

IGBT ASSEMBLIES

A leading supplier of IGBTs and other high power semiconductor applications, Powerex also produces POW-R-PAKs™, configurable IGBT power assemblies.

POW-R-PAK-GenII™

Powerex part numbers beginning with the prefix “NX” denote a GenII version of POW-R-PAK, which are recommended for new designs.

Applications Include:

- Distributed Power Generation
- Energy Storage
- Industrial Power Supplies
- Motor Drives
- Power Quality

Basic Circuit Configurations:

- Chopper
- Half-Bridge
- H-Bridge
- Three-Phase Bridge

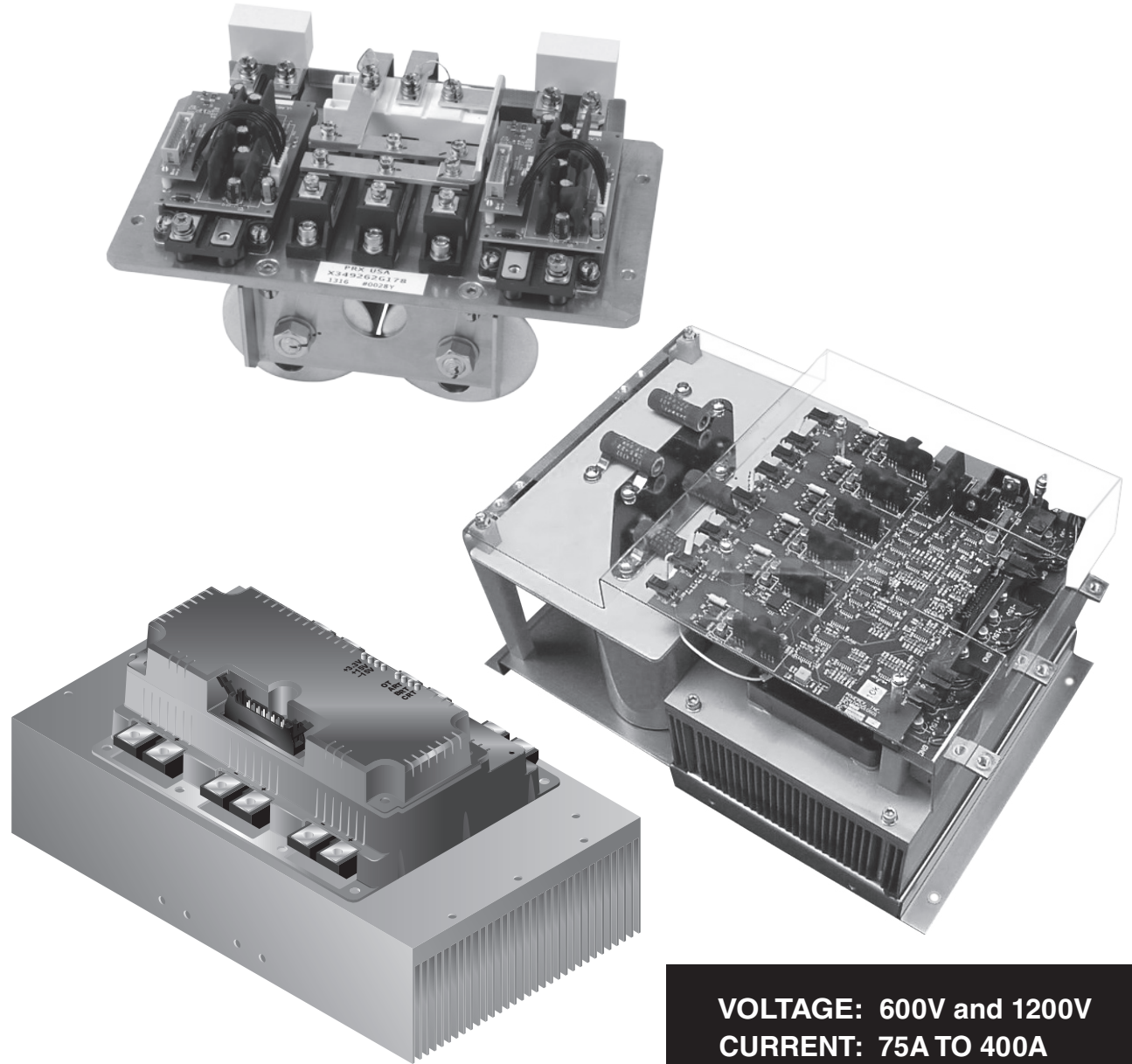
Additional Available Options:

