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IGBT Selection Guide

Common IGBT applications and topologies

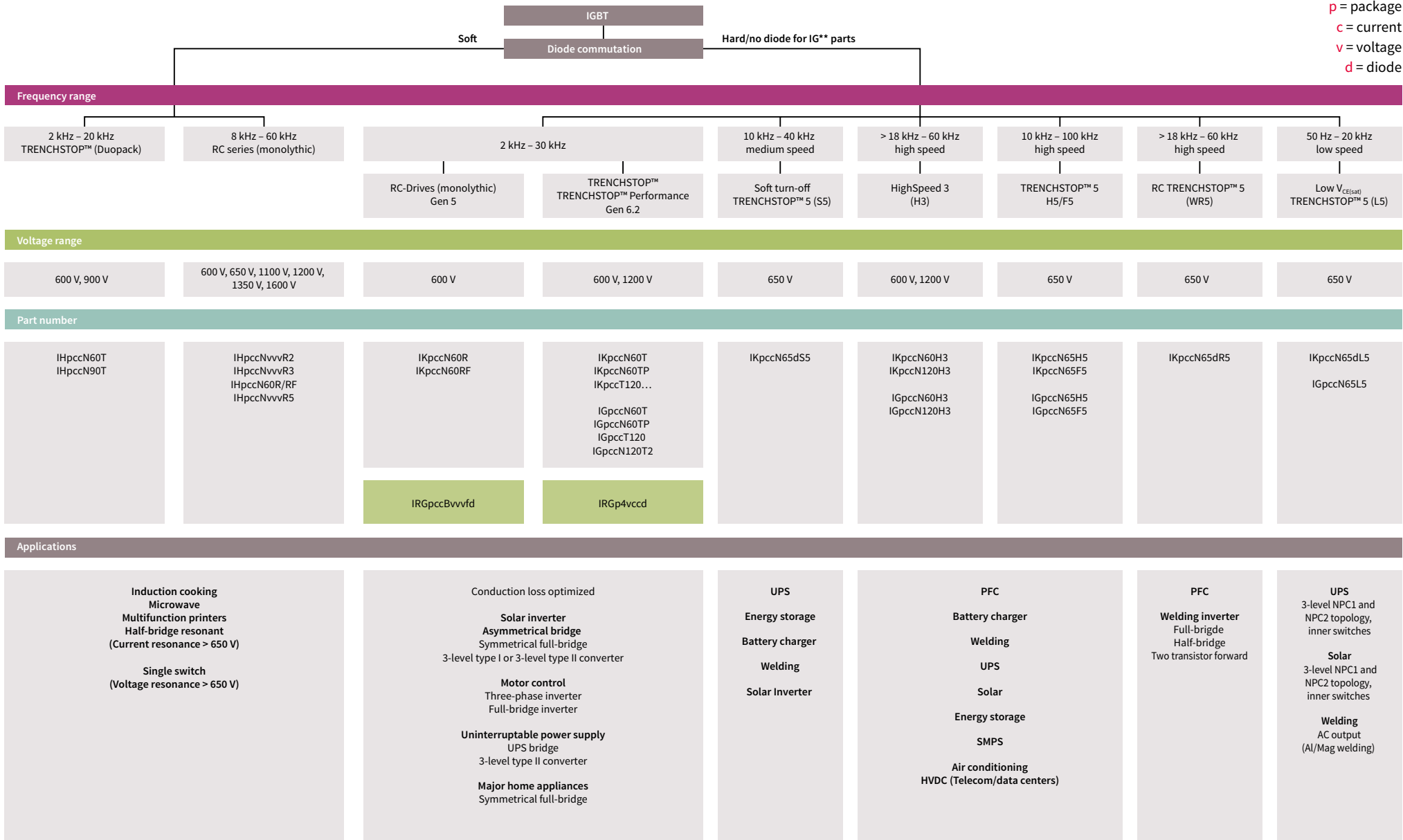


www.infineon.com/igbt



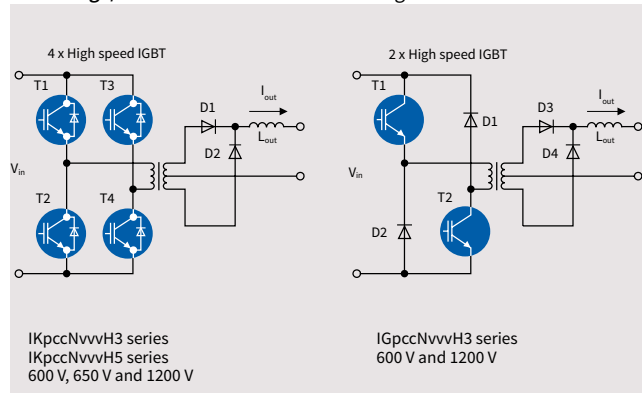
IGBT selection tree

Nomenclature: IGBT
 IKpccNvvvdH3 – IGBT + diode
 IGpccNvvvH3 – Single IGBT
 p = package
 c = current
 v = voltage
 d = diode

