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!

Contact us

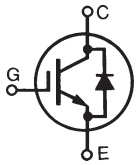
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

High Voltage IGBT with Diode

(Electrically Isolated Back Surface)

IXGR 35N120BD1

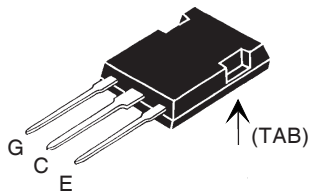
V_{CES} = 1200 V
I_{C25} = 54 A
$V_{CE(sat)}$ = 3.5 V
$t_{fi(typ)}$ = 160 ns



Symbol	Test Conditions	Maximum Ratings	
V_{CES}	T_J = 25°C to 150°C	1200	V
V_{CGR}	T_J = 25°C to 150°C; R_{GE} = 1 MΩ	1200	V
V_{GES}	Continuous	±20	V
V_{GEM}	Transient	±30	V
I_{C25}	T_C = 25°C	54	A
I_{C110}	T_C = 110°C	28	A
I_{F110}	T_C = 110°C	8	A
I_{CM}	T_C = 25°C, 1 ms	200	A
SSOA (RBSOA)	V_{GE} = 15 V, T_J = 125°C, R_G = 10 Ω Clamped inductive load	I_{CM} = 120 @0.8 V_{CES}	A
P_C	T_C = 25°C	250	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
V_{ISOL}	50/60 Hz, RMS, t = 1 min I_{SOL} = 1mA, t = 1 s	2500 3000	V~ V~
F_C	Mounting force	22...130/5...29	N/lb
	Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s	300	°C
Weight		6	g

Symbol	Test Conditions (T_J = 25°C, unless otherwise specified)		min.	typ.	max.	
$V_{GE(th)}$	I_C = 250 µA, V_{CE} = V_{GE}		2.5		5.0	V
I_{CES}	V_{CE} = V_{CES} V_{GE} = 0 V	T=25°C T=125°C			50 250	µA µA
I_{GES}	V_{CE} = 0 V, V_{GE} = ±20 V				±100	nA
$V_{CE(sat)}$	I_C = 35A, V_{GE} = 15 V Note 2			2.8	3.5	V

ISOPLUS247 (IXGR)



G = Gate C = Collector
E = Emitter TAB = Electrically Isolated

Features

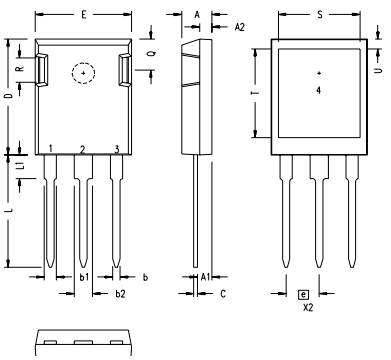
- Silicon chip on DCB substrate
  - High power dissipation
  - Isolated mounting surface
  - 2500V electrical isolation
- IGBT and anti-parallel FRED for resonant power supplies
  - Induction heating
  - Rice cookers
- MOS Gate turn-on
  - drive simplicity
- Fast Recovery Expitaxial Diode (FRED)
  - soft recovery with low I_{RM}

Advantages

- Saves space (two devices in one package)
- Easy to mount
- Reduces assembly time and cost

Symbol	Test Conditions (T_J = 25°C, unless otherwise specified)	Characteristic Values min.	typ.	max.	
g_{fs}	I_C = 35A; V_{CE} = 10 V, Note 2.	28	38		S
C_{ies}			2300		pF
C_{oes}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		190		pF
C_{res}			80		pF
Q_g			140		nC
Q_{ge}	I_C = 40A, V_{GE} = 15 V, V_{CE} = 0.5 V_{CES}		20		nC
Q_{gc}			50		nC
$t_{d(on)}$	**Inductive load, T_J = 25°C**		40		ns
t_{ri}	I_C = 35 A; V_{GE} = 15 V		50		ns
E_{on}	V_{CE} = 0.8 V_{CES}; R_G = R_{off} = 3 Ω		0.9		mJ
$t_{d(off)}$	Note 1.		270	500	ns
t_{fi}			160	300	ns
E_{off}			3.8	7.0	mJ
$t_{d(on)}$	**Inductive load, T_J = 125°C**		45		ns
t_{ri}	I_C = 35A; V_{GE} = 15 V		60		ns
E_{on}	V_{CE} = 0.8 V_{CES}; R_G = R_{off} = 3 Ω		1.9		mJ
$t_{d(off)}$	Note 1		380		ns
t_{fi}			400		ns
E_{off}			8.0		mJ
R_{thJC}				0.5	K/W
R_{thCK}			0.25		K/W

ISOPLUS247 Outline



SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.190	.205	4.83	5.21
A1	.090	.100	2.29	2.54
A2	.075	.085	1.91	2.16
b	.045	.055	1.14	1.40
b1	.075	.084	1.91	2.13
b2	.115	.123	2.92	3.12
C	.024	.031	0.61	0.80
D	.819	.840	20.80	21.34
E	.620	.635	15.75	16.13
e	.215 BSC		5.45 BSC	
L	.780	.800	19.81	20.32
L1	.150	.170	3.81	4.32
Q	.220	.244	5.59	6.20
R	.170	.190	4.32	4.83
S	.520	.540	13.21	13.72
T	.620	.640	15.75	16.26
U	.065	.080	1.65	2.03

1 – GATE
2 – DRAIN (COLLECTOR)
3 – SOURCE (EMITTER)
4 – NO CONNECTION

NOTE: This drawing will meet all dimensions requirement of JEDEC outline TO-247AD except screw hole.

Reverse Diode (FRED)

Symbol	Test Conditions (T_J = 25°C, unless otherwise specified)	Characteristic Values min.	typ.	max.	
V_F	I_F = 10 A, V_{GE} = 0 V			3.3	V
	I_F = 10 A, V_{GE} = 0 V, T_J = 125°C			2.2	V
I_{RM}	I_F = 10 A; -di_F/dt = 100 A/µs, V_R = 100 V		4.0		A
t_{rr}	V_{GE} = 0 V; T_J = 125°C		190		ns
t_{rr}	I_F = 1 A; -di_F/dt = 100 A/µs; V_R = 30 V, V_{GE} = 0 V		40		ns
R_{thJC}				2.5	K/W

Notes: 1. Switching times may increase for V_{CE} (Clamp) > 0.8 • V_{CES}, higher T_J or increased R_G.
2. Pulse test, t ≤ 300 µs, duty cycle d ≤ 2 %.