- Application Specific
- Blower/Fan
- Capacitor Banks

Note: Custom IGBT Assemblies Also Available

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VOLTAGE: 600V and 1200V
CURRENT: 75A TO 400A

IGBT NX Series IGBT Assembly Overview

To help determine the proper IGBT assembly for your application, the following information is needed.

(1) Type NX Series IGBTs:

Air Cooled – Is a fan required?

Liquid Cooled – Type of liquid cooling: water or glycol.

(2) Power:

Single-Phase

Input (VDC) _____

Output Freq. _____

Output (VAC) _____

Output Current (AAC) _____

Three-Phase

Input (VDC) _____

Output Freq. _____

Output (VAC) _____

Output Current (AAC) _____

(3) Ambient Temperature (°C)

(4) Switching Frequency (kHz)

(5) Circuit Configuration:

Chopper H-Bridge

Half-Bridge Three-Phase Bridge

(6) Options:

Blower / Fan

Electrolytic Capacitors at 50 µfd/Amp

Film Capacitors at 20 µfd/Amp

No Cap Bank

Application Specific

(7) Assembly:

Prototype

Production - Estimated Annual Volume

Please email this information to our IPP Department at ipp@pwr.com.

A Powerex engineer will review the information and contact you to discuss your assembly needs.

NX Numbering System*

NXD1K2A200A50-XX is a 200KVA IGBT air cooled half-bridge assembly using IGBTs rated at 1200 Volts AC.

NX	D	1K2	A	200	A	50	-	XX
(1)	(2)	(3)(4)(5)	(6)	(7)(8)(9)	(10)	(11)(12)		(13)(14)

(1) Type:

NX = NX Series IPP Assembly

(7)(8)(9) KVA Rating

001 to 999

1K0 to 9K2

(2) Circuit Configuration:

H = Single Brake

i.e. 200 = 200KVA

D = Half-Bridge

i.e. 1K2 = 1200KVA

B = H-Bridge

T = Three-Phase Bridge

R = Three-Phase + Brake

E = Chopper

(10) Thermal Management

A = Air Cooled

W = Liquid Cooled

(3)(4)(5) Voltage

001 to 999

1K0 to 9K9

i.e. 600 = 600V

i.e. 1K2 = 1200V

i.e. 1K7 = 1700V

(11)(12) Ambient Temperature

STD 40°C

Options 50°C

>50°C Consult Factory

(13)(14) Options

01 to 99

(6) Voltage Type

A = AC (Active Front End)

D = DC

*Powerex is in the process of launching Gen II POW-R-PAK™ IGBT Assemblies. Powerex part numbers beginning with the prefix "NX" denote a Gen II version of POW-R-PAK, which are recommended for new designs.

IGBT PP Series IGBT Assembly Overview

To help determine the proper IGBT assembly for your application, the following information is needed.

(1) Type PP Series IGBTs:

Air Cooled – Is a fan required?

Liquid Cooled – Type of liquid cooling: water or glycol.

(2) Power:

Single-Phase

Input (VDC) _____

Output Freq. _____

Output (VAC) _____

Output Current (AAC) _____

Three-Phase

Input (VDC) _____

Output Freq. _____

Output (VAC) _____

Output Current (AAC) _____

(3) Ambient Temperature (°C)

(4) Switching Frequency (kHz)

(5) Circuit Configuration:

Chopper H-Bridge

Half-Bridge Three-Phase Bridge

(6) Options:

Blower / Fan

Electrolytic Capacitors at 50 µfd/Amp

Film Capacitors at 20 µfd/Amp

Application Specific

(7) Assembly:

Prototype

Production - Estimated Annual Volume

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A Powerex engineer will review the information and contact you to discuss your assembly needs.

PP Numbering System

PP400B060-ND is a 400A IGBT H-Bridge assembly using IGBTs rated at 600 Volts AC.

