

IGBTs

Applications Include:

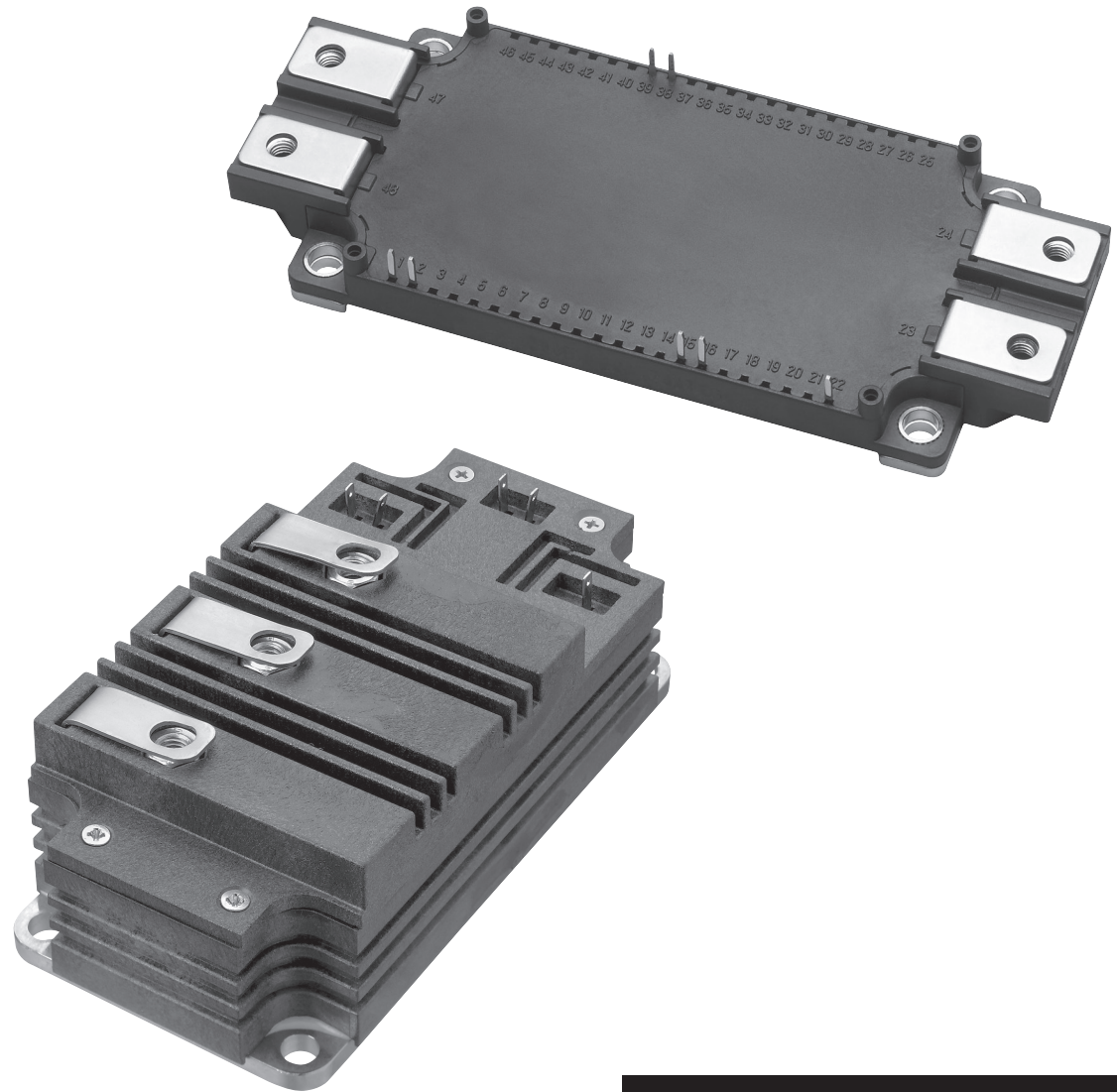
- Hybrid Electric Vehicles (HEV/EV)
- Inverters
- Medical Power Supplies
- Medium Voltage Drives
- Motor Drives
- Servo Drives
- Traction Inverters
- UPS
- Welding

Circuit Configurations:

- Single
- Dual

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VOLTAGE: 1200V TO 4500V
CURRENT: 150A TO 600A

