

LAMPIRAN

Electrical Spec.

Hall A: 黄色 YEL 白色 (300mm)
 Hall B: 白色 WHITE (300mm)
 Hall C: 蓝色 blue (300mm)
 Hall S1: 红色 red, 黑色 black (300mm)

Motor wire:
 Phase U: 黄色 YEL
 Phase V: 红色 red
 Phase W: 黑色 black
 Motor wire: 三芯屏蔽线 18AWG (300mm)

Model	FXD57B11ES18-240TF-001A	
ITEM	UNIT	SPEC
PHASE	PHS	3
VOLTAGE	VDC	24
ROTOR POLES	POLE	4
NOLOAD SPEED	RPM	5000REF
NOLOAD CURRENT	A	0.2REF
RATED SPEED	RPM	4000
RATED POWER	W	180
RATED TORQUE	Nm	0.43
RATED CURRENT	A	11
INSULATING STRENGTH	VAC	500
P CLASS		F40
INSULATION CLASS		B
WEIGHT	g	800

阶段	标记	重量	比例
共	张	张	1:1.1

常州市富贤达机电科技有限公司

规格书

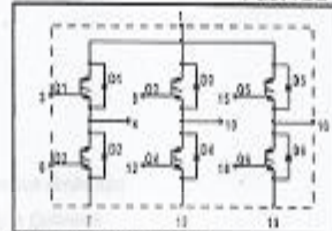
FXD57B11ES18-240TF-001A

IGBT SIP MODULE

Fast IGBT

Features

- Fully isolated printed circuit board mount package
 - Switching-loss rating includes all "tail" losses
 - HEXFRED™ soft ultrafast diodes
 - Optimized for medium operating (1 to 10 kHz)
- See Fig. 1 for Current vs. Frequency curve



Product Summary

Output Current in a Typical 5.0 kHz Motor Drive

18 A_{RMS} per phase (4.6 kW total) with $T_C = 90^\circ C$, $T_J = 125^\circ C$, Supply Voltage 360Vdc,
Power Factor 0.8, Modulation Depth 115% (See Figure 1)

Description

The IGBT technology is the key to International Rectifier's advanced line of IMS (Insulated Metal Substrate) Power Modules. These modules are more efficient than comparable bipolar transistor modules, while at the same time having the simpler gate-drive requirements of the familiar power MOSFET. This superior technology has now been coupled to a state of the art materials system that maximizes power throughput with low thermal resistance. This package is highly suited to motor drive applications and where space is at a premium.



Absolute Maximum Ratings

Parameter	Max.	Units
V_{CE} Collector-to-Emitter Voltage	600	V
$I_C @ T_C = 25^\circ C$ Continuous Collector Current, each IGBT	27	A
$I_C @ T_C = 100^\circ C$ Continuous Collector Current, each IGBT	15	
I_{CM} Pulsed Collector Current \odot	80	
I_{LM} Clamped Inductive Load Current \odot	80	
$I_F @ T_C = 100^\circ C$ Diode Continuous Forward Current	9.3	
I_{FM} Diode Maximum Forward Current	80	
V_{GE} Gate-to-Emitter Voltage	± 20	V
V_{ISO} Isolation Voltage, any terminal to case, 1 minute	2500	V _{ISO}
$P_n @ T_C = 25^\circ C$ Maximum Power Dissipation, each IGBT	63	W
$P_n @ T_C = 100^\circ C$ Maximum Power Dissipation, each IGBT	25	
T_J Operating Junction and Storage Temperature Range	-40 to +150	°C
T_{S10} Soldering Temperature, for 10 sec	300 (0.063 in. (1.6mm) from case)	
Mounting torque, 6-32 or M3 screw.	5-7 lb/in (0.55-0.8 N/m)	

Thermal Resistance

Parameter	Typ.	Max.	Units
R_{JC} (IGBT) Junction-to-Case, each IGBT, one IGBT in conduction	—	2.0	°C/W
R_{JC} (DIODE) Junction-to-Case, each diode, one diode in conduction	—	3.0	
R_{CS} (MODULE) Case-to-Sink, flat, gressed surface	0.10	—	
WR Weight of module	20 (0.7)	—	g (oz)

TLP250

Industrial Inverter
 Inverter For Air Conditioner
 IGBT Gate Drive
 Power MOS FET Gate Drive

The TOSHIBA TLP250 consists of an infrared emitting diode and a integrated photodetector.