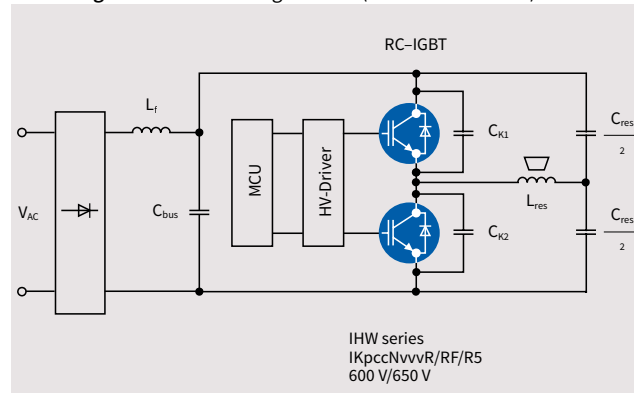


Common IGBT applications and topologies

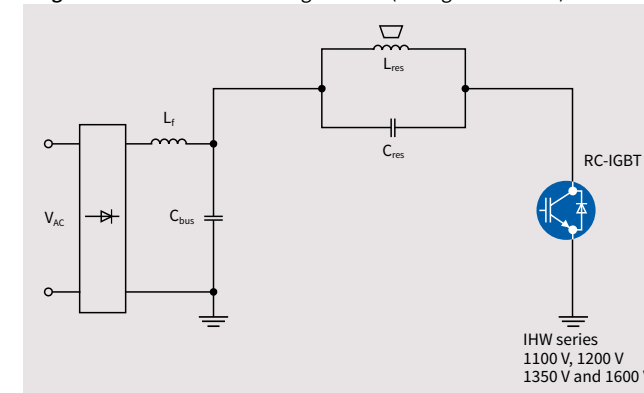
Full-bridge/two transistor forward: welding inverter



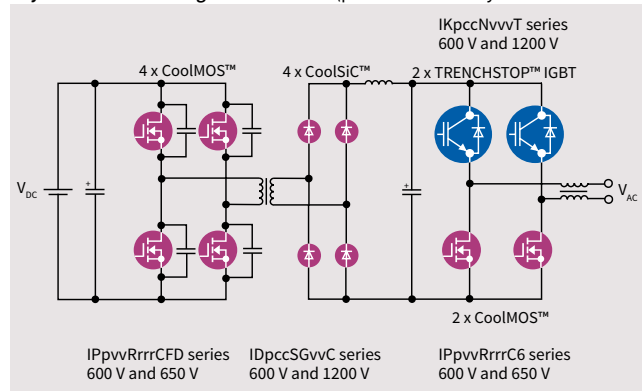
Half-bridge: induction heating inverter (current resonance)



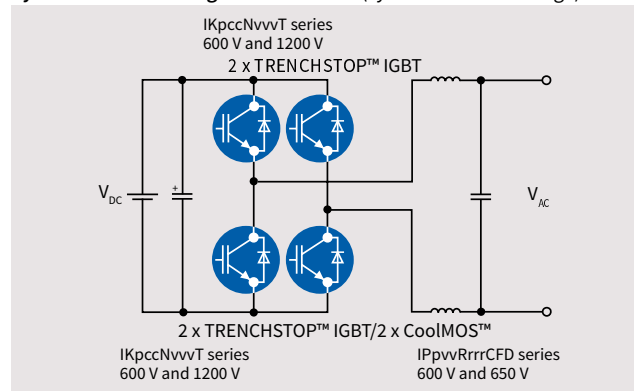
Single switch: induction heating inverter (voltage resonance)



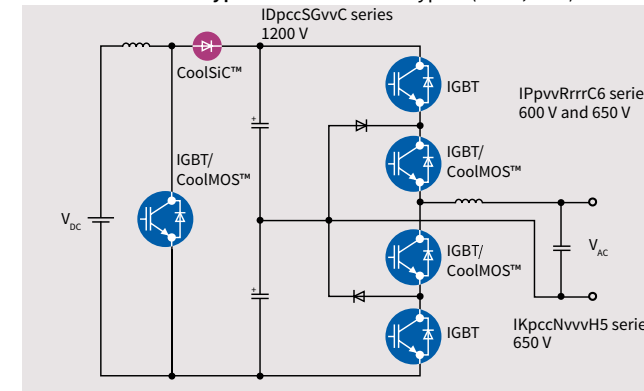
Asymmetrical full-bridge: solar inverter (phase-shift and asymmetrical full-bridge)



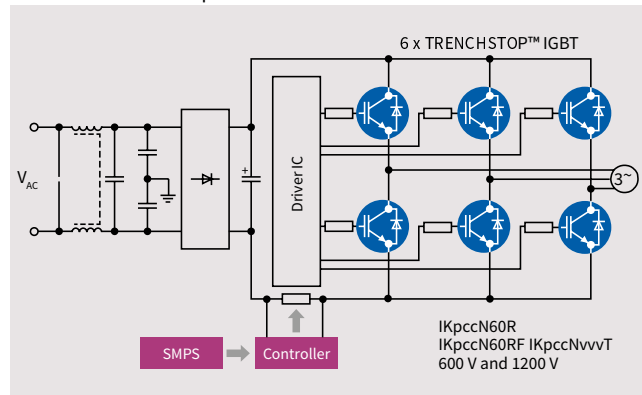
Symmetrical full-bridge: solar inverter (symmetrical full-bridge)



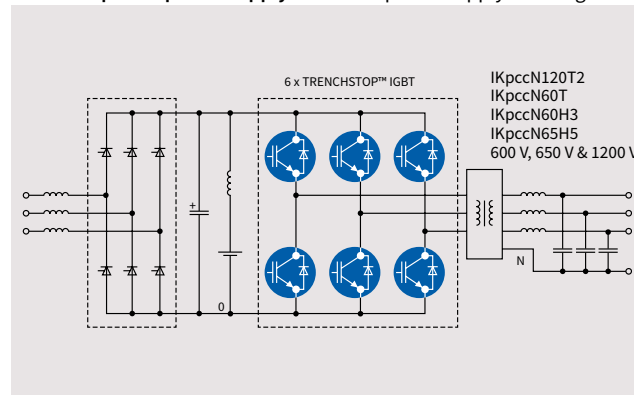
Three level inverter type II: 3-level inverter type II (Solar, UPS)