Custom
Modules

IGBT
Assemblies

Assemblies

Fast Recovery
Diode Modules

Thyristor &
Diode
Modules

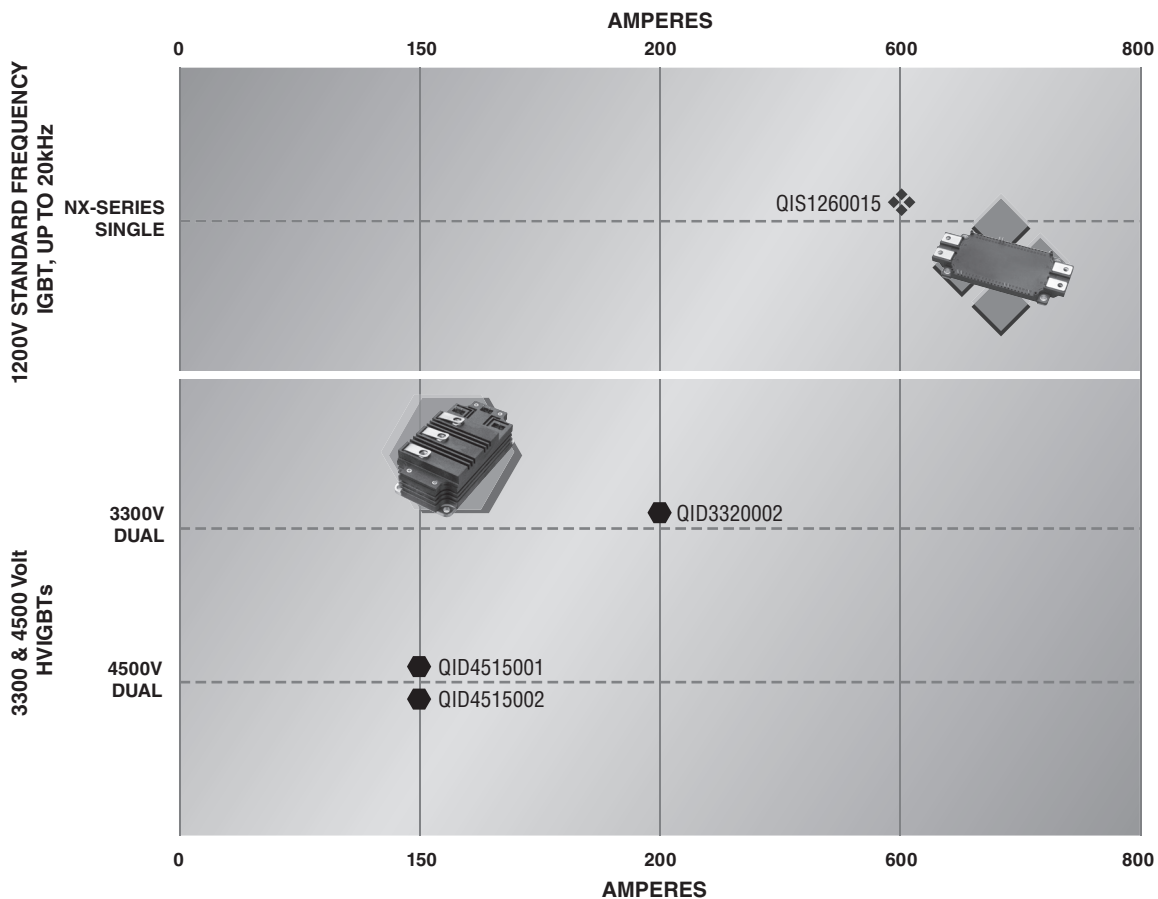
Discrete
Rectifiers

Discrete
Thyristors

SiC
Modules

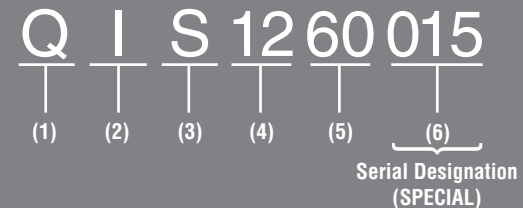
IGBTs

Product Overview



Numbering System

QIS1260015 is a 1200V, 600A Single IGBT Module



- (1) Product Line:
Q = Custom Module
- (2) Device:
I = IGBT
- (3) Configuration:
D = Double / Dual
S = Single
- (4) Voltage:
01 to 99 x 100
- (5) Current:
01 to 99 x 10
- (6) Serial Designation Special:
Numbered from 001 – 999 for each individual combination of 7 previous digits.

1200V Standard Frequency Application IGBTs, Up to 20kHz

NX-Series Single IGBT, (Refer to device datasheets at www.pwr.com for test conditions.)