This unit is 8-lead DIP package.

TLP250 is suitable for gate driving circuit of IGBT or power MOS FET.

- Input threshold current: 5mA(max)
- Supply current : 11mA(max)
- Supply voltage : 10-35V
- Output current : $\pm 1.5A$ (max)
- Switching time (t_{LH}/t_{FL}) : 0.5 μ s(max)
- Isolation voltage: 2500V_{rms}(min)
- UL-recognized: UL 1677, File No.E67349
- cUL-recognized: CSA Component Acceptance Service No.5A
 File No.E67349
- VDE-Approved: EN 60747-5-5 (Note 1)

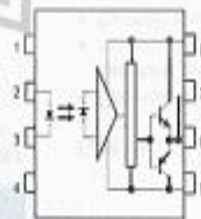
Note 1: When a VDE approved type is needed,
 please designate the Option(D4).



Truth Table

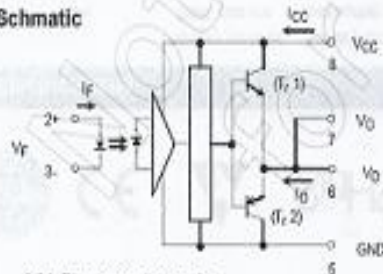
		Tr1	TQ
Input LED	On	On	Off
	Off	Off	On

Pin Configuration (top view)



- 1: NC
- 2: Anode
- 3: Cathode
- 4: NC
- 5: GND
- 6: V_o (Output)
- 7: V_o
- 8: V_{cc}

Schematic



A 0.1 μ F bypass capacitor must be connected between pin 5 and 8

SNx4HC541 Octal Buffers and Line Drivers With 3-State Outputs

1 Features

- Wide Operating Voltage Range of 2 V to 6 V
- High-Current 3-State Outputs Drive Bus Lines Directly or Up to 15 LSTTL Loads
- Low Power Consumption, 80- μ A Maximum I_{CC}
- Typical $t_{pd} = 10$ ns
- ± 6 -mA Output Drive at 5 V
- Low Input Current of 1 μ A Maximum
- Data Flow-Through Pinout (All Inputs on Opposite Side From Outputs)

2 Applications

- LEDs
- Servers
- PCs and Notebooks
- Wearable Health and Wellness Devices
- Electronic Points of Sale

3 Description

These octal buffers and line drivers feature the performance of the SNx4HC541 devices and a pinout with inputs and outputs on opposite sides of the package. This arrangement greatly facilitates printed circuit board layout.

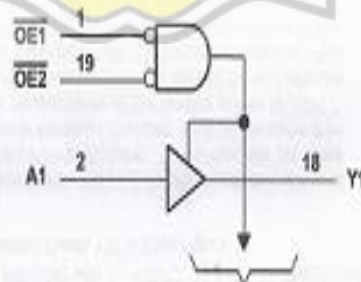
The 3-state outputs are controlled by a two-input NOR gate. If either output-enable ($\overline{OE1}$ or $\overline{OE2}$) input is high, all eight outputs are in the high-impedance state. The SNx4HC541 devices provide true data at the outputs.

Device Information⁽¹⁾

PART NUMBER	PACKAGE	BODY SIZE (NOM)
SN74HC541DW	SOIC (20)	12.80 mm × 7.60 mm
SN74HC541DB	SSOP (20)	7.20 mm × 5.30 mm
SN74HC541N	PDIP (20)	24.30 mm × 6.35 mm
SN74HC541NS	SO (20)	12.80 mm × 5.30 mm
SN74HC541PW	TSSOP (20)	6.50 mm × 4.40 mm
SN54HC541J	CDIP (20)	24.20 mm × 6.92 mm
SN54HC541FK	LCCC (20)	8.89 mm × 8.89 mm

(1) For all available packages, see the orderable addendum at the end of the data sheet.

