

## DK-PS21962, DK-PS21963, DK-PS21964, DK-PS21965 Version 4 Super Mini DIP-IPM Basic Development Board

### (1) Demo Board Outline

The demo board consists the minimum necessary components such as snubber capacitor, bootstrap circuit elements of DIP-IPM Ver.4 interface shown in Fig.5-1.

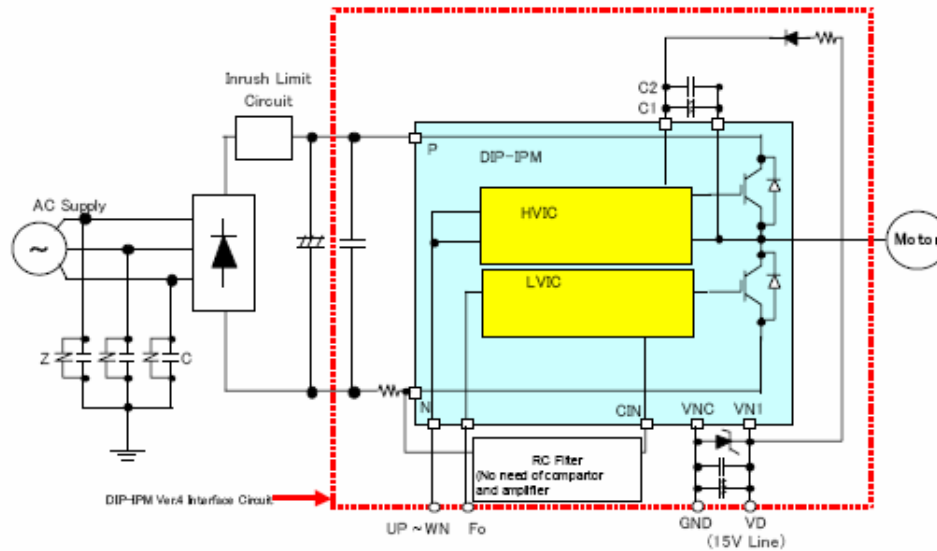
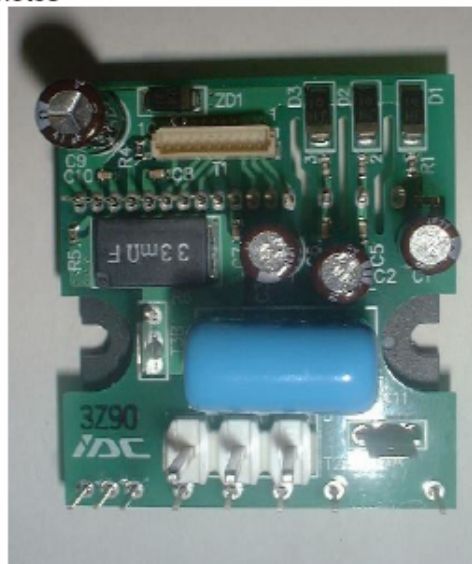
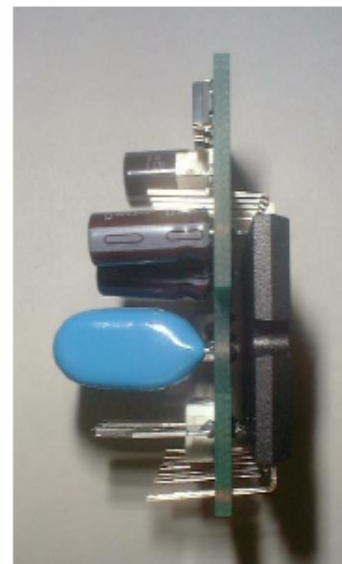


