



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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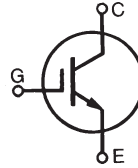
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



High Voltage IGBT

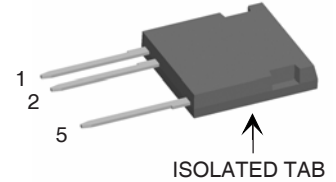
IXGF32N170

(Electrically Isolated Tab)



$$\begin{aligned} V_{CES} &= 1700V \\ I_{C110} &= 19A \\ V_{CE(sat)} &\leq 3.5V \\ t_{fi(typ)} &= 250ns \end{aligned}$$

ISOPLUS i4-Pak™



1 = Gate
2 = Emitter
5 = Collector

Symbol	Test Conditions	Maximum Ratings	
V_{CES}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	1700	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	$T_C = 25^\circ\text{C}$	44	A
I_{C110}	$T_C = 110^\circ\text{C}$	19	A
I_{CM}	$T_C = 25^\circ\text{C}, 1\text{ms}$	200	A
SSOA	$V_{GE} = 15V, T_{VJ} = 125^\circ\text{C}, R_G = 2.7\Omega$	$I_{CM} = 70$	A
(RBSOA)	Clamped Inductive Load	@ $0.8 \cdot V_{CES}$	
t_{sc}	$T_C = 125^\circ\text{C}, V_{CE} = 1200V, V_{GE} = 15V, R_G = 10\Omega$	10	μs
P_C	$T_C = 25^\circ\text{C}$	200	W
T_J		-55 ... +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-55 ... +150	$^\circ\text{C}$
T_L	1.6 mm (0.062 in.) from Case for 10s	300	$^\circ\text{C}$
T_{SOLD}	Plastic Body for 10s	260	$^\circ\text{C}$
F_C	Mounting Force	20..120 / 4.5..27	Nm/lb.in.
V_{ISOL}	50/60Hz, 1 minute	2500	V~
Weight		5	g

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{CES}	$I_C = 1\text{mA}, V_{GE} = 0V$	1700		V
$V_{GE(th)}$	$I_C = 250\mu\text{A}, V_{CE} = V_{GE}$	3.0		5.0 V
I_{CES}	$V_{CE} = 0.8 \cdot V_{CES}, V_{GE} = 0V$, Note 2 $T_J = 125^\circ\text{C}$			50 μA 1 mA
I_{GES}	$V_{CE} = 0V, V_{GE} = \pm 20V$			± 100 nA
$V_{CE(sat)}$	$I_C = 32A, V_{GE} = 15V$, Note 1 $T_J = 125^\circ\text{C}$	2.7 3.3	3.5	V V

Features

- Electrically Isolated Tab
- High Current Handling Capability
- Rugged NPT Structure
- Molding Epoxies Meet UL 94 V-0 Flammability Classification

Applications

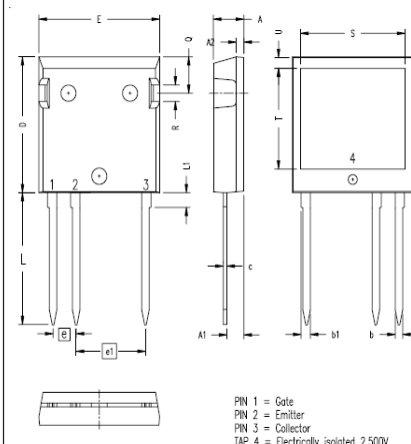
- Capacitor Discharge & Pulser Circuits
- AC Motor Drives
- Uninterruptible Power Supplies (UPS)
- Switched-Mode and Resonant-Mode Power Supplies