Logic Diagram (Positive Logic)



To Seven Other Channels

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dsPIC30F4011/4012

dsPIC30F4011/4012 Enhanced Flash 16-bit Digital Signal Controller

Note: This data sheet summarizes features of this group of dsPIC30F devices and is not intended to be a complete reference source. For more information on the CPU, peripherals, register descriptions and general device functionality, refer to the dsPIC30F Family Reference Manual (DS70046). For more information on the device instruction set and programming, refer to the dsPIC30F Programmer's Reference Manual (DS70030).

High Performance Modified RISC CPU:

- Modified Harvard architecture
- C compiler optimized instruction set architecture with flexible addressing modes
- 84 base instructions
- 24-bit wide instructions, 16-bit wide data path
- 48 Kbytes on-chip Flash program space (16K instruction words)
- 2 Kbytes of on-chip data RAM
- 1 Kbytes of non-volatile data EEPROM
- Up to 30 MIPS operation:
 - DC to 40 MHz external clock input
 - 4 MHz-10 MHz oscillator input with PLL active (4x, 8x, 16x)
- 30 interrupt sources
 - 3 external interrupt sources
 - 8 user selectable priority levels for each interrupt source
 - 4 processor trap sources
- 16 x 16-bit working register array

DSP Engine Features:

- Dual data fetch
- Accumulator write back for DSP operations
- Modulo and Bit-Reversed Addressing modes
- Two, 40-bit wide accumulators with optional saturation logic
- 17-bit x 17-bit single cycle hardware fractional/integer multiplier
- All DSP instructions single cycle
- \pm 16-bit single cycle shift

Peripheral Features:

- High current sink/source I/O pins: 25 mA/25 mA
- Timer module with programmable prescaler:
 - Five 16-bit timers/counters; optionally pair 16-bit timers into 32-bit timer modules
- 16-bit Capture input functions
- 16-bit Compare/PWM output functions
- 3-wire SPI™ modules (supports 4 Frame modes)
- I²C™ module supports Multi-Master/Slave mode and 7-bit/10-bit addressing
- 2 UART modules with FIFO Buffers
- 1 CAN module; 2.0B compliant

Motor Control PWM Module Features:

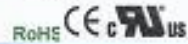
- 6 PWM output channels
 - Complementary or Independent Output modes
 - Edge and Center Aligned modes
- 3 duty cycle generators
- Dedicated time base
- Programmable output polarity
- Dead-time control for Complementary mode
- Manual output control
- Trigger for A/D conversions

Quadrature Encoder Interface Module Features:

- Phase A, Phase B and Index Pulse input
- 16-bit up/down position counter
- Count direction status
- Position Measurement (x2 and x4) mode
- Programmable digital noise filters on inputs
- Alternate 16-bit Timer/Counter mode
- Interrupt on position counter rollover/underflow



A_S-2W & B_S-2W Series
2W, FIXED INPUT, ISOLATED & UNREGULATED
DUAL/SINGLE OUTPUT DC-DC CONVERTER



FEATURES

- High Efficiency up to 86%
- 1KVDC Isolation
- SIP Package
- Internal SMD Construction
- Temperature Range: -40°C to +85°C
- No Heat sink Required
- No External Component Required
- Industry Standard Pinout
- RoHS Compliance

APPLICATIONS

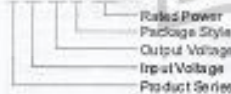
The A_S-2W & B_S-2W Series are specially designed for applications where a group of polar power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- Where the voltage of the input power supply is fixed (voltage variation $\leq \pm 10\%$);
- Where isolation is necessary between input and output (isolation voltage $\leq 1000\text{VDC}$);
- Where the regulation of the output voltage and the output ripple noise are not demanding.