Motor control: three-phase motor control



Uninterruptable power supply: universal power supply b6-bridge



Nomenclature: IGBT

IKpccNvvvdH3

p = package

c = current

v = voltage

d = diode

Nomenclature: MOSFET

IPpvvRrrrCFD

p = package

c = current

r = resistance

IGBT parts

Other Infineon parts

www.infineon.com/igbt

www.infineon.com/coolmos

www.infineon.com/sic

IGBT with anti-parallel diode

| Product type | V _{CE(max)} [V] | Diode | Switching frequency [F] | Package | Switching Hard/Soft | Series | I _{c(max)} at 100° [A] | V _{CE(sat)} (typ) at 25° [V] | E _{off} (typ) at 25° [mJ] | E _{on} (typ) at 25° [mJ] | Q _{rr} (typ) at 25° [mC] |
|--------------|--------------------------|-------|-------------------------|---------|---------------------|------------------------|---------------------------------|---------------------------------------|------------------------------------|-----------------------------------|-----------------------------------|
| IKW20N60H3 | 600 | Y | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 20 | 1.95 | 0.24 | 0.56 | 390 |
| IKB20N60H3 | 600 | Y | 18 kHz – 60 kHz | TO-263 | Hard | HighSpeed 3 | 20 | 1.95 | 0.24 | 0.45 | 390 |
| IKP20N60H3 | 600 | Y | 18 kHz – 60 kHz | TO-220 | Hard | HighSpeed 3 | 20 | 1.95 | 0.24 | 0.45 | 390 |
| IKW30N60H3 | 600 | Y | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 30 | 1.95 | 0.44 | 0.94 | 320 |
| IKW40N60H3 | 600 | Y | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 40 | 1.95 | 0.58 | 1.1 | 810 |
| IKW50N60H3 | 600 | Y | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 50 | 1.85 | 0.91 | 1.45 | 880 |
| IKW60N60H3 | 600 | Y | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 60 | 1.85 | 1.13 | 2.1 | 1200 |
| IKW75N60H3 | 600 | Y | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 75 | 1.85 | 1.7 | 3 | 1800 |
| IKW15N120H3 | 1200 | Y | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 15 | 2.05 | 0.45 | 1.1 | 800 |
| IKW25N120H3 | 1200 | Y | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 25 | 2.05 | 0.85 | 1.8 | 1200 |
| IKW40N120H3 | 1200 | Y | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 40 | 2.05 | 1.2 | 3.2 | 1900 |
| IKD04N60R | 600 | Y | 2 Hz – 4 kHz | TO-252 | Hard | RC-Drives | 4 | 1.65 | 0.15 | 0.09 | 220 |
| IKD06N60R | 600 | Y | 2 Hz – 4 kHz | TO-252 | Hard | RC-Drives | 6 | 1.65 | 0.22 | 0.11 | 370 |
| IKD10N60R | 600 | Y | 2 Hz – 4 kHz | TO-252 | Hard | RC-Drives | 10 | 1.65 | 0.38 | 0.21 | 560 |
| IKD15N60R | 600 | Y | 2 Hz – 4 kHz | TO-252 | Hard | RC-Drives | 15 | 1.65 | 0.53 | 0.37 | 760 |
| IKW30N65WR5 | 650 | Y | >18 kHz – 60 kHz | TO-247 | Hard | RC TRENCHSTOP™ 5 | 30 | 1.40 | 0.14 | 0.63 | 1950 |
| IKW40N65WR5 | 650 | Y | >18 kHz – 60 kHz | TO-247 | Hard | RC TRENCHSTOP™ 5 | 40 | 1.40 | 0.14 | 0.63 | 1950 |
| IKW50N65WR5 | 650 | Y | >18 kHz – 60 kHz | TO-247 | Hard | RC TRENCHSTOP™ 5 | 50 | 1.40 | 0.18 | 0.74 | 2250 |
| IKD03N60RF | 600 | Y | 4 kHz – 30 kHz | TO-252 | Hard | RC-Drives Fast | 2.5 | 2.2 | 0.04 | 0.05 | 60 |
| IKD04N60RF | 600 | Y | 4 kHz – 30 kHz | TO-252 | Hard | RC-Drives Fast | 4 | 2.2 | 0.05 | 0.06 | 90 |
| IKD06N60RF | 600 | Y | 4 kHz – 30 kHz | TO-252 | Hard | RC-Drives Fast | 6 | 2.2 | 0.09 | 0.09 | 160 |
| IKD10N60RF | 600 | Y | 4 kHz – 30 kHz | TO-252 | Hard | RC-Drives Fast | 10 | 2.2 | 0.16 | 0.19 | 270 |
| IKD15N60RF | 600 | Y | 4 kHz – 30 kHz | TO-252 | Hard | RC-Drives Fast | 15 | 2.2 | 0.25 | 0.27 | 420 |
| IHW40N60R | 600 | Y | 8 kHz – 40 kHz | TO-247 | Soft | RC Soft Switching | 40 | 1.65 | 0.75 | - | - |
| IHW40N60RF | 600 | Y | 18 kHz – 60 kHz | TO-247 | Soft | RC Fast Soft Switching | 40 | 1.85 | 0.56 | - | - |
| IHW20N65R5 | 650 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 20 | 1.35 | 0.16 | 0.54 | 1550 |
| IHW40N65R5 | 650 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 40 | 1.35 | 0.37 | 1.10 | 2750 |
| IHW50N65R5 | 650 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 50 | 1.35 | 0.45 | 1.50 | 2750 |
| IHW30N110R3 | 1100 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 30 | 1.55 | 1.15 | - | - |
| IHW15N120R3 | 1200 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 15 | 1.48 | 0.7 | - | - |
| IHW20N120R3 | 1200 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 20 | 1.48 | 0.95 | - | - |
| IHW20N120R5 | 1200 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 20 | 1.55 | 0.75 | - | - |
| IHW25N120R2 | 1200 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 25 | 1.6 | 1.59 | - | - |
| IHW30N120R3 | 1200 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 30 | 1.55 | 1.47 | - | - |
| IHW30N120R2 | 1200 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 30 | 1.65 | 2.4 | - | - |
| IHW40T120 | 1200 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 40 | 1.8 | 3.2 | 3.3 | 1880 |
| IHW40N120R3 | 1200 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 40 | 1.55 | 2.02 | - | - |
| IHW20N135R3 | 1350 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 20 | 1.6 | 1.3 | - | - |
| IHW20N135R5 | 1350 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 20 | 1.65 | 0.95 | - | - |
| IHW30N135R3 | 1350 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 30 | 1.65 | 1.93 | - | - |
| IHW40N135R3 | 1350 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 40 | 1.65 | 2.5 | - | - |
| IHW30N160R2 | 1600 | Y | 8 kHz – 60 kHz | TO-247 | Soft | RC Soft Switching | 30 | 1.8 | 2.53 | - | - |
| IKP04N60T | 600 | Y | 2 kHz – 20 kHz | TO-220 | Hard | TRENCHSTOP™ | 4 | 1.5 | 84 | 61 | 79 |