PP 400 B 060 – ND

(1) (2) (3) (4) (5)

(1) Type:

PP = PP Series IPP Assembly

(4) Voltage

060 = 600V

120 = 1200V

(2) Amperes

(5) Factory Designation

(3) Circuit Configuration:

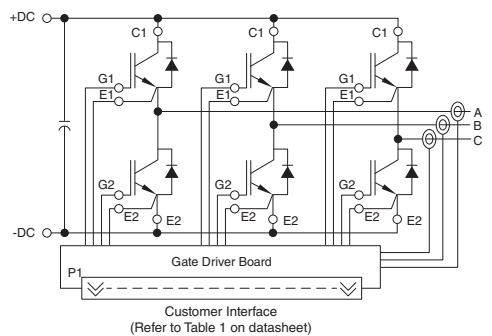
B = H-Bridge

T = 3-Phase

600V and 1200V 3-Phase IGBT Assemblies,

(Refer to device datasheets at www.pwr.com for test conditions.)

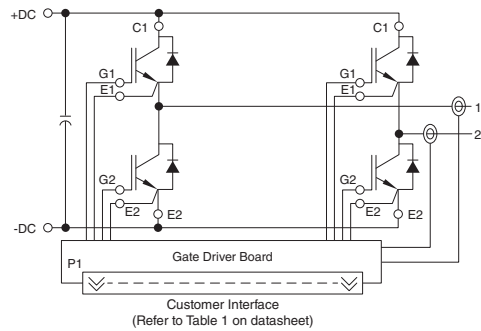
MAXIMUM RATINGS (IGBT Inverter Sector)				ELECTRICAL CHARACTERISTICS (IGBT Part)									THERMAL CHARACTERISTICS			Outline Drawings	
Type	V _{CE(S)} Volts	I _C Amperes	V _{RMS} Isolation Volts	Typ. V _{CE(SAT)} Volts	V _{EC} Volts	I _{CE(S)} mA	V _{CC(Prot)} Volts	Inductive Load Switching Times				R _{th(c-f)} °C/W	IGBT R _{th(j-c)} °C/W	DIODES R _{th(j-c)} °C/W	Weight lbs		
								t _{d(on)} Ns	t _r Ns	t _{d(off)} Ns	t _{f(off)} Ns						
PP75T120-ND	1200	75	2500	2.4	3.8	1.0	900	100	50	400	300	0.19	0.22	0.29	24.4	1	K-6
PP150T120-ND	1200	150	2500	2.1	3.8	1.0	900	130	100	450	350	0.022	0.13	0.23	24.4	1	K-6
PP200T060-ND	600	200	2500	1.7	2.6	1.0	900	120	120	300	300	0.07	0.13	0.24	24.4	1	K-6
PP200T120-ND	1200	200	2500	3.0	3.8	1.0	900	130	100	450	350	0.022	0.093	0.17	24.4	1	K-6
PP300T060-ND	600	300	2500	3.0	3.8	1.0	400	550	190	600	350	0.02	0.066	0.12	24.4	1	K-6
PP300T120-ND	1200	300	2500	2.4	3.2	1.0	800	300	80	500	300	0.02	0.05	0.08	33.7	2	K-6



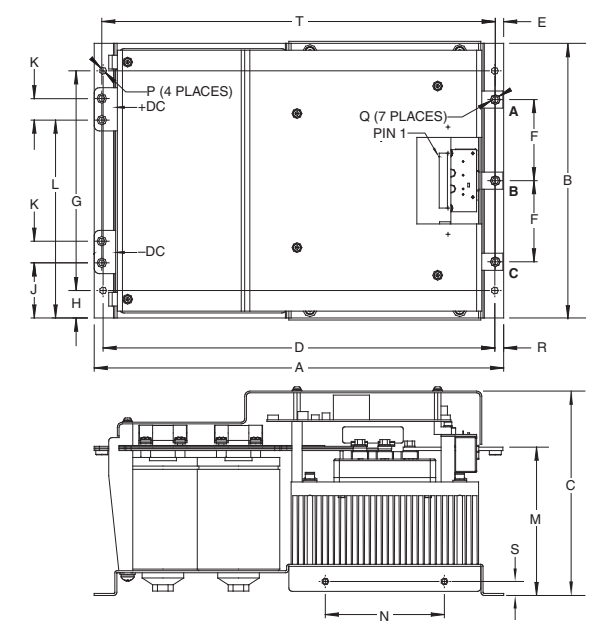
600V and 1200V H-Bridge IGBT Assemblies,

(Refer to device datasheets at www.pwr.com for test conditions.)