Such as: purely digital circuits, ordinary low frequency analog circuits, and IGBT power device driving circuits.

MODEL SELECTION
A0505S-2W



MORNSUN Science & Technology Co., Ltd.
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http://www.mornsun-power.com

PRODUCT PROGRAM

Part Number	Input Voltage (VDC)		Output Voltage (VDC)		Current (mA)	Efficiency (% Typ)	UL CE
	Nominal	Range	Max	Min			
B0505S-2W	3.3	2.97-3.63	3.3	400	40	73	
A0505S-2W			±5	±200	±20	82	UL
A0506S-2W			±9	±111	±12	85	UL
A0512S-2W			±12	±83	±9	86	UL
A0515S-2W			±15	±67	±7	82	UL
A0524S-2W			±24	±42	±5	82	
B0505S-2W	5	4.5-5.5	3.3	400	40	74	
B0506S-2W			5	400	40	81	UL CE
B0509S-2W			9	222	23	84	UL CE
B0512S-2W			12	167	17	83	UL CE
B0515S-2W			15	133	14	84	UL CE
A1205S-2W			±5	±200	±20	81	UL
A1209S-2W			±9	±111	±12	84	UL
A1212S-2W			±12	±83	±9	86	UL
A1215S-2W	12	10.8-13.2	±15	±67	±7	82	UL
B1206S-2W			5	400	40	81	UL CE
B1209S-2W			9	222	23	82	UL CE
B1212S-2W			12	167	17	85	UL CE
B1215S-2W			15	133	14	82	UL CE
A1505S-2W			±5	±200	±20	80	
B1506S-2W	15	13.5-16.5	±5	400	40	80	
A2405S-2W			±5	±200	±20	80	UL
A2409S-2W			±9	±111	±12	84	UL
A2412S-2W			±12	±83	±9	84	UL
A2415S-2W			±15	±67	±7	84	UL
A2424S-2W			±24	±42	±5	85	
B2406S-2W	24	21.6-26.4	5	400	40	80	UL CE
B2409S-2W			9	222	23	83	UL CE
B2412S-2W			12	167	17	84	UL CE
B2415S-2W			15	133	14	84	UL CE
B2424S-2W			24	84	10	84	

Note: The A_S-1W/S, B_S-1W series also are available in our company.

COMMON SPECIFICATIONS

Item	Test conditions	Min	Typ	Max	Units
Operating Temp. Range		-40		85	°C
Storage Temp. Range		-65		125	°C
Storage humidity range				95	%
Cooling		Free air convection			
Temp. rise at full load			15	25	°C
Load temperature	1.5mm from case for 10 seconds			300	°C
Short circuit protection*				1	s
Case material		Plastic (UL94-V0)			
MTBF		3500			K hours
Weight			2.8		g

*Supply voltage must be discontinued at the end of short circuit duration.

MORNSUN

B_S-1W & B_D-1W Series

1W, FIXED INPUT ISOLATED & UNREGULATED
SINGLE OUTPUT MINIATURE SIP/DIP PACKAGE



multi-country patent protection RoHS

FEATURES

- Efficiency up to 80%
- Small Footprint
- Miniature SIP/DIP Package
- 1KVDC Isolation
- Temperature Range: -40°C ~ +85°C
- Internal SMD Construction
- Industry Standard Pinout
- No Heat sink Required
- No External Component Required
- PCB Mounting
- RoHS Compliance

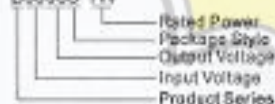
APPLICATIONS

The B_S-1W & B_D-1W Series are specially designed for applications where a single power supply is isolated from the input power supply in a distributed power supply system on a circuit board. These products apply to:

- 1) Where the voltage of the input power supply is fixed (voltage variation < 10%);
- 2) Where isolation is necessary between input and output (isolation voltage > 1000VDC);
- 3) Where the regulation of the output voltage and the output ripple and noise are not demanding. Such as: purely digital circuits, ordinary low frequency analog circuits and ICOT power device driven circuits, etc.

