



# IGBT Selection Guide

Common IGBT applications and topologies

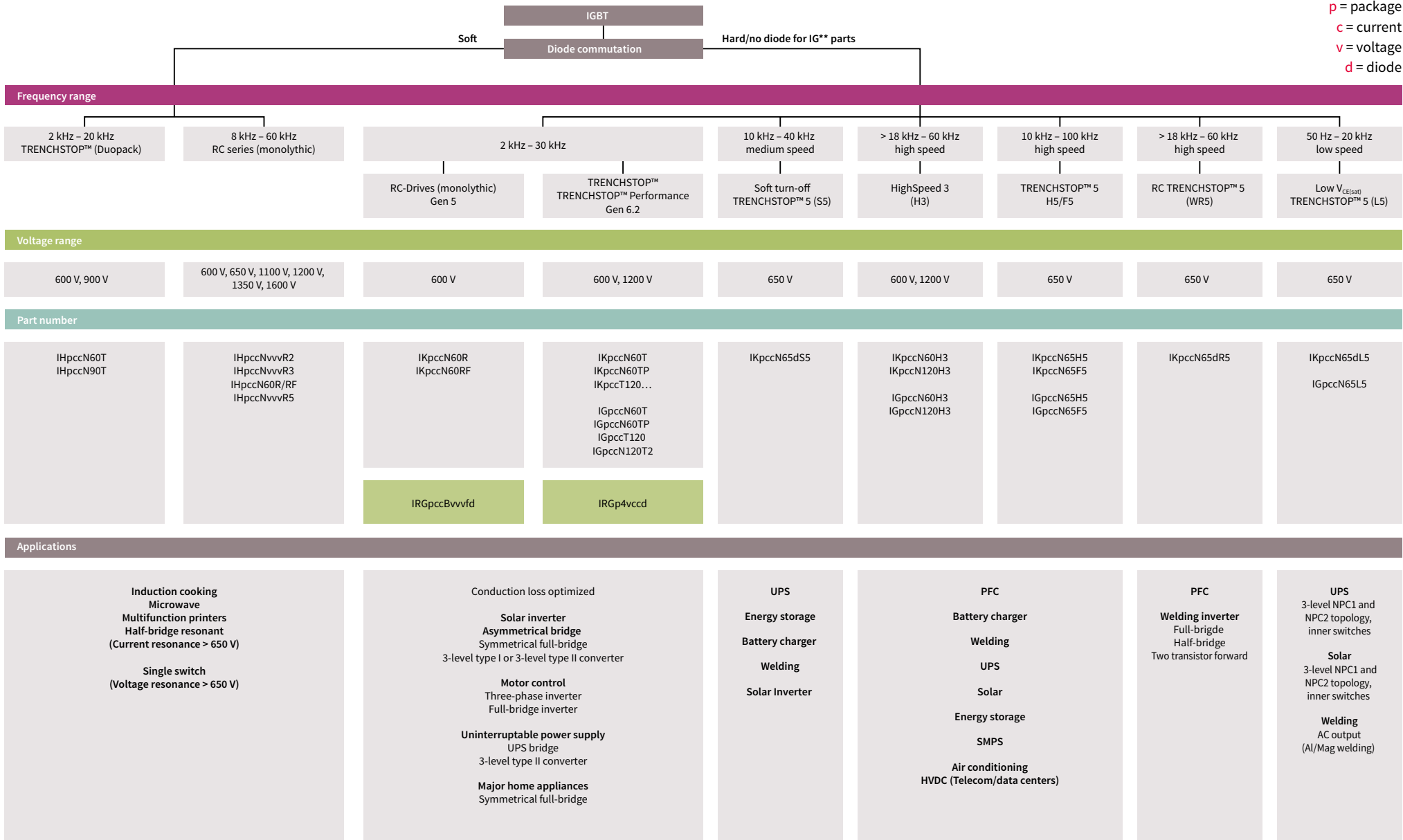


[www.infineon.com/igbt](http://www.infineon.com/igbt)