Fig.5-1 Demo board interface circuit

### (2) Demo Board Photos



Top view

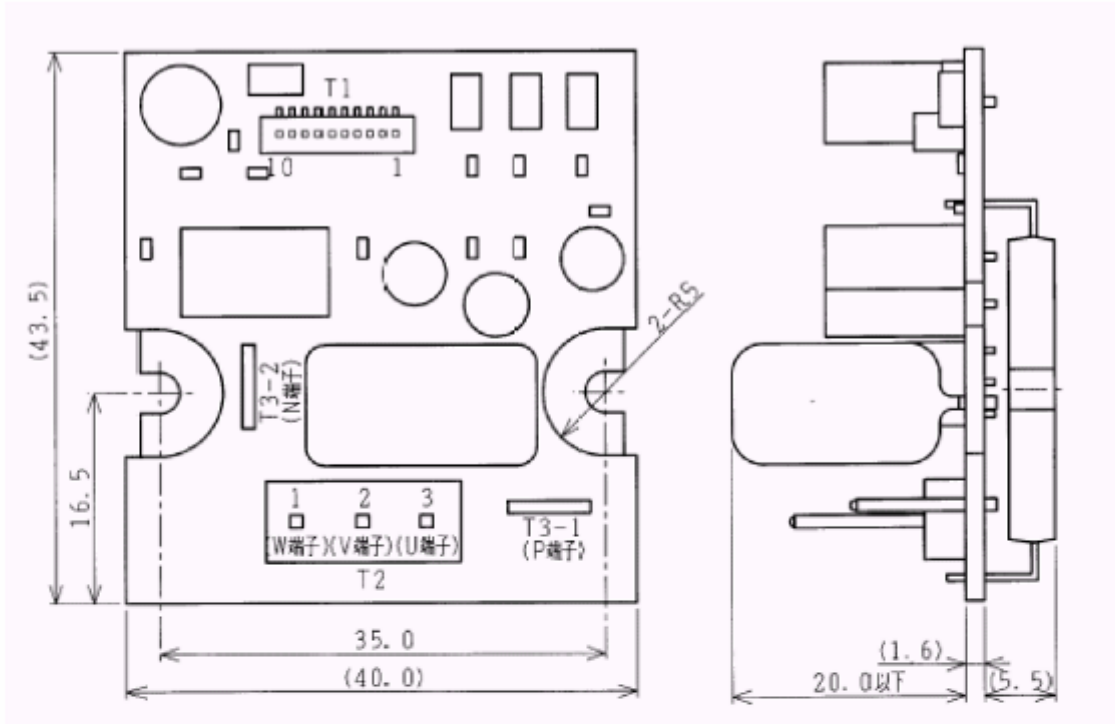


Side view

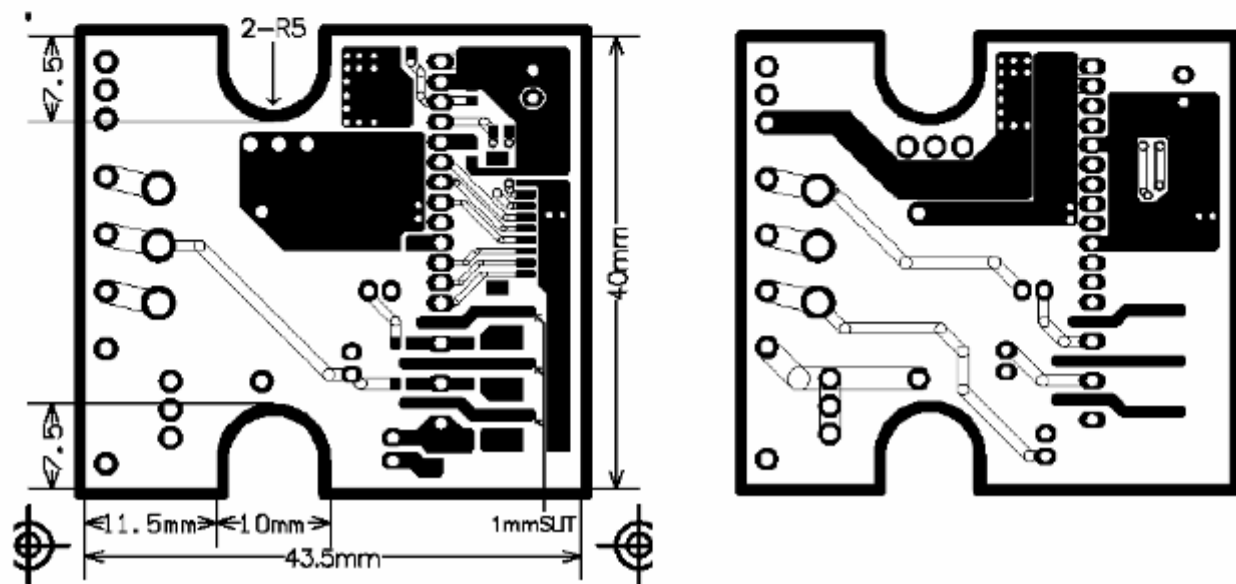
Fig.5-2 Demo board photo

Note: Board dimension 43.5×40×27.1mm (including snubber capacitor height and module height)  
Total periphery elements count: 21