| | | | | | | | | | | | |
|---------------|------|---|------------------|----------------|------|---------------|------|----------|-----------|-----------|---------|
| IKB06N60T | 600 | Y | 2 kHz – 20 kHz | TO-263 | Hard | TRENCHSTOP™ | 6 | 1.5 | 0.11 | 0.09 | 190 |
| IKP06N60T | 600 | Y | 2 kHz – 20 kHz | TO-220 | Hard | TRENCHSTOP™ | 6 | 1.5 | 0.11 | 0.09 | 190 |
| IKA06N60T | 600 | Y | 2 kHz – 20 kHz | TO-220 FullPAK | Hard | TRENCHSTOP™ | 6.2 | 1.5 | 0.11 | 0.06 | 190 |
| IKA10N60T | 600 | Y | 2 kHz – 20 kHz | TO-220 FullPAK | Hard | TRENCHSTOP™ | 7.2 | 1.5 | 0.27 | 0.16 | 380 |
| IKA15N60T | 600 | Y | 2 kHz – 20 kHz | TO-220 FullPAK | Hard | TRENCHSTOP™ | 8.9 | 1.5 | 0.35 | 0.22 | 240 |
| IKP10N60T | 600 | Y | 2 kHz – 20 kHz | TO-220 | Hard | TRENCHSTOP™ | 18 | 1.5 | 0.27 | 0.16 | 380 |
| IKB10N60T | 600 | Y | 2 kHz – 20 kHz | TO-263 | Hard | TRENCHSTOP™ | 18 | 1.5 | 0.27 | 0.16 | 380 |
| IKB15N60T | 600 | Y | 2 kHz – 20 kHz | TO-263 | Hard | TRENCHSTOP™ | 23 | 1.5 | 0.35 | 0.22 | 240 |
| IKP15N60T | 600 | Y | 2 kHz – 20 kHz | TO-220 | Hard | TRENCHSTOP™ | 23 | 1.5 | 0.35 | 0.22 | 240 |
| IKW20N60T | 600 | Y | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 20 | 1.5 | 0.46 | 0.31 | 310 |
| IKB20N60T | 600 | Y | 2 kHz – 20 kHz | TO-263 | Hard | TRENCHSTOP™ | 20 | 1.5 | 0.46 | 0.31 | 310 |
| IKP20N60T | 600 | Y | 2 kHz – 20 kHz | TO-220 | Hard | TRENCHSTOP™ | 28 | 1.5 | 0.46 | 0.31 | 310 |
| IHW30N60T | 600 | Y | 2 kHz – 20 kHz | TO-247 | Soft | TRENCHSTOP™ | 30 | 1.5 | 0.77 | - | - |
| IKW30N60T | 600 | Y | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 39 | 1.5 | 0.77 | 0.69 | 920 |
| IHW40T60 | 600 | Y | 2 kHz – 20 kHz | TO-247 | Soft | TRENCHSTOP™ | 40 | 1.55 | 0.92 | - | 920 |
| IKW50N60T | 600 | Y | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 50 | 1.5 | 1.4 | 1.2 | 1800 |
| IKW75N60T | 600 | Y | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 75 | 1.5 | 2.5 | 2 | 2400 |
| IKQ100N60T | 600 | Y | 2 kHz – 20 kHz | TO-247PLUS | Hard | TRENCHSTOP™ | 100 | 1.5 | 2.5 | 3.1 | 2800 |
| IKQ120N60T | 600 | Y | 2 kHz – 20 kHz | TO-247PLUS | Hard | TRENCHSTOP™ | 120 | 1.5 | 5.9 | 2 | 3400 |
| IKW08T120 | 1200 | Y | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 8 | 1.7 | 0.7 | 0.67 | 1000 |
| IKW15T120 | 1200 | Y | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 15 | 1.7 | 1.4 | 1.3 | 1900 |
| IKW25T120 | 1200 | Y | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 25 | 1.7 | 2.2 | 2.0 | 2300 |
| IKW40T120 | 1200 | Y | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 40 | 1.7 | 3.2 | 3.3 | 3800 |
| IKW15N120T2 | 1200 | Y | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ 2 | 15 | 1.7 | 0.8 | 1.25 | 1300 |
| IKW25N120T2 | 1200 | Y | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ 2 | 25 | 1.7 | 1.35 | 1.55 | 2050 |
| IKW40N120T2 | 1200 | Y | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ 2 | 40 | 1.75 | 2.05 | 3.2 | 3300 |