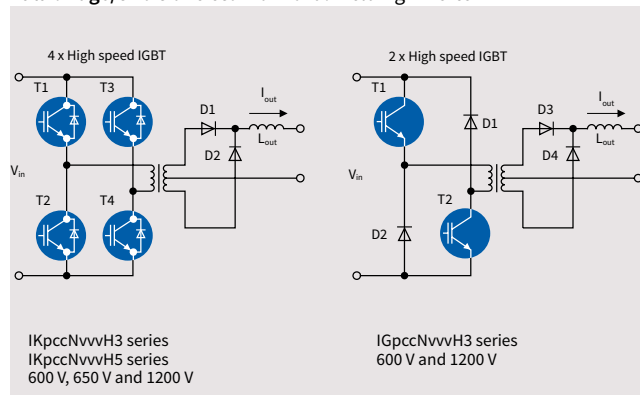
IGBT selection tree

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

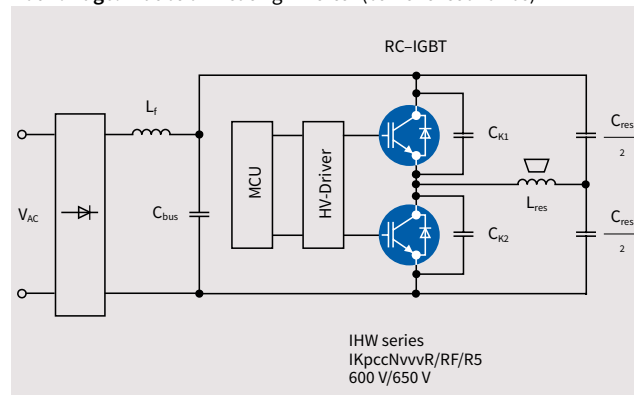


# Common IGBT applications and topologies

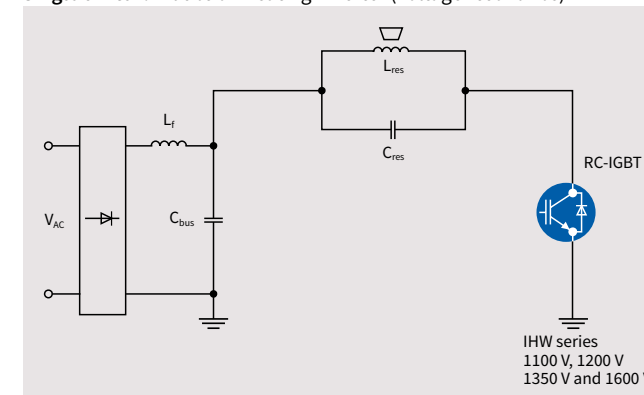
**Full-bridge/two transistor forward: welding inverter**



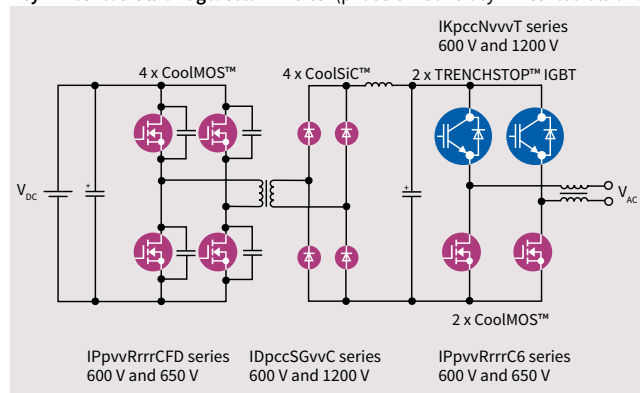
**Half-bridge: induction heating inverter (current resonance)**



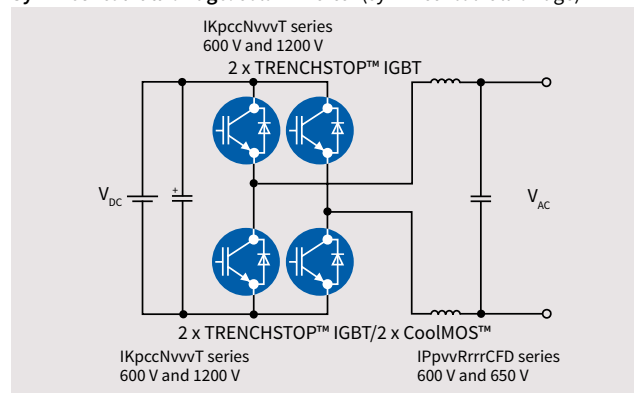
**Single switch: induction heating inverter (voltage resonance)**