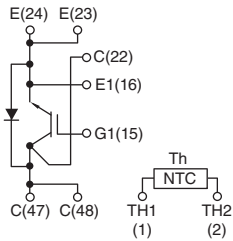
MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS										THERMAL CHARACTERISTICS			Weight Grams	Outline Drawings Number	Page	
Inverter Sector						Static				Dynamic						IGBT Under Chip (Max.) $R_{th(j-c)}$ °C/W	Diode Under Chip (Max.) $R_{th(j-c)}$ °C/W	Contact Thermal Resistance $R_{th(c-f)}$ °C/W				
Type	V_{CES} Volts	$I_C @ T_C'$ Amperes	I_{CM} Amperes	T_C' °C	V_{RMS} Isolation Volts	Test Conditions		Typ.	Max.	$V_{GE} = 0V, V_{CE} = 10V, f = 1mHz$			Inductive Load Switching Times									
						I_C Amperes	V_{GE} Volts	$V_{CE(SAT)}$ Volts	$V_{CE(SAT)}$ Volts	C_{ies} nF	C_{oes} nF	C_{res} nF	$t_{d(on)}$ ns	t_r ns	$t_{d(off)}$ ns	t_f ns						
Single IGBT																						
QIS1260015	1200	600	1200	90	2500	600	15	2.0	2.6	100	9	2.0	660	190	700	600	0.033	0.028	0.015	330	1	A-4

3300 & 4500 Volt HVIGBTs, (Refer to device datasheets at www.pwr.com for test conditions.)

MAXIMUM RATINGS (IGBT Inverter Sector)					ELECTRICAL CHARACTERISTICS										FREE-WHEEL DIODE			THERMAL CHARACTERISTICS			Weight Grams	Outline Drawings Number	Page	
					Static				Dynamic									Interface Per Module $R_{th(j-c)}$ °C/W	IGBT (Max.) $R_{th(j-c)}$ °C/W	Diode (Max.) $R_{th(j-c)}$ °C/W				
Type	V_{CES} Volts	I_C Amperes	I_{CM} Amperes	V_{RMS} Isolation Volts	Test Conditions		Typ.	Max.	$V_{GE} = 0V, V_{CE} = 10V, f = 1mHz$			Inductive Load Switching Times				I_{FM} Amperes	V_{FM} Volts				t_{rr} µs			
					I_C Amperes	V_{GE} Volts	$V_{CE(SAT)}$ Volts	$V_{CE(SAT)}$ Volts	C_{ies} nF	C_{oes} nF	C_{res} nF	$t_{d(on)}$ µs	t_r µs	$t_{d(off)}$ µs	t_f µs									
3300V Dual HVIGBTs																								
QID3320002	3300	200	400	—	200	15	2.7	3.3	23	1.5	0.7	TBD	TBD	TBD	TBD	200	—	0.85	—	0.074	0.11	900	2	A-4
4500V Dual HVIGBT																								
QID4515001	4500	150	300	10200	150	15	3.5	3.9	18	1.33	0.4	1.50	0.50	3.5	1.2	150	—	1.8	—	0.087	0.174	900	2	A-4
QID4515002	4500	150	300	900	150	15	3.8	—	19	1.22	0.55	1.00	0.30	3.6	0.36	300	—	0.7	—	0.083	0.157	900	2	A-4