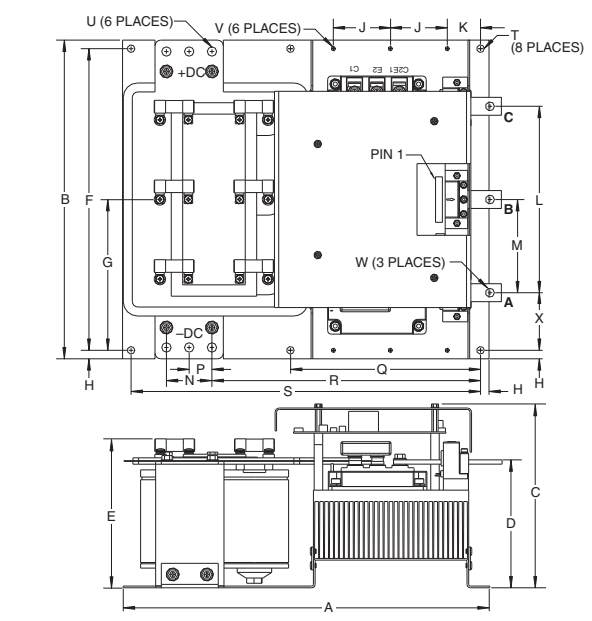
MAXIMUM RATINGS (IGBT Inverter Sector)				ELECTRICAL CHARACTERISTICS (IGBT Part)									THERMAL CHARACTERISTICS			Outline Drawings	
Type	V _{CE(S)} Volts	I _C Amperes	V _{RMS} Isolation Volts	Typ. V _{CE(SAT)} Volts	V _{EC} Volts	I _{CES} mA	V _{CC(Prot)} Volts	Inductive Load Switching Times				R _{th(c-f)} °C/W	IGBT R _{th(j-c)} °C/W	DIODES R _{th(j-c)} °C/W	Weight lbs		
								t _{d(on)} Ns	t _r Ns	t _{d(off)} Ns	t _{f(off)} Ns						
PP100B120-ND	1200	100	2500	2.1	3.8	1.0	900	100	70	400	350	0.022	0.19	0.34	23	3	K-6
PP150B120-ND	1200	150	2500	2.1	3.8	1.0	900	120	120	300	300	0.022	0.13	0.23	23	3	K-6
PP200B120-ND	1200	200	2500	3.0	3.8	1.0	900	130	100	450	350	0.022	0.093	0.17	23	3	K-6
PP400B060-ND	600	400	2500	3.0	3.8	1.0	400	550	180	600	350	0.02	0.046	0.085	32	4	K-7



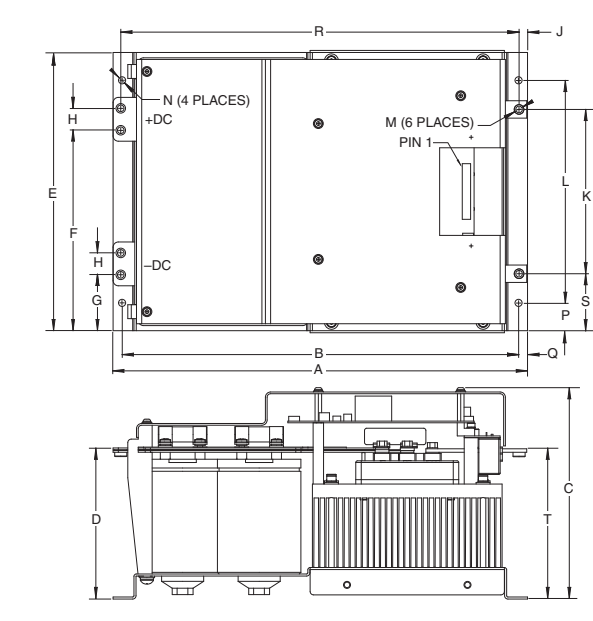
1 PP75T120-ND, PP150T120-ND, PP200T060-ND,
PP200T120-ND, PP300T060-ND



