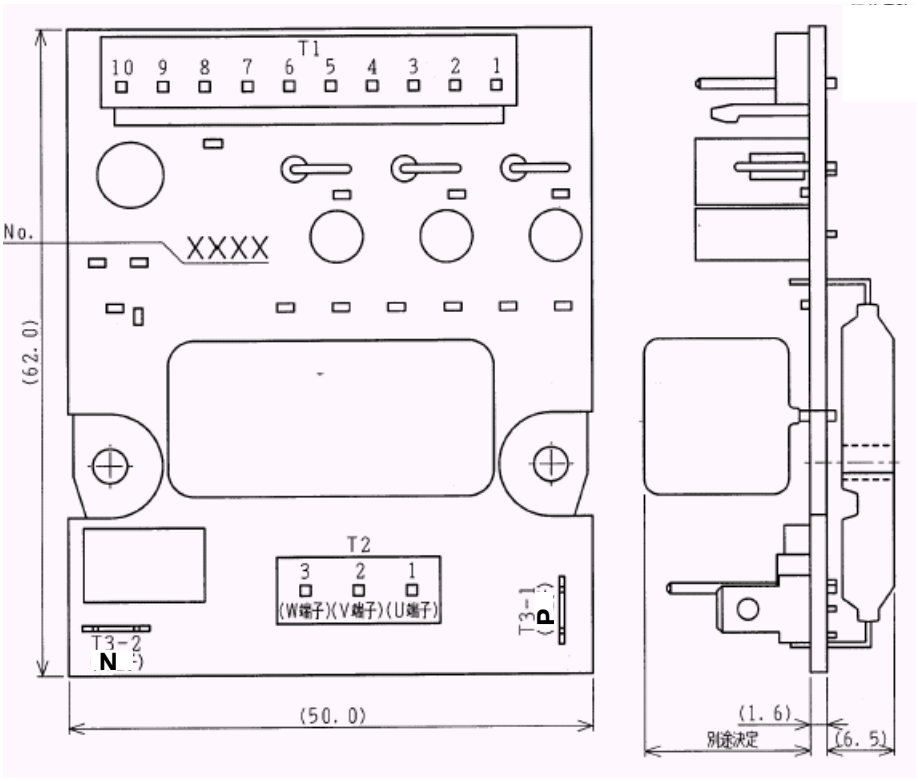
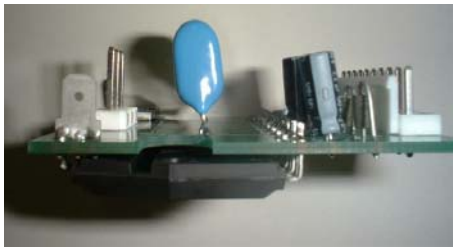
Mini DIP-IPM Basic Demonstration Board Application Note

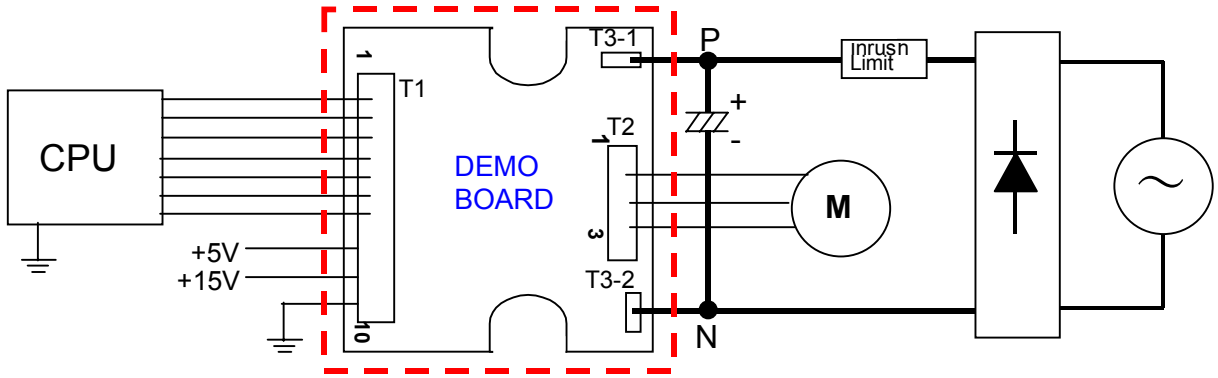
Note: (1) This demo board is designed for use with Generation 3 Mini DIP-IPM's (PS21562, PS21563)
(2) When using PS21564 it is necessary to cut the wiring connection between VNO and N terminals.