| IKA08N65F5/H5 | 650 | Y | 30 kHz – 120 kHz | TO-220 FullPAK | Hard | TRENCHSTOP™ 5 | 6.8 | 1.6/1.65 | 0.02 | 0.07 | 140/130 |
| IKA15N65F5/H5 | 650 | Y | 30 kHz – 120 kHz | TO-220 FullPAK | Hard | TRENCHSTOP™ 5 | 8.5 | 1.6/1.65 | 0.04/0.05 | 0.13/0.12 | 190/200 |
| IKP08N65F5/H5 | 650 | Y | 30 kHz – 120 kHz | TO-220 | Hard | TRENCHSTOP™ 5 | 11 | 1.6/1.65 | 0.02 | 0.07 | 140/130 |
| IKP15N65F5/H5 | 650 | Y | 30 kHz – 120 kHz | TO-220 | Hard | TRENCHSTOP™ 5 | 18 | 1.6/1.65 | 0.04/0.05 | 0.13/0.12 | 190/200 |
| IKP20N65F5/H5 | 650 | Y | 30 kHz – 120 kHz | TO-220 | Hard | TRENCHSTOP™ 5 | 21 | 1.6/1.65 | 0.06 | 0.16/0.17 | 280/270 |
| IKP30N65F5/H5 | 650 | Y | 30 kHz – 120 kHz | TO-220 | Hard | TRENCHSTOP™ 5 | 35 | 1.6/1.65 | 0.07/0.1 | 0.28 | 410 |
| IKP40N65F5/H5 | 650 | Y | 30 kHz – 120 kHz | TO-220 | Hard | TRENCHSTOP™ 5 | 46 | 1.6/1.65 | 0.10/0.12 | 0.36/0.39 | 450 |
| IKW40N65F5/H5 | 650 | Y | 30 kHz – 120 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 46 | 1.6/1.65 | 0.10/0.12 | 0.36/0.39 | 450/450 |
| IKW50N65F5/H5 | 650 | Y | 30 kHz – 120 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 56 | 1.6/1.65 | 0.16/0.18 | 0.49/0.52 | 450/570 |
| IKW50N65EH5 | 650 | Y | 30 kHz – 100 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 50 | 1.65 | 0.5 | 1.50 | 1.10 |
| IKW75N65EH5 | 650 | Y | 30 kHz – 100 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 75 | 1.65 | 0.90 | 2.30 | 1.33 |
| IKZ50N65NH5 | 650 | Y | 30 kHz – 100 kHz | TO-247 4pin | Hard | TRENCHSTOP™ 5 | 50 | 1.65 | 0.12 | 0.33 | 510 |
| IKZ50N65EH5 | 650 | Y | 30 kHz – 100 kHz | TO-247 4pin | Hard | TRENCHSTOP™ 5 | 50 | 1.65 | 0.12 | 0.42 | 840 |
| IKZ75N65NH5 | 650 | Y | 30 kHz – 100 kHz | TO-247 4pin | Hard | TRENCHSTOP™ 5 | 75 | 1.76 | 0.2 | 0.44 | 650 |
| IKZ75N65EH5 | 650 | Y | 30 kHz – 100 kHz | TO-247 4pin | Hard | TRENCHSTOP™ 5 | 75 | 1.76 | 0.2 | 0.63 | 1150 |
| IKW30N65ES5 | 650 | Y | 10 kHz – 40 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 39.5 | 1.35 | 0.32 | 0.56 | 0.83 |
| IKW40N65ES5 | 650 | Y | 10 kHz – 40 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 50 | 1.35 | 0.40 | 0.86 | 1.10 |
| IKW50N65ES5 | 650 | Y | 10 kHz – 40 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 60.5 | 1.35 | 0.55 | 1.23 | 1.25 |
| IKW75N65ES5 | 650 | Y | 10 kHz – 40 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 80 | 1.42 | 0.95 | 2.40 | 1.80 |
| IKW30N65NL5 | 650 | Y | 50 Hz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 62 | 1.05 | 1.35 | 0.56 | 0.48 |
| IKW30N65EL5 | 650 | Y | 50 Hz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 62 | 1.05 | 1.35 | 0.47 | 0.91 |
| IKW75N65EL5 | 650 | Y | 50 Hz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 80 | 1.10 | 3.20 | 1.61 | 1.37 |
| IKZ75N65EL5 | 650 | Y | 50 Hz – 20 kHz | TO-247 4pin | Hard | TRENCHSTOP™ 5 | 100 | 1.10 | 3.20 | 1.57 | 1.30 |