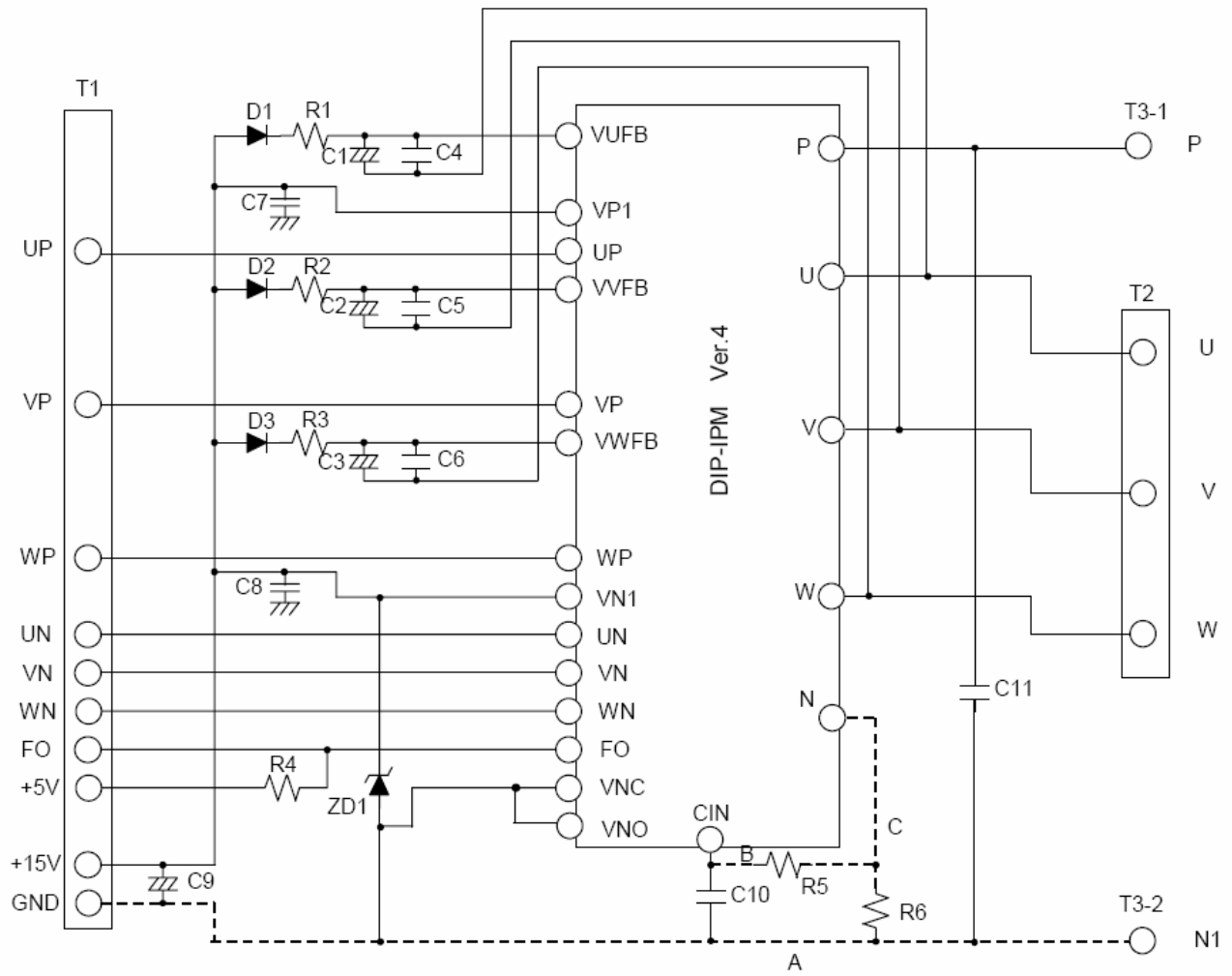
### 3. Demo Board Outlines



### 4. PCB Layout



## 5. Interface Circuit Schematic



Note: please make the pattern wiring at the part A, B and C as short as possible

## 6. Parts List (only for reference)

Symbol	Type Name	Description	pcs	Note
D1	U05JH44	0.5A 600V Diode	1	Toshiba, High speed type
D2	U05JH44	0.5A 600V Diode	1	Toshiba, High speed type
D3	U05JH44	0.5A 600V Diode	1	Toshiba, High speed type
ZD1	U1ZB24	24V 1W Zener Diode	1	Toshiba
C1	UFP1H220MEH	22 $\mu$ F50V Al electrolytic capacitor	1	Nichicon
C2	UFP1H220MEH	22 $\mu$ F50V Al electrolytic capacitor	1	Nichicon
C3	UFP1H220MEH	22 $\mu$ F50V Al electrolytic capacitor	1	Nichicon
C4	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Murata
C5	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Murata
C6	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Murata
C7	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Murata
C8	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Murata
C9	UFP1H470MEH	47 $\mu$ F50V Al electrolytic capacitor		Nichicon