Advantages

- High Power Density
- Suitable for Surface Mounting

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$I_C = 32\text{A}$, $V_{CE} = 10\text{V}$, Note 1	20	30	S
C_{ies}	$V_{CE} = 25\text{V}$, $V_{GE} = 0\text{V}$, $f = 1\text{MHz}$		4290	pF
C_{oes}			167	pF
C_{res}			47	pF
Q_g	$I_C = 32\text{A}$, $V_{GE} = 15\text{V}$, $V_{CE} = 0.5 \cdot V_{CES}$		146	nC
Q_{ge}			28	nC
Q_{gc}			52	nC
$t_{d(on)}$	Inductive load, $T_J = 25^\circ\text{C}$ $I_C = 32\text{A}$, $V_{GE} = 15\text{V}$ $V_{CE} = 0.6 \cdot V_{CES}$, $R_G = 2.7\Omega$		45	ns
t_{ri}			38	ns
$t_{d(off)}$			270	ns
t_{fi}			250	ns
E_{off}			10.6	mJ
$t_{d(on)}$	Inductive load, $T_J = 125^\circ\text{C}$ $I_C = 32\text{A}$, $V_{GE} = 15\text{V}$ $V_{CE} = 0.6 \cdot V_{CES}$, $R_G = 2.7\Omega$		48	ns
t_{ri}			42	ns
E_{off}			6.0	mJ
$t_{d(off)}$			360	ns
t_{fi}			560	ns
E_{off}			13.5	mJ
R_{thJC}		0.15	0.62	$^\circ\text{C/W}$
R_{thCS}				$^\circ\text{C/W}$
R_{thJA}				$^\circ\text{C/W}$

ISOPLUS i4-Pak™ (HV) (IXGF) Outline



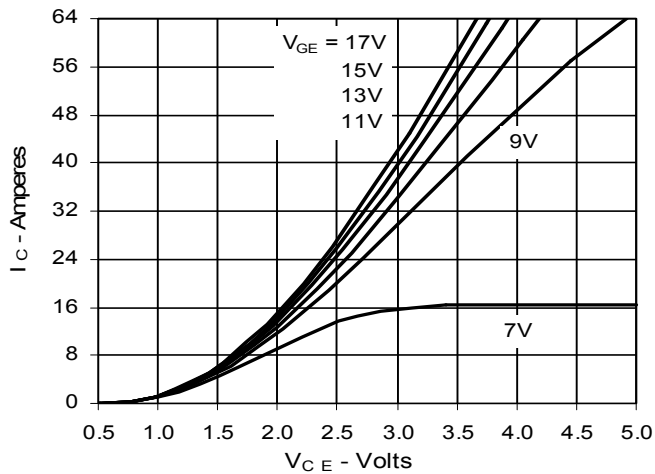
SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.190	.205	4.83	5.21
A1	.102	.118	2.59	3.00
A2	.046	.085	1.17	2.16
b	.045	.055	1.14	1.40
b1	.058	.068	1.47	1.73
C	.020	.029	0.51	0.74
D	.819	.840	20.80	21.34
E	.770	.799	19.56	20.29
e	.150 BSC		3.81 BSC	
e1	.450 BSC		11.43 BSC	
L	.780	.840	19.81	21.34
L1	.083	.102	2.11	2.59
Q	.210	.244	5.33	6.20
R	.100	.180	2.54	4.57
S	.660	.690	16.76	17.53
T	.590	.620	14.99	15.75
U	.065	.080	1.65	2.03

- Notes: 1. Pulse test, $t < 300\mu\text{s}$; duty cycle, $d < 2\%$.
2. Device must be heatsunk for high temperature leakage current measurements to avoid thermal runaway.

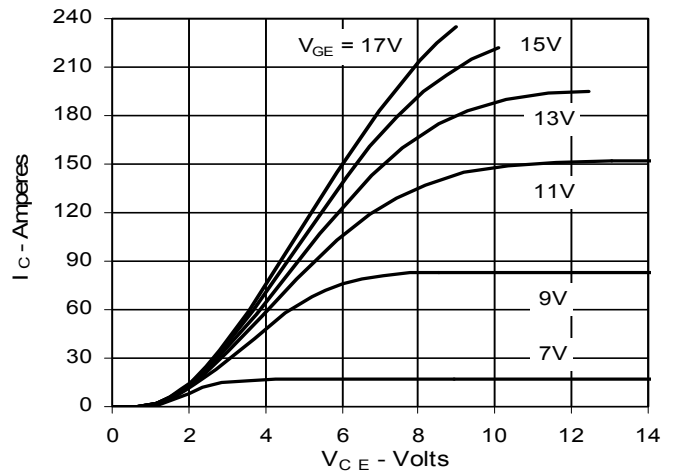
IXYS Reserves the Right to Change Limits, Test Conditions, and Dimensions.

IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:	4,835,592	4,931,844	5,049,961	5,237,481	6,162,665	6,404,065 B1	6,683,344	6,727,585	7,005,734 B2	7,157,338B2
	4,850,072	5,017,508	5,063,307	5,381,025	6,259,123 B1	6,534,343	6,710,405 B2	6,759,692	7,063,975 B2	
	4,881,106	5,034,796	5,187,117	5,486,715	6,306,728 B1	6,583,505	6,710,463	6,771,478 B2	7,071,537	

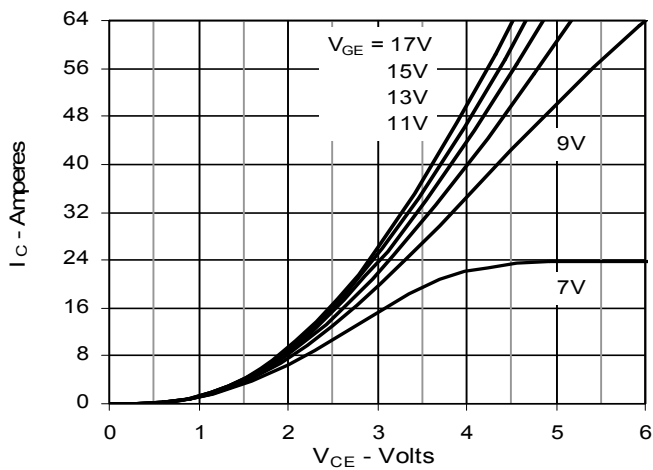
**Fig. 1. Output Characteristics
@ 25°C**



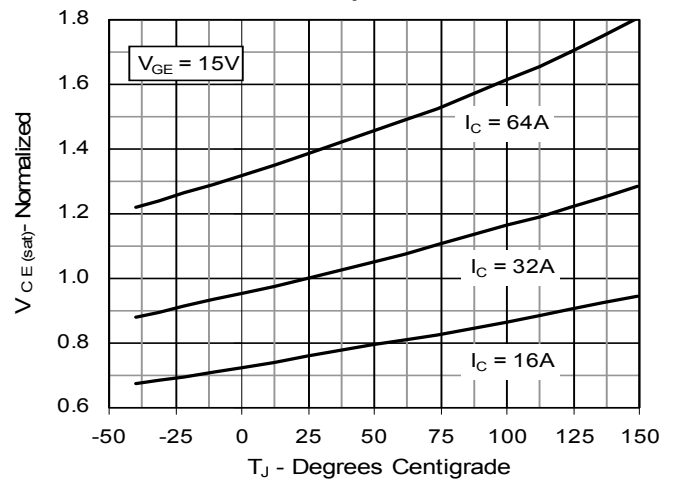
**Fig. 2. Extended Output Characteristics
@ 25°C**