IGBT without anti-parallel diode

| Product type | $V_{CE(max)}$ [V] | Diode | Switching frequency [F] | Package | Switching Hard/Soft | Series | $I_{c(max)}$ at 100° [A] | $V_{CE(sat)}$ (typ) at 25° [V] | E_{off} (typ) at 25° [mJ] | E_{on} (typ) at 25° [mJ] | Q_{rr} (typ) at 25° [mC] |
|---------------|-------------------|-------|-------------------------|----------------|---------------------|-------------------------|--------------------------|--------------------------------|-----------------------------|----------------------------|----------------------------|
| IGA30N60H3 | 600 | N | 18 kHz – 60 kHz | TO-220 FullPAK | Hard | HighSpeed 3 | 11 | 1.95 | 0.44 | 0.73 | n/a |
| IGB20N60H3 | 600 | N | 18 kHz – 60 kHz | TO-263 | Hard | HighSpeed 3 | 20 | 1.95 | 0.24 | 0.45 | n/a |
| IGP20N60H3 | 600 | N | 18 kHz – 60 kHz | TO-220 | Hard | HighSpeed 3 | 20 | 1.95 | 0.24 | 0.45 | n/a |
| IGW20N60H3 | 600 | N | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 20 | 1.95 | 0.24 | 0.56 | n/a |
| IGP30N60H3 | 600 | N | 18 kHz – 60 kHz | TO-220 | Hard | HighSpeed 3 | 30 | 1.95 | 0.44 | 0.73 | n/a |
| IGB30N60H3 | 600 | N | 18 kHz – 60 kHz | TO-263 | Hard | HighSpeed 3 | 30 | 1.95 | 0.44 | 0.73 | n/a |
| IGW30N60H3 | 600 | N | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 30 | 1.95 | 0.44 | 0.94 | n/a |
| IGW40N60H3 | 600 | N | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 40 | 1.95 | 0.58 | 1.1 | n/a |
| IGW50N60H3 | 600 | N | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 50 | 1.85 | 0.91 | 1.45 | n/a |
| IGW60N60H3 | 600 | N | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 60 | 1.85 | 1.13 | 2.1 | n/a |
| IGW75N60H3 | 600 | N | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 75 | 1.85 | 1.7 | 3 | n/a |
| IGW100N60H3 | 600 | N | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 120 | 1.85 | 1.9 | 3.7 | n/a |
| IGW15N120H3 | 1200 | N | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 15 | 2.05 | 0.45 | 1.1 | n/a |
| IGW25N120H3 | 1200 | N | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 25 | 2.05 | 0.85 | 1.8 | n/a |
| IGW40N120H3 | 1200 | N | 18 kHz – 60 kHz | TO-247 | Hard | HighSpeed 3 | 40 | 2.05 | 1.23 | 1.93 | n/a |
| IGD06N60T | 600 | N | 2 kHz – 20 kHz | TO-252 | Hard | TRENCHSTOP™ | 6 | 1.5 | 0.11 | 0.09 | n/a |
| IGP06N60T | 600 | N | 2 kHz – 20 kHz | TO-220 | Hard | TRENCHSTOP™ | 6 | 1.5 | 0.11 | 0.09 | n/a |
| IGB10N60T | 600 | N | 2 kHz – 20 kHz | TO-263 | Hard | TRENCHSTOP™ | 18 | 1.5 | 0.27 | 0.16 | n/a |
| IGP10N60T | 600 | N | 2 kHz – 20 kHz | TO-220 | Hard | TRENCHSTOP™ | 18 | 1.5 | 0.27 | 0.16 | n/a |
| IGB15N60T | 600 | N | 2 kHz – 20 kHz | TO-263 | Hard | TRENCHSTOP™ | 23 | 1.5 | 0.35 | 0.22 | n/a |
| IGP15N60T | 600 | N | 2 kHz – 20 kHz | TO-220 | Hard | TRENCHSTOP™ | 23 | 1.5 | 0.35 | 0.22 | n/a |
| IGB30N60T | 600 | N | 2 kHz – 20 kHz | TO-263 | Hard | TRENCHSTOP™ | 39 | 1.5 | 0.77 | 0.69 | n/a |
| IGW30N60T | 600 | N | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 39 | 1.5 | 0.77 | 0.69 | n/a |
| IGB50N60T | 600 | N | 2 kHz – 20 kHz | TO-263 | Hard | TRENCHSTOP™ | 64 | 1.5 | 1.4 | 1.2 | n/a |
| IGP50N60T | 600 | N | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 64 | 1.5 | 1.4 | 1.2 | n/a |
| IGW50N60T | 600 | N | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 64 | 1.5 | 1.4 | 1.2 | n/a |
| IGW75N60T | 600 | N | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 75 | 1.5 | 2.5 | 2 | n/a |
| IGW15T120 | 1200 | N | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 15 | 1.7 | 1.4 | 1.3 | n/a |
| IGW25T120 | 1200 | N | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 25 | 1.7 | 2.2 | 2 | n/a |
| IGW40T120 | 1200 | N | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 40 | 1.7 | 3.2 | 3.3 | n/a |
| IGW60T120 | 1200 | N | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 60 | 1.9 | 5.2 | 4.3 | n/a |
| IGW08T120 | 1200 | N | 2 kHz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ | 8 | 1.7 | 0.7 | 0.67 | n/a |
| IGP20N65F5/H5 | 650 | N | 30 kHz – 120 kHz | TO-220 | Hard | TRENCHSTOP™ 5 | 21 | 1.6/1.65 | 0.06 | 0.16/0.17 | - |
| IGP40N65F5/H5 | 650 | N | 30 kHz – 120 kHz | TO-220 | Hard | TRENCHSTOP™ 5 | 46 | 1.6/1.65 | 0.10/0.12 | 0.36/0.39 | n/a |
| IGW40N65F5/H5 | 650 | N | 30 kHz – 120 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 46 | 1.6/1.65 | 0.10/0.12 | 0.36/0.39 | n/a |
| IGW50N65F5/H5 | 650 | N | 30 kHz – 120 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 56 | 1.6/1.65 | 0.16/0.18 | 0.49/0.52 | n/a |
| IGW75N65H5 | 650 | N | 30 kHz – 100 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 75 | 1.65 | 0.95 | 2.25 | n/a |
| IGZ50N65H5 | 650 | N | 30 kHz – 100 kHz | TO-247 4pin | Hard | TRENCHSTOP™ 5 | 54 | 1.65 | 0.19 | 0.41 | n/a |
| IGZ75N65H5 | 650 | N | 30 kHz – 100 kHz | TO-247 4pin | Hard | TRENCHSTOP™ 5 | 75 | 1.65 | 0.43 | 0.68 | n/a |
| IGZ100N65H5 | 650 | N | 30 kHz – 100 kHz | TO-247 4pin | Hard | TRENCHSTOP™ 5 | 101 | 1.65 | 0.77 | 0.85 | n/a |
| IGW30N65L5 | 650 | N | 50 Hz – 20 kHz | TO-247 | Hard | TRENCHSTOP™ 5 | 62 | 1.05 | 1.35 | 0.47 | n/a |
| IGW30N60TP | 600 | N | 2 kHz – 30 kHz | TO-247 | Hard | TRENCHSTOP™ Performance | 38 | 1.60 | 0.42 | 0.71 | n/a |

| | | | | | | | | | | | |
|-------------|-----|---|----------------|--------|------|-------------------------|----|------|------|------|------|
| IGW40N60TP | 600 | N | 2 kHz – 30 kHz | TO-247 | Hard | TRENCHSTOP™ Performance | 48 | 1.60 | 0.61 | 1.06 | n/a |
| IGW50N60TP | 600 | N | 2 kHz – 30 kHz | TO-247 | Hard | TRENCHSTOP™ Performance | 61 | 1.60 | 0.85 | 1.53 | n/a |
| IKW30N60DTP | 600 | Y | 2 kHz – 30 kHz | TO-247 | Hard | TRENCHSTOP™ Performance | 38 | 1.60 | 0.42 | 0.71 | 0.45 |
| IKW40N60DTP | 600 | Y | 2 kHz – 30 kHz | TO-247 | Hard | TRENCHSTOP™ Performance | 48 | 1.60 | 0.61 | 1.06 | 0.56 |
| IKW50N60DTP | 600 | Y | 2 kHz – 30 kHz | TO-247 | Hard | TRENCHSTOP™ Performance | 61 | 1.60 | 0.85 | 1.53 | 0.75 |