C10	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Murata
C11	MDDSA	0.22 $\mu$ F630V snubber capacitor	1	Hitachi AIC
R1	RK73H1JTD10F	1/16W 10 $\Omega$ F	1	KOA
R2	RK73H1JTD10F	1/16W 10 $\Omega$ F	1	KOA
R3	RK73H1JTD10F	1/16W 10 $\Omega$ F	1	KOA
R4	RK73H1JTD10kF	1/16W 10k $\Omega$ F	1	KOA
R5	RK73H1JTD2kF	1/16W 2k $\Omega$ F	1	KOA
R6	SL2TTEXXLF	2W 16, 22, 33, 68 m $\Omega$ $\pm$ 5%	1	KOA, Current detecting resistor
T1	BS10B-SRSS	10pin Socket	1	
T2	B3P- B-2	3-terminal connector	1	
T3-1	TP42097-21	Fasten tab	1	
T3-2	TP42097-21	Fasten tab	1	
IPM	PS21962/963/964/965	5A/10/15A/15A/20A	1	Mitsubishi DIP-IPMVer.4

## 7. Precautions in Using the Demo Board for Evaluation

- An about 30cm long cable for input signal & power supply connection is attached with the demo set. However, please make the signal connection between MCU/DSP and the DIP-IPM as short as possible.
- Please select the proper shunt resistance corresponding to the current rating of the DIP-IPM.  
(68m $\Omega$  for PS21962, 33m $\Omega$  for PS21963, 22m $\Omega$  for PS21964, 16m $\Omega$  for PS21965)