Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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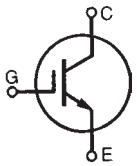
IXYS

ADVANCE TECHNICAL INFORMATION

HiPerFAST™ IGBT
Lightspeed 2™ Series

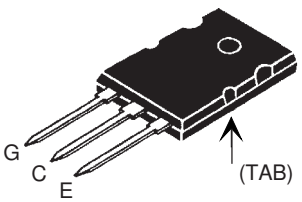
IXGK 120N60C2
IXGX 120N60C2

V_{CES} = 600 V
I_{C110} = 120 A
$V_{CE(sat)}$ = 2.5 V
$t_{fi(typ)}$ = 45 ns

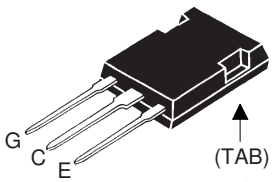


Symbol	Test Conditions	Maximum Ratings	
V_{CES}	T_J = 25°C to 150°C	600	V
V_{CGR}	T_J = 25°C to 150°C; R_{GE} = 1 MΩ	600	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	T_C = 25°C (limited by leads)	75	A
I_{C110}	T_C = 110°C (die limit)	120	A
I_{CM}	T_C = 25°C, 1 ms	500	A
SSOA (RBSOA)	V_{GE} = 15 V, T_{VJ} = 125°C, R_G = 4.7 Ω Clamped inductive load @ $V_{CE} \le 600$ V	I_{CM} = 200	A
P_C	T_C = 25°C	830	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
V_{ISOL}	50/60 Hz, RMS, t = 1minute I_{ISOL} < 1 mA t = 20 seconds	2500 3000	V~ V~
F_C	Clamping force	20..120/4.5..25	N/ib
T_L	Maximum lead temperature for soldering (Note 3)	300	°C
T_{SOLD}	Plastic body for 10 seconds	260	°C
Weight	TO-264 PLUS247	10 5	g g

TO-264(IXGK)



PLUS247(IXGX)



G = Gate C = Collector
E = Emitter Tab = Collector

Symbol	Test Conditions		Characteristic Values (T_J = 25°C unless otherwise specified) Min.	Typ.	Max.	
BV_{CES}	I_C = 1 mA, V_{GE} = 0 V		600			V
$V_{GE(th)}$	I_C = 500 μA, V_{CE} = V_{GE}		3.0		5.0	V
I_{CES}	V_{CE} = V_{CES}				100	μA
	V_{GE} = 0 V	T_J = 125°C			2	mA
I_{GES}	V_{CE} = 0 V, V_{GE} = ± 20 V				± 200	nA
$V_{CE(sat)}$	I_C = I_T, V_{GE} = 15 V	T_J = 25°C		2.1	2.5	V
	Note 1	T_J = 125°C		2.0		V

Features
- Very high frequency IGBT
- Square RBSOA
- High current handling capability
- MOS Gate turn-on
  - drive simplicity

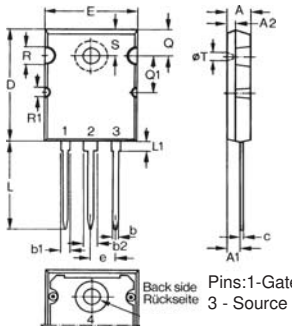
Applications
- Uninterruptible power supplies (UPS)
- Switched-mode and resonant-mode power supplies
- AC motor speed control
- DC servo and robot drives
- DC choppers

Advantages
- High power density
- Very fast switching speeds for high frequency applications
- High power surface mountable packages

Symbol	Test Conditions (T_J = 25°C unless otherwise specified)	Characteristic Values Min.	Typ.	Max.	
g_{fs}	I_C = 60 A; V_{CE} = 10 V, Note 1	50	75		S
C_{ies}			11		nF
C_{oes}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		680		pF
C_{res}			190		pF
Q_g			350		nC
Q_{ge}	$I_C = I_T$, V_{GE} = 15 V, V_{CE} = 0.5 V_{CES}		72		nC
Q_{gc}			131		nC
$t_{d(on)}$			18		ns
t_{ri}	**Inductive load, T_J = 25°C**		25		ns
$t_{d(off)}$	I_C = 80 A, V_{GE} = 15 V		95	150	ns
t_{fi}	V_{CE} = 400 V, $R_G = R_{off}$ = 1.0 Ω		45		ns
E_{off}			0.9	1.6	mJ
$t_{d(on)}$			18		ns
t_{ri}	**Inductive load, T_J = 125°C**		25		ns
E_{on}	I_C = 80 A, V_{GE} = 15 V		1.6		mJ
$t_{d(off)}$	V_{CE} = 400 V, $R_G = R_{off}$ = 1.0 Ω		130		ns
t_{fi}			85		ns
E_{off}			1.5		mJ
R_{thJC}				0.15	K/W
R_{thJC}			0.15		K/W

Note: 1. Pulse test, t ≤ 300 µs, duty cycle ≤ 2 %;
2. Test current I_T = 100 A;
3. Temperature measured at 1.6 mm (0.062 in.) from case for 10 seconds

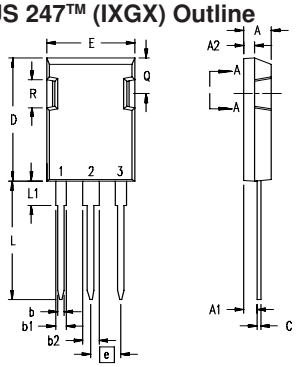
TO-264 AA Outline



Pins:1-Gate 2- Drain
3 - Source Tab - Drain

Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	4.82	5.13	.190	.202
A1	2.54	2.89	.100	.114
A2	2.00	2.10	.079	.083
b	1.12	1.42	.044	.056
b1	2.39	2.69	.094	.106
b2	2.90	3.09	.114	.122
c	0.53	0.83	.021	.033
D	25.91	26.16	1.020	1.030
E	19.81	19.96	.780	.786
e	5.46 BSC		.215 BSC	
J	0.00	0.25	.000	.010
K	0.00	0.25	.000	.010
L	20.32	20.83	.800	.820
L1	2.29	2.59	.090	.102
P	3.17	3.66	.125	.144
Q	6.07	6.27	.239	.247
Q1	8.38	8.69	.330	.342
R	3.81	4.32	.150	.170
R1	1.78	2.29	.070	.090
S	6.04	6.30	.238	.248
T	1.57	1.83	.062	.072

PLUS 247™ (IXGX) Outline



Terminals: 1 - Gate
2 - Drain (Collector)
3 - Source (Emitter)
4 - Drain (Collector)

Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	4.83	5.21	.190	.205
A_1	2.29	2.54	.090	.100
A_2	1.91	2.16	.075	.085
b	1.14	1.40	.045	.055
b_1	1.91	2.13	.075	.084
b_2	2.92	3.12	.115	.123
C	0.61	0.80	.024	.031
D	20.80	21.34	.819	.840
E	15.75	16.13	.620	.635
e	5.45 BSC		.215 BSC	
L	19.81	20.32	.780	.800
L1	3.81	4.32	.150	.170
Q	5.59	6.20	.220	0.244
R	4.32	4.83	.170	.190