**Fig. 3. Output Characteristics
@ 125°C**



**Fig. 4. Dependence of $V_{CE(sat)}$ on
Temperature**



**Fig. 5. Collector-to-Emitter Voltage
vs. Gate-to-Emitter voltage**

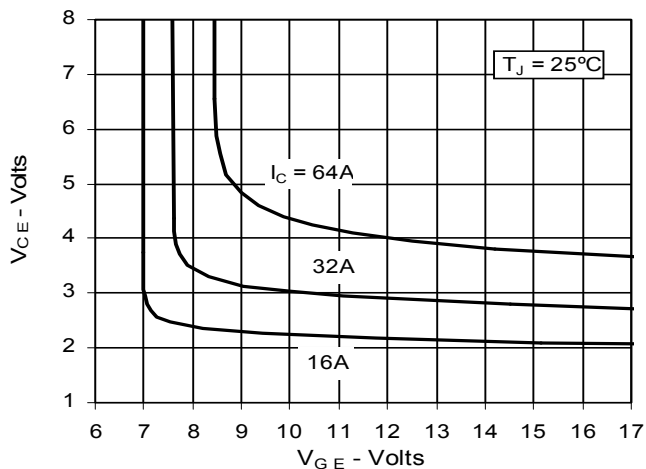


Fig. 6. Input Admittance

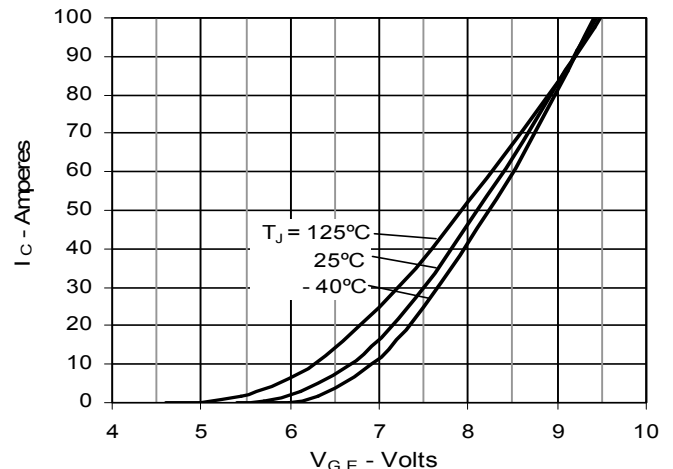


Fig. 7. Transconductance

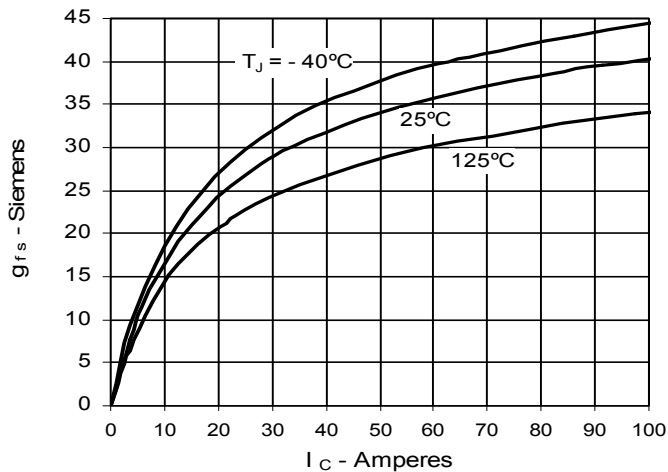


Fig. 8. Gate Charge