2 PP300T120-ND



3 PP100B120-ND, PP150B120-ND, PP200B120-ND



Dim.	Inches	Millimeters
A	14.9	378.4
B	10.15	257.8
C	7.4	193.0
D	14.25	362.0
E	0.3	7.7
F	2.95	75.0
G	8.0	203.2
H	1.0	25.4
J	2.01	51.0

Dim.	Inches	Millimeters
K	0.79	20.0
L	7.20	183.0
M	5.4	137.2
N	4.33	110.0
P	0.256 Dia.	6.5 Dia.
Q	M6 Metric	M6
R	0.32	8.2
S	0.51	12.9
T	14.32	363.6

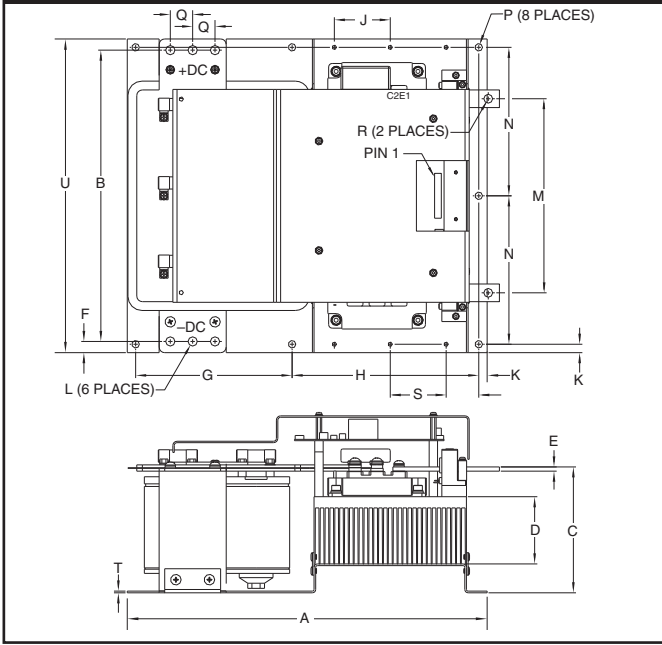
Dim.	Inches	Millimeters
A	16.1	408.9
B	14.0	355.6
C	8.1	205.1
D	5.62	142.7
E	6.54	166.1
F	13.25	336.6
G	6.63	168.3
H	0.38	9.5
J	2.5	63.5
K	1.46	37.1
L	8.19	208.0

Dim.	Inches	Millimeters
M	4.09	104.0
N	2.0	50.8
P	1.0	25.4
Q	8.35	212.09
R	11.8	299.7
S	15.35	389.9
T	0.335 Dia.	8.5 Dia.
U	0.413 Dia.	10.5 Dia.
V	M5 Metric	M5
W	0.394 Dia.	10.0 Dia.
X	2.53	64.3

Dim.	Inches	Millimeters
A	14.9	378.4
B	14.25	362.0
C	7.6	193.0
D	5.43	138.0
E	10.15	257.8
F	7.2	183.0
G	2.01	51.0
H	0.79	20.0
J	0.3	7.7

Dim.	Inches	Millimeters
K	5.91	150.0
L	8.0	203.2
M	M6 Metric	M6
N	0.256 Dia.	6.5 Dia.
P	1.0	25.4
Q	0.32	8.2
R	14.32	363.6
S	2.05	52.0
T	5.4	137.1

4 PP400B060-ND



Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	16.1	408.9	L	0.41 Dia.	10.5 Dia.
B	13.0	330.2	M	8.66	220.0
C	5.62	142.6	N	6.63	168.3
D	3.0	76.2	P	0.33 Dia.	8.5 Dia.
E	0.19	4.8	Q	1.0	25.4
F	0.5	12.7	R	0.39 Dia.	10.0 Dia.
G	7.0	177.8	S	1.46	37.1
H	8.35	212.1	T	0.07	1.9
J	2.5	63.5	U	14.0	355.6
K	0.38	9.5			