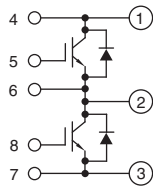
NX-Series Single IGBT

QIS1260015

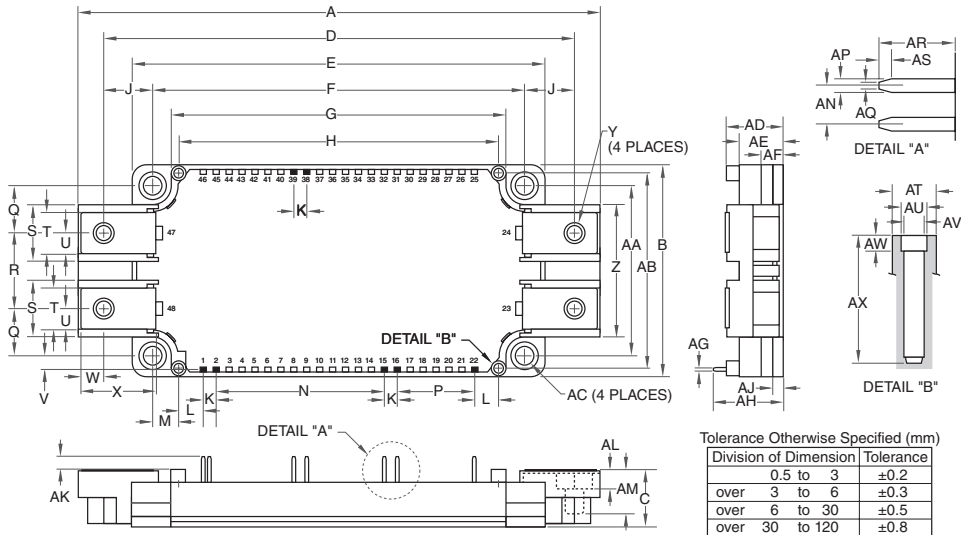


3300 & 4500V HVIGBTs

QID3320002, QID4515001, QID4515002

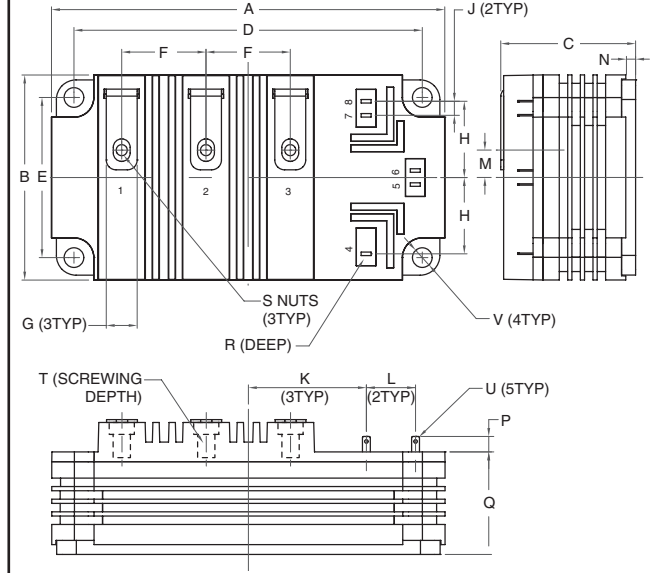


1 QIS1260015



Dim.	Inches	Millimeters	Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	5.98	152.0	S	0.67	17.0	AH	0.81	20.5
B	2.44	62.0	T	0.48	12.0	AJ	0.12	3.0
C	0.67+0.04/-0.02	17.0+1.0/-0.5	U	0.24	6.0	AK	0.14	3.5
D	5.39	137.0	V	0.16	4.2	AL	0.26	6.5
E	4.79	121.7	W	0.37	6.5	AM	0.53	13.5
F	4.33±0.02	110.0±0.5	X	0.83	21.14	AN	0.15	3.81
G	3.89	99.0	Y	M6	M6	AP	0.05	1.15
H	3.72	94.5	Z	1.53	39.0	AQ	0.025	0.65
J	0.53	13.5	AA	1.97±0.02	50.0±0.5	AR	0.29	7.4
K	0.15	3.81	AB	2.26	57.5	AS	0.05	1.2
L	0.28	7.25	AC	0.22 Dia.	5.5 Dia.	AT	0.17 Dia.	4.3 Dia.
M	0.30	7.75	AD	0.67+0.04/-0.02	17.0+1.0/-0.5	AU	0.102 Dia.	2.6 Dia.
N	1.95	49.53	AE	0.51	13.0	AV	0.088 Dia.	2.25 Dia.
P	0.9	22.86	AF	0.27	7.0	AW	0.12	3.0
Q	0.55	14.0	AG	0.03	0.8	AX	0.49	12.5
R	0.87	22.0						

2 QID3320002, QID4515001, QID4515002



Dim.	Inches	Millimeters	Dim.	Inches	Millimeters
A	5.51	140.0	L	0.69±0.01	17.5±0.25
B	2.87	73.0	M	0.38	9.75
C	1.89	48.0	N	0.20	5.0
D	4.88±0.01	124.0±0.25	P	0.22	5.5
E	2.24±0.01	57.0±0.25	Q	1.44	36.5
F	1.18	30.0	R	0.16	4.0
G	0.43	11.0	S	M6 Metric	M6
H	1.07	27.15	T	0.63 Min.	1.6 Min.
J	0.20	5.0	U	0.11 x 0.02	2.8 x 0.5
K	1.65	42.0	V	0.28 Dia.	7.0 Dia.