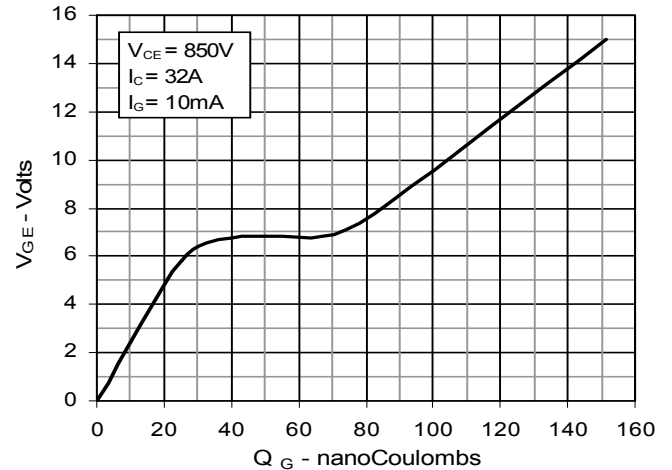


Fig. 9. Capacitance

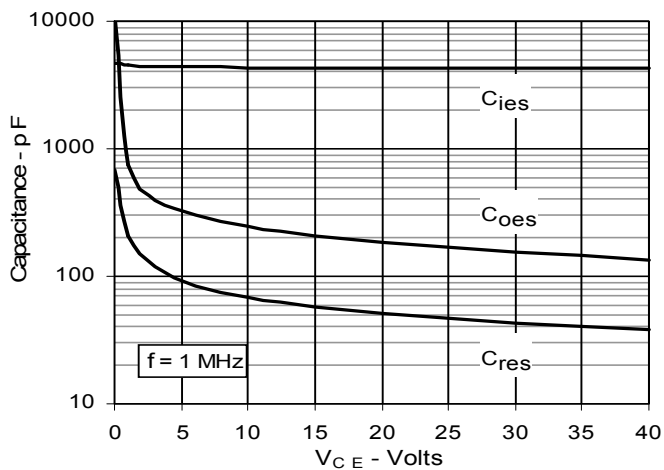


Fig. 10. Dependence of E_{off} on R_G

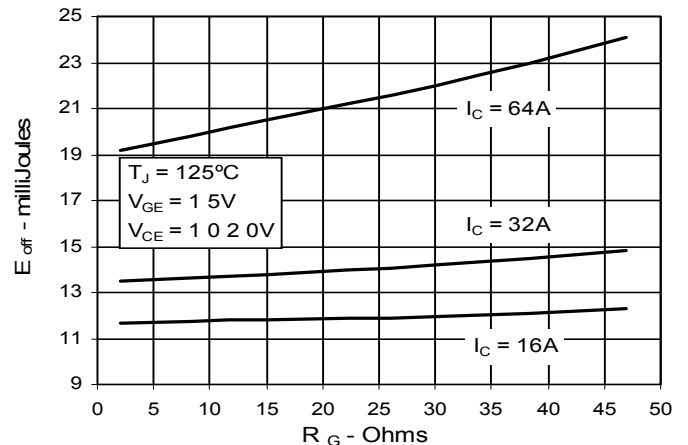


Fig. 11. Dependence of E_{off} on I_C

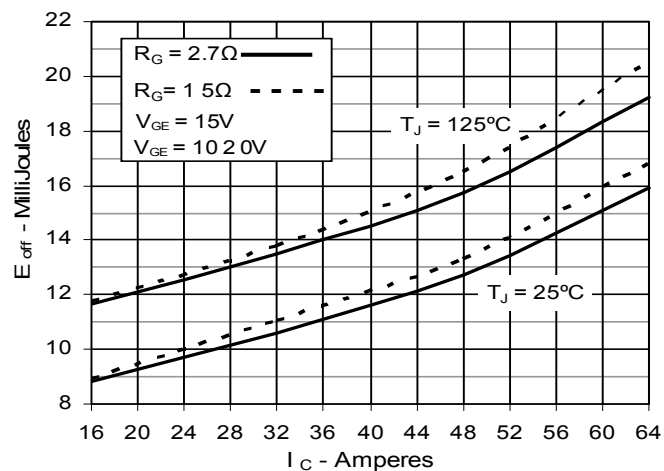


Fig. 12. Dependence of E_{off} on Temperature

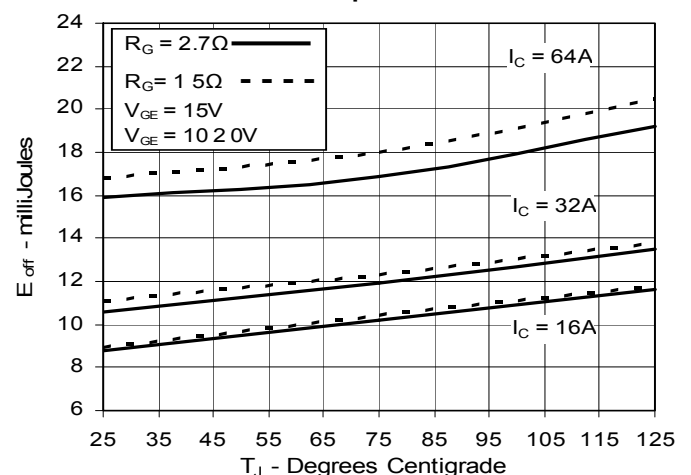


Fig. 13. Maximum Transient Thermal Impedance