MODEL SELECTION

B0505S-1W



MORNSUN Science & Technology Co., Ltd.
Address: 2th floor 6th building, Huangzhou Industrial District, Guangzhou, China
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Fax: 86-20-38601272
HTTP://www.mornsun-power.com

PRODUCT PROGRAM

Part Number	Input Voltage (VDC)		Output Voltage (VDC) / Current (mA)			Efficiency (% Typ.)	UL CE
	Nominal	Range	Voltage (VDC)	Current (mA)			
				Max	Min		
B0305D-1W	3.3	2.87-3.03	3.3	300	30	72	
B0305SD-1W			5	200	20	74	
B0505D-1W	5	4.5-5.5	3.3	300	30	72	
B0505SD-1W			5	200	20	70	UL CE
B0512D-1W	5	4.5-5.5	5	111	12	70	UL CE
B0512SD-1W			12	85	9	78	UL CE
B0515D-1W			15	67	7	80	UL CE
B1205D-1W	12	10.8-13.2	3.3	300	30	72	
B1205SD-1W			5	200	20	71	UL CE
B1212D-1W	12	10.8-13.2	5	111	12	70	UL CE
B1212SD-1W			12	85	9	70	UL CE
B1215D-1W			15	67	7	80	UL CE
B2405D-1W	24	21.6-20.4	5	200	20	73	UL CE
B2405SD-1W			5	111	12	70	UL CE
B2412D-1W			12	85	9	79	UL CE
B2415D-1W			15	67	7	80	UL CE

Note: The B_S-1W & B_D-1W series also are available in our company.

COMMON SPECIFICATION

Item	Test Conditions	Min.	Typ.	Max.	Units
Storage humidity				80	%
Operating temperature		-40		80	°C
Storage temperature		-55		125	
Temp. rise at full load			15	20	
Load temperature	1.5mm from case for 10 seconds			300	
Short circuit protection*				1	s
Cooling		Free air convection			
Case material		Fluoro(U194-V0)			
MTBF		2500			K.hours
Weight			1.5		g

*Specify voltage must be discontinued at the end of short circuit duration.

ISOLATION SPECIFICATIONS

Item	Test Conditions	Min.	Typ.	Max.	Units
Isolation voltage	Tested for 1 minute and 1mA max	1000			VDC
Isolation resistance	Test at 500VDC	1000			MΩ



3.45% PLAGIARISM
APPROXIMATELY

Report #11050218

BAB I PENDAHULUAN Latar Belakang Kendaraan listrik semakin dibutuhkan di bidang transportasi terbaru. Kendaraan listrik merupakan transportasi yang ramah lingkungan dan hemat dalam penggunaannya. Kendaraan listrik memiliki jarak tempuh yang jauh dibandingkan kendaraan berbahan bakar fosil dengan pengereman regeneratif. Pengereman regeneratif diterapkan pada kendaraan listrik untuk meningkatkan efektifitas dari kendaraan listrik. Sehingga kendaraan listrik memiliki jarak tempuh yang semakin jauh dan hemat dalam penggunaan dan perawatannya. ADDIN [1], ADDIN [2]. Kendaraan listrik dalam menerapkan pengereman regeneratif dibutuhkan hardware yang dapat mengendalikannya, sehingga kendaraan listrik menjadi lebih efisien pada saat melakukan pengereman regeneratif. Hardware yang diperlukan untuk mengontrol pengereman regeneratif pada kendaraan listrik antara lain inverter tiga fasa yang berfungsi untuk konverter mengendalikan motor dari kendaraan listrik, driver mosfet, mikrokontroler dan perangkat pendukung lainnya. Motor modern yang digunakan adalah motor Brushless Direct Current (BLDC). Motor BLDC memiliki banyak keunggulan, di antaranya adalah kecepatan yang tinggi, torka yang tinggi saat kecepatan rendah, tidak ada lilitan pada stator sehingga menyebabkan pembuangan panas yang optimal, tidak memakai sikat sehingga