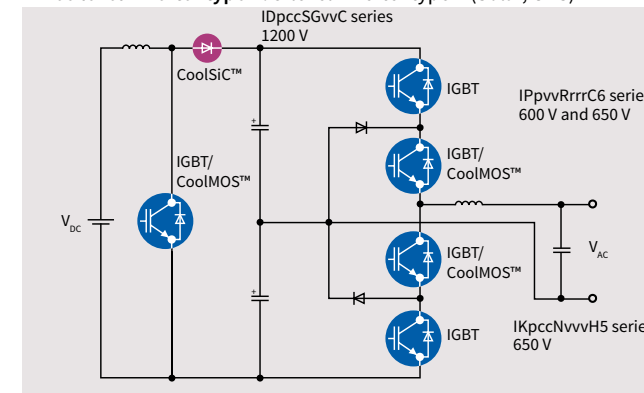
**Asymmetrical full-bridge: solar inverter (phase-shift and asymmetrical full-bridge)**



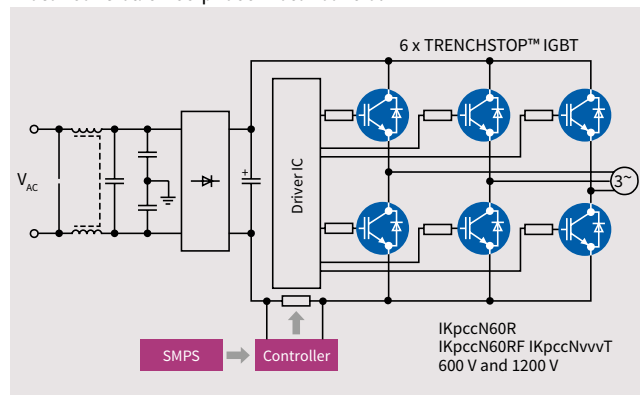
**Symmetrical full-bridge: solar inverter (symmetrical full-bridge)**



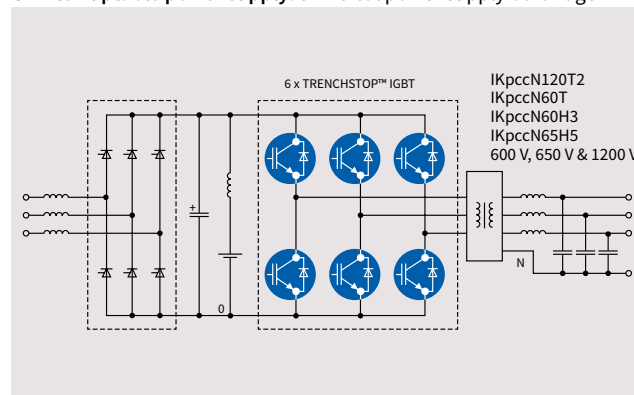
**Three level inverter type II: 3-level inverter type II (Solar, UPS)**



**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

IPpvRrrrCFD

p = package

c = current

r = resistance

IGBT parts

Other Infineon parts

[www.infineon.com/igbt](http://www.infineon.com/igbt)

[www.infineon.com/coolmos](http://www.infineon.com/coolmos)

[www.infineon.com/sic](http://www.infineon.com/sic)

## IGBT with anti-parallel diode

Product type	V <sub>CE(max)</sub> [V]	Diode	Switching frequency [F]	Package	Switching Hard/Soft	Series	I <sub>c(max)</sub> at 100° [A]	V <sub>CE(sat)</sub> (typ) at 25° [V]	E <sub>off</sub> (typ) at 25° [mJ]	E <sub>on</sub> (typ) at 25° [mJ]	Q <sub>rr</sub> (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 <sub>CE(max)</sub> [V]	Diode	Switching frequency [F]	Package	Switching Hard/Soft	Series	I <sub>C(max)</sub> at 100° [A]	V <sub>CE(sat)</sub> (typ) at 25° [V]	E <sub>off</sub> (typ) at 25° [mJ]	E <sub>on</sub> (typ) at 25° [mJ]	Q <sub>rr</sub> (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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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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