Gen 5 and Gen 6.2 Discrete IGBTs

| Product type | V _{CE(max)} [V] | Diode | Switching frequency [F] | Package | Switching Hard/Soft | Series | I _{C(max)} at 100° [A] | V _{CE(sat)} (typ) at 25° [V] | E _{off} (typ) at 25° [mJ] | E _{on} (typ) at 25° [mJ] | Q _{rr} (typ) at 25° [mC] |
|--------------|--------------------------|-------|-------------------------|--------------------|---------------------|---------|---------------------------------|---------------------------------------|------------------------------------|-----------------------------------|-----------------------------------|
| IRGR2B60KD | 600 | Y | 8 kHz – 30 kHz | DPAK | Hard | Gen 5 | 3.7 | 1.83 | 0.074 | 0.039 | - |
| IRGR3B60KD2 | 600 | Y | 8 kHz – 30 kHz | DPAK | Hard | Gen 5 | 4.2 | 1.9 | 0.062 | 0.039 | - |
| IRGS4B60K | 600 | N | 8 kHz – 30 kHz | D ² PAK | Hard | Gen 5 | 6.8 | 2.1 | 0.073 | 0.047 | - |
| IRGB4B60K | 600 | N | 8 kHz – 30 kHz | TO-220 | Hard | Gen 5 | 6.8 | 2.1 | 0.073 | 0.047 | - |
| IRGS6B60K | 600 | N | 8 kHz – 30 kHz | D ² PAK | Hard | Gen 5 | 7 | 1.8 | 0.11 | 0.135 | - |
| IRGB6B60K | 600 | N | 8 kHz – 30 kHz | TO-220 | Hard | Gen 5 | 7 | 1.8 | 0.11 | 0.135 | - |
| IRGSL6B60KD | 600 | Y | 8 kHz – 30 kHz | TO-262, TO-251 | Hard | Gen 5 | 7 | 1.8 | 0.11 | 0.135 | - |
| IRGS6B60KD | 600 | Y | 8 kHz – 30 kHz | D ² PAK | Hard | Gen 5 | 7 | 1.8 | 0.11 | 0.135 | - |
| IRGB6B60KD | 600 | Y | 8 kHz – 30 kHz | TO-220 | Hard | Gen 5 | 7 | 1.8 | 0.11 | 0.135 | - |
| IRGIB6B60KD | 600 | Y | 8 kHz – 30 kHz | TO-220 FullPAK | Hard | Gen 5 | 7 | 1.8 | 0.11 | 0.135 | - |
| IRGSL4B60KD1 | 600 | Y | 8 kHz – 30 kHz | TO-262, TO-251 | Hard | Gen 5 | 7.6 | 2.1 | 0.073 | 0.047 | - |
| IRGS4B60KD1 | 600 | Y | 8 kHz – 30 kHz | D ² PAK | Hard | Gen 5 | 7.6 | 2.1 | 0.073 | 0.047 | - |
| IRGS4B60KD1 | 600 | Y | 8 kHz – 30 kHz | TO-220 | Hard | Gen 5 | 7.6 | 2.1 | 0.073 | 0.047 | - |
| IRGR4607D | 600 | Y | 8 kHz – 30 kHz | DPAK | Hard | Gen 6.2 | 7 | 1.75 | 0.14 | 0.062 | - |
| IRGS4607D | 600 | Y | 8 kHz – 30 kHz | D ² PAK | Hard | Gen 6.2 | 7 | 1.75 | 0.14 | 0.062 | - |
| IRGB4607D | 600 | Y | 8 kHz – 30 kHz | TO-220 | Hard | Gen 6.2 | 7 | 1.75 | 0.14 | 0.062 | - |
| IRGIB4607D* | 600 | Y | 8 kHz – 30 kHz | TO-220 FullPAK | Hard | Gen 6.2 | 7 | 1.75 | 0.14 | 0.062 | - |
| IRGR4610D | 600 | Y | 8 kHz – 30 kHz | DPAK | Hard | Gen 6.2 | 10 | 1.7 | 0.056 | 0.122 | - |
| IRGS4610D | 600 | Y | 8 kHz – 30 kHz | D ² PAK | Hard | Gen 6.2 | 10 | 1.7 | 0.056 | 0.122 | - |
| IRGB4610D | 600 | Y | 8 kHz – 30 kHz | TO-220 | Hard | Gen 6.2 | 10 | 1.7 | 0.056 | 0.122 | - |
| IRGIB4610D* | 600 | Y | 8 kHz – 30 kHz | TO-220 FullPAK | Hard | Gen 6.2 | 10 | 1.7 | 0.056 | 0.122 | - |
| IRGS4615D | 600 | Y | 8 kHz – 30 kHz | D ² PAK | Hard | Gen 6.2 | 15 | 1.55 | 0.07 | 0.145 | - |
| IRGB4615D | 600 | Y | 8 kHz – 30 kHz | TO-220 | Hard | Gen 6.2 | 15 | 1.55 | 0.07 | 0.145 | - |
| IRGIB4615D* | 600 | Y | 8 kHz – 30 kHz | TO-220 FullPAK | Hard | Gen 6.2 | 15 | 1.55 | 0.07 | 0.145 | - |
| IRGS4620D | 600 | Y | 8 kHz – 30 kHz | D ² PAK | Hard | Gen 6.2 | 20 | 1.55 | 0.075 | 0.225 | - |
| IRGB4620D | 600 | Y | 8 kHz – 30 kHz | TO-220 | Hard | Gen 6.2 | 20 | 1.55 | 0.075 | 0.225 | - |
| IRGIB4620D | 600 | Y | 8 kHz – 30 kHz | TO-220 FullPAK | Hard | Gen 6.2 | 20 | 1.55 | 0.075 | 0.225 | - |
| IRGP4620D | 600 | Y | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 20 | 1.55 | 0.075 | 0.225 | - |
| IRGP4620D-E | 600 | Y | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 20 | 1.55 | 0.075 | 0.225 | - |
| IRGS4630D | 600 | Y | 8 kHz – 30 kHz | D ² PAK | Hard | Gen 6.2 | 30 | 1.65 | 0.095 | 0.35 | - |
| IRGB4630D | 600 | Y | 8 kHz – 30 kHz | TO-220 | Hard | Gen 6.2 | 30 | 1.65 | 0.095 | 0.35 | - |
| IRGIB4630D | 600 | Y | 8 kHz – 30 kHz | TO-220 FullPAK | Hard | Gen 6.2 | 30 | 1.65 | 0.095 | 0.35 | - |
| IRGP4630D | 600 | Y | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 30 | 1.65 | 0.095 | 0.35 | - |
| IRGP4630D-E | 600 | Y | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 30 | 1.65 | 0.095 | 0.35 | - |
| IRGS4640D | 600 | Y | 8 kHz – 30 kHz | D ² PAK | Hard | Gen 6.2 | 40 | 1.6 | 0.115 | 0.6 | - |
| IRGB4640D | 600 | Y | 8 kHz – 30 kHz | TO-220 | Hard | Gen 6.2 | 40 | 1.6 | 0.115 | 0.6 | - |

