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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.

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LIXYS

IXGR 24N60CD1



600 C25 2.5 V_{CE(sat)}=

ISOPLUS247™ (Electrically Isolated Back Surface)

HiPerFAST[™]IGBT



Preliminary data sheet

with **Diode**

Symbol	Test Conditions	Maximum Ratings		
V _{ces}	T _J = 25°C to 150°C	600	V	
V _{CGR}	$T_{J} = 25^{\circ}C$ to $150^{\circ}C$; $R_{GE} = 1 M\Omega$	600	V	
V _{ges}	Continuous	±20	V	
V _{GEM}	Transient	±30	V	
I _{C25}	$T_{c} = 25^{\circ}C$	42	Α	
I _{C90}	$T_{c} = 90^{\circ}C$	22	А	
I _{CM}	$T_c = 25^{\circ}C, 1 \text{ ms}$	80	Α	
SSOA (RBSOA)	$V_{_{GE}}$ = 15 V, T _{vJ} = 125°C, R _G = 22 Ω Clamped inductive load, L = 100 μ H	I _{CM} = 48 @ 0.8 V _{CES}	А	
P _c	$T_c = 25^{\circ}C$	80	W	
Τ,		-55 +150	°C	
T _{JM}		150	°C	
T _{stg}		-55 +150	°C	
Maximum le 1.6 mm (0.0	ead temperature for soldering 062 in.) from case for 10 s	300	°C	
V _{ISOL}		2500	V	
Weight	TO-247	6	g	







Isolated back surface*

V

Α

V

G = Gate. E = Emitter

C = Collector

* Patent pending

Features

- Silicon chip on Direct-Copper-Bond substrate
 - High power dissipation
 - Isolated mounting surface
 - 2500V electrical isolation
- Low drain to tab capacitance(<35pF)
- Low R_{DS (on)} HDMOSTM process
- Rugged polysilicon gate cell structure
- Unclamped Inductive Switching (UIS) rated
- Fast intrinsic rectifier
- Low gate charge process

Applications

- DC-DC converters
- Battery chargers
- Switched-mode and resonant-mode power supplies
- DC choppers
- AC motor control

Advantages

- Easy assembly
- Space savings
- High power density

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Symbol	Test ConditionsCha $(T_J = 25^{\circ}C, unless cmin.$	aracteristic Values otherwise specified) typ. max.		
9 _{fs}	$ I_{\rm c} = I_{\rm T}; V_{\rm CE} = 10 \text{ V}, \qquad 9 $	17		S
C _{ies} C	$V_{05} = 25 V, V_{05} = 0 V, f = 1 MHz$	1500 170		pF pF
C _{res}	J CE / GE /	40		pF
Q _g)	55		nC
\mathbf{Q}_{ge}	$I_{c} = I_{T}, V_{GE} = 15 V, V_{CE} = 0.5 V_{CES}$	13		nC
Q _{gc}	J	17		nC
t _{d(on)}	Inductive load, $T_J = 25^{\circ}C$	15		ns
t _{ri}	$I_{c} = I_{T}, V_{GE} = 15 \text{ V}, L = 300 \mu\text{H}$	25		ns
t _{d(off)}	$V_{CE} = 0.8 \cdot V_{CES}, R_G = R_{off} = 18 \Omega$	75	140	ns
t _{fi}	Remarks: Switching times may increase for V (Clamp) $> 0.8 \cdot V$ higher T or	60	110	ns
E _{off}	increased R_{g}	0.24	0.36	mJ
t _{d(on)}	\int Inductive load, T = 125°C	15		ns
t _{ri}	$I_{-} = I_{-}, V_{} = 15 \text{ V}, L = 300 \mu\text{H}$	25		ns
E _{on}	$V_{cr} = 0.8 \cdot V_{cree}, B_c = B_{cree} = 18 \Omega$	1		mJ
t _{d(off)}	Remarks: Switching times may increase for V_{CE} (Clamp) > 0.8 • V_{CES} , higher T _J or	130		ns
t _{ri}		110		ns
E _{off}	J increased R _g	0.6		mJ
R _{thJC}			0.157	K/W
$\mathbf{R}_{\mathrm{thCK}}$		0.15		K/W

ISOPLUS 247 OUTLINE c 4 5 Ţ e b2 _____ X2 1 Gate, 2 Drain (Collector) 3 Source (Emitter) 4 no connection Dim. Millimeter Inches Min. Max. Min. Max. 5.21 .190 .205 4.83 A A, 2.29 2.54 .090 .100 A 1.91 2.16 .075 .085 b 1.14 1.40 .045 .055 b, 1.91 2.13 .075 .084 b₂ 2.92 .115 3.12 .123 С 0.61 0.80 .031 .024 D 20.80 21.34 .819 .840 Е 15.75 16.13 .620 .635 5.45 BSC .215 BSC е L 19.81 20.32 .780 .800 L1 3.81 4.32 .150 .170 Q 5.59 6.20 .220 .244 R 4.32 4.83 .170 .190

Revers	se Diode (FRED) Cl	Characteristic Value			
Symbo	DI Test Conditions min	typ.	max.	,incu)	
V _F	$I_{F} = I_{T}, V_{GE} = 0 V,$ Pulse test, t ≤ 300 µs, duty cycle d ≤ 2 % $T_{J} = 25^{\circ}C$		1.6 2.5	V V	
I _{RM}	$I_{F} = I_{T}, V_{GE} = 0 \text{ V}, -di_{F}/dt = 100 \text{ A}/\mu\text{s}$ $V_{R} = 100 \text{ V} T_{J} = 100^{\circ}\text{C}$ $I_{F} = 1 \text{ A}; -di/dt = 100 \text{ A}/\mu\text{s}; V_{R} = 30 \text{ V} T_{J} = 25^{\circ}\text{C}$	6 100 25		A ns ns	
$\mathbf{R}_{\mathrm{thJC}}$			1.65	K/W	

Notes: 1. $I_{T} = 24A$

2. See IXGH24N60CD1 data sheet for characteristic curves.

IXYS reserves the right to change limits, test conditions, and dimensions.