1. Board Outlines

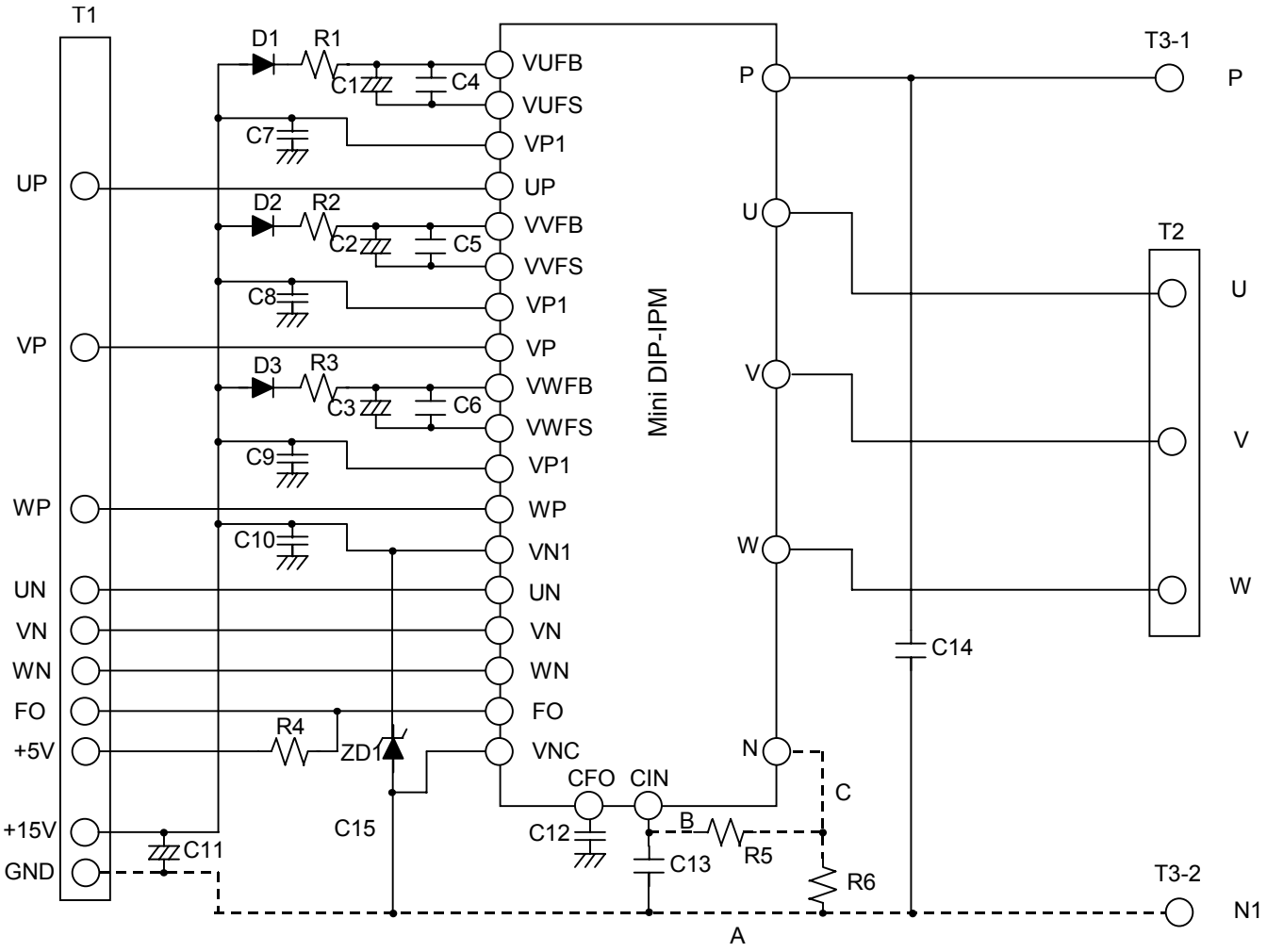




2. System Connection



3. PCB Circuit Schematic



4. Design Points of your PCB

1. The length of input signal pattern wiring (from input terminals to DIP-IPM) should be less than 30mm;
2. Make the wiring length as dedicated by the dotted lines of A, B, C in the figure as short as possible;
3. All filter capacitors and smoothing capacitors should be mounted very closely to DIP-IPM terminals;
4. Make the pattern layout within the area of 70mm×57mm for a single face printed circuit board;
5. Make two 10ϕ screw holes in the heat sink so as to mount the DIP-IPM by screws.

6. Parts List (only for reference)

Symbol	Type Name	Description	pcs	Note
D1	10DRA60	1A 600V Diode	1	Japan International, High speed type
D2	10DRA60	1A 600V Diode	1	Japan International, High speed type
D3	10DRA60	1A 600V Diode	1	Japan International, High speed type
ZD1	U1ZB24	24V 1W Zener Diode	1	Toshiba
C1	UFP1H220MEH	22μF50V Al electrolytic capacitor	1	Nichicon, Super temperature property
C2	UFP1H220MEH	22μF50V Al electrolytic capacitor	1	Nichicon, Super temperature property
C3	UFP1H220MEH	22μF50V Al electrolytic capacitor	1	Nichicon, Super temperature property
C4	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Super property in temperature and frequency
C5	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Super property in temperature and frequency
C6	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Super property in temperature and frequency
C7	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Super property in temperature and frequency
C8	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Super property in temperature and frequency
C9	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Super property in temperature and frequency
C10	GRM39R102M50PT	1000pF50V ceramic capacitor	1	Super property in temperature and frequency
C11	UFP1H470MEH	47μF50V Al electrolytic capacitor	1	Nichicon
C12	GRM39R223K50PT	0.022μF50V ceramic capacitor	1	
C13	GRM39R102M50PT	1000pF50V ceramic capacitor	1	
C14	MDDSA	0.22μF630V snubber capacitor	1	Hitachi AIC
R1	RK73H1JTD10F	1/16W 10ΩF	1	Japan KOA
R2	RK73H1JTD10F	1/16W 10ΩF	1	Japan KOA
R3	RK73H1JTD10F	1/16W 10ΩF	1	Japan KOA
R4	RK73H1JTD10kF	1/16W 10kΩF	1	Japan KOA
R5	RK73H1JTD2kF	1/16W 2kΩF	1	Japan KOA
R6	SL2TTE68LF	2W 0.068ΩF±5%	1	Japan KOA, Current detecting resistor
T1	B10P-VH	10pin Socket	1	
T2	5279-03A	3-terminal connector	1	
T3	42018	Fasten tab	2	
IPM	PS21562/3	Mitsubishi 5A/10A mini DIP-IPM	1	