Gen 5 and Gen 6.2 Discrete IGBTs

| Product type | $V_{CE(max)}$ [V] | Diode | Switching frequency [F] | Package | Switching Hard/Soft | Series | $I_{C(max)}$ at 100° [A] | $V_{CE(sat)}$ (typ) at 25° [V] | E_{off} (typ) at 25° [mJ] | E_{on} (typ) at 25° [mJ] | Q_{rr} (typ) at 25° [mC] |
|--------------|----------------------|-------|----------------------------|-----------------------|------------------------|---------|--------------------------------|-----------------------------------|--------------------------------|-------------------------------|-------------------------------|
| IRGIB4640D | 600 | Y | 8 kHz – 30 kHz | TO-220 FullPAK | Hard | Gen 6.2 | 40 | 1.6 | 0.115 | 0.6 | - |
| IRGP4640D | 600 | Y | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 40 | 1.6 | 0.115 | 0.6 | - |
| IRGP4640D-E | 600 | Y | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 40 | 1.6 | 0.115 | 0.6 | - |
| IRGP4640 | 600 | N | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 40 | 1.6 | 0.1 | 0.6 | - |
| IRGP4640-E | 600 | N | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 40 | 1.6 | 0.1 | 0.6 | - |
| IRGP4650D | 600 | Y | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 50 | 1.6 | 0.39 | 0.632 | - |
| IRGP4650D-E | 600 | Y | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 50 | 1.6 | 0.39 | 0.632 | - |
| IRGP4660D | 600 | Y | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 60 | 1.65 | 0.625 | 1275 | - |
| IRGP4660D-E | 600 | Y | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 60 | 1.65 | 0.625 | 1275 | - |
| IRGP4690D | 600 | Y | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 90 | 1.7 | 2.465 | 2.155 | - |
| IRGP4690D-E | 600 | Y | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 90 | 1.7 | 2.465 | 2.155 | - |
| IRGPS46160D | 600 | Y | 8 kHz – 30 kHz | TO-247PLUS (Super247) | Hard | Gen 6.2 | 160 | 1.7 | 5.75 | 3.43 | - |
| IRGPS66160D | 600 | Y | 8 kHz – 30 kHz | TO-247PLUS (Super247) | Hard | Gen 6.2 | 160 | 1.7 | 4.47 | 3.43 | - |
| IRGS4715D | 650 | Y | 8 kHz – 30 kHz | D ² PAK | Hard | Gen 6.2 | 15 | 1.55 | 0.2 | 0.09 | - |
| IRGB4715D | 650 | Y | 8 kHz – 30 kHz | TO-220 | Hard | Gen 6.2 | 15 | 1.55 | 0.2 | 0.09 | - |
| IRGP4740D | 650 | Y | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 40 | 1.6 | 0.52 | 0.24 | - |
| IRGP4740D-E | 650 | Y | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 40 | 1.6 | 0.52 | 0.24 | - |
| IRGP4750D | 650 | Y | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 50 | 1.7 | 1.3 | 0.5 | - |
| IRGP4750D-E | 650 | Y | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 50 | 1.7 | 1.3 | 0.5 | - |
| IRGP4760D | 650 | Y | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 60 | 1.65 | 1.7 | 1 | - |
| IRGP4760D-E | 650 | Y | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 60 | 1.65 | 1.7 | 1 | - |
| IRGP4760 | 650 | N | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 60 | 1.65 | 1.7 | 1 | - |
| IRGP4760-E | 650 | N | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 60 | 1.65 | 1.7 | 1 | - |
| IRGP4790D | 650 | Y | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 90 | 1.7 | 2.5 | 2.2 | - |
| IRGP4790D-E | 650 | Y | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 90 | 1.7 | 2.5 | 2.2 | - |
| IRGP4790 | 650 | N | 8 kHz – 30 kHz | TO-247 | Hard | Gen 6.2 | 90 | 1.7 | 2.5 | 2.2 | - |
| IRGP4790-E | 650 | N | 8 kHz – 30 kHz | TO-247 (Long Lead) | Hard | Gen 6.2 | 90 | 1.7 | 2.5 | 2.2 | - |
| IRGPS47160D* | 650 | Y | 8 kHz – 30 kHz | TO-247PLUS (Super247) | Hard | Gen 6.2 | 160 | 1.7 | - | - | - |

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