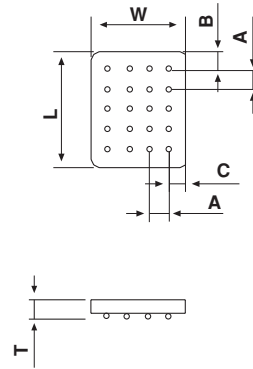
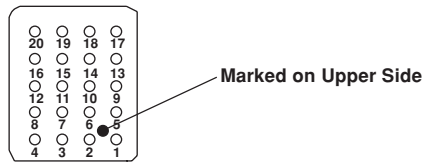
### APPLICATION

- Cordless phones, PDAs and others
- Supply voltage source for low-voltage chip sets
- Portable computers
- Battery back-up supplies
- Cameras
- Routers
- Fiber optics
- LANS
- Image processing

### ORDERING INFORMATION

	<b>FX</b>	<b>5545</b>	<b>G205</b>	□ □ □	□ □
FUNCTION					
SIZE					
CIRCUIT IDENTIFIER					
OUTPUT VOLTAGE-Example: 2.7V should be written as 2V7 as the V indicates the decimal point, or ADJ for adjustable version - self selectable output voltage.					
PACKAGING-B1 = 10pcs in bulk; B5 = 50pcs in bulk; T1 = 13" reel; T2 = 7" reel.					

<b>DIMENSIONS</b> in inches [millimeters]	
<b>L</b>	0.58 ± 0.01 [14.7 ± 0.25]
<b>W</b>	0.48 ± 0.01 [12.2 ± 0.25]
<b>A</b>	0.1 ± 0.01 [2.54 ± 0.25]
<b>B</b>	0.09 ± 0.01 [2.29 ± 0.25]
<b>C</b>	0.09 ± 0.01 [2.27 ± 0.25]
<b>T</b>	0.12 max [3 max]

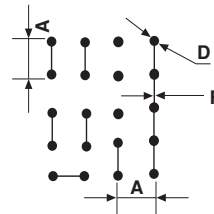

**BOTTOM SIDE**


**\*Note:** Pin Description application note is available on page 32.

**\*\*Note:** if not used must be connected to Vin.

<b>PIN CONFIGURATION*</b>	
<b>PIN</b>	<b>CONNECTION</b>
1, 2	$\overline{SD}$
3, 7	SYNC**
4, 8	N/C
5, 9	Vin
6, 10	PWM/PSM
11, 12	N/C
13, 17	GND
14, 18	Vout
15, 19	N/C
16, 20	GND

<b>RECOMMENDED PAD PATTERN</b> in inches [millimeters]		
<b>A</b>	<b>D</b>	<b>F</b>
0.1 ± 0.01 [2.54 ± 0.25]	0.03 ± 0.001 [0.8 ± 0.02]	0.02 ± 0.001 [0.5 ± 0.02]

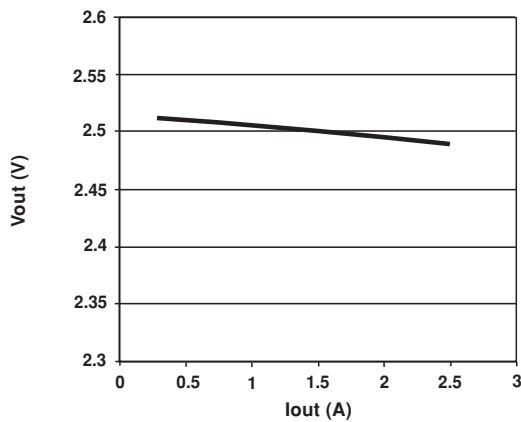

**TAPE AND REEL**

See Tape and Reel Information - Type B

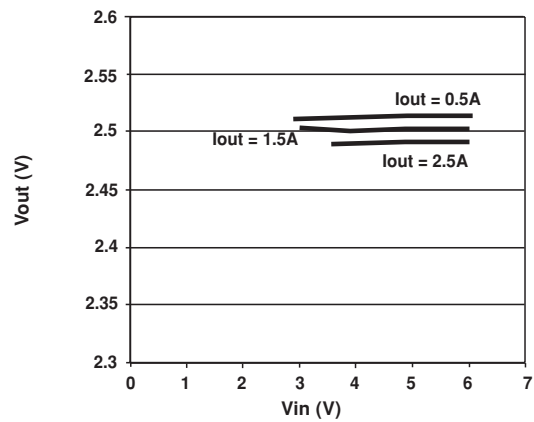


STANDARD ELECTRICAL SPECIFICATIONS					
PARAMETER	UNIT	CONDITION	MIN	TYP	MAX
<b>Input</b> Voltage Range	$V_{DC}$		2.7		6
<b>Insulation</b> Test Voltage Resistance Leakage Current	$V_{AC}$ $\Omega$ nA	60Hz 60sec $V_{ISO} = 500V_{DC}$ $V_{ISO} = 500V_{DC}$	750 $1 \times 10^{11}$		5
<b>Output</b> Power Voltage Voltage Tolerance Temp. Coefficient Ripple and Noise	W $V_{DC}$ % %/°C mVpp mVpp	at 25°C Ambient Temperature  DC to 20MHz With 10 $\mu$ F output capacitor	- 5	8 1.8 to 3.3  130 90	+ 5 0.03
<b>General</b> Package Weight	gr.				1.5
<b>Temperature</b> Operation Storage	°C °C		- 40 - 55		+ 85 + 125

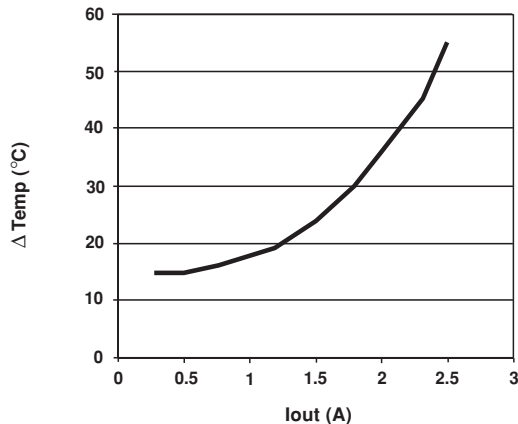
**Vout Vs. Iout**  
For  $V_{in} = 3.6V$ ;  $V_{out} = 2.5V$



**Vout Vs. Vin**



**$\Delta$  Temp. Vs. Iout**  
Above 25°C Ambient Temperature; For  $V_{in} = 6V$



**Efficiency Vs. Iout**  
For  $V_{in} = 3.6V$ ;  $V_{out} = 2.5V$

