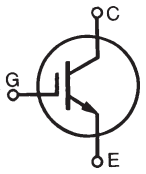
IXYS

High Voltage IGBT
For Capacitor Discharge Applications

(Electrically Isolated Tab)

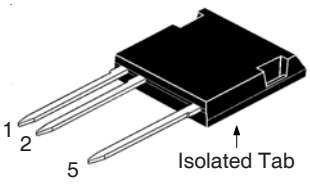
IXGF25N300

V_{CES} = 3000V
I_{C25} = 27A
$V_{CE(sat)}$ ≤ 3.0V



Symbol	Test Conditions	Maximum Ratings	
V_{CES}	T_J = 25°C to 150°C	3000	V
V_{CGR}	T_J = 25°C to 150°C, R_{GE} = 1MΩ	3000	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	T_C = 25°C	27	A
I_{C90}	T_C = 90°C	16	A
I_{CM}	T_C = 25°C, V_{GE} = 20V, 1ms	140	A
SSOA	V_{GE}= 20V, T_{VJ} = 125°C, R_G = 5Ω	I_{CM} = 160	A
(RBSOA)	Clamped Inductive Load	$V_{CE} \leq 0.8 \bullet V_{CES}$	
P_C	T_C = 25°C	114	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
T_L	1.6 mm (0.062 in.) from Case for 10s	300	°C
T_{SOLD}	Plastic Body for 10s	260	°C
F_C	Mounting Force	20..120/4.5..27	Nm/lb-in.
V_{ISOL}	50/60Hz, 1 Minute	4000	V~
Weight		5	g

ISOPLUS i4-Pak™



1 = Gate 5 = Collector
2 = Emitter

Features

- Silicon Chip on Direct-Copper Bond (DCB) Substrate
- Isolated Mounting Surface
- 4000V Electrical Isolation
- High Peak Current Capability
- Low Saturation Voltage
- Molding Epoxies Meet UL 94 V-0 Flammability Classification

Applications

- Capacitor Discharge
- Pulser Circuits

Advantages

- High Power Density
- Easy to Mount

Symbol	Test Conditions (T_J = 25°C, Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.	
BV_{CES}	I_C = 1mA, V_{GE} = 0V	3000			V
$V_{GE(th)}$	I_C = 250μA, V_{CE} = V_{GE}	3.0		5.0	V
I_{CES}	V_{CE} = 0.8 • V_{CES}, V_{GE} = 0V			50	μA
	Note 2 ,T_J = 125°C			1	mA
I_{GES}	V_{CE} = 0V, V_{GE} = ±20V			±100	nA
$V_{CE(sat)}$	I_C = 25A, V_{GE} = 15V, Note 1			3.0	V
	I_C = 75A			5.5	V

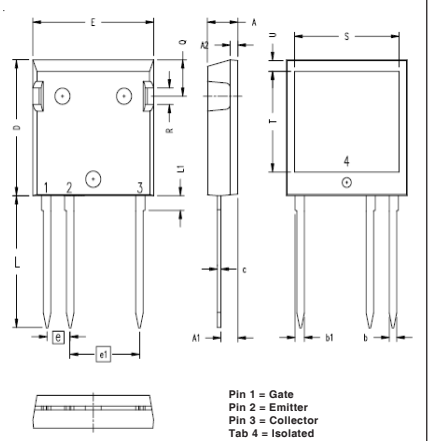
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Symbol	Test Conditions (T_J = 25°C, Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.
g_{fs}	I_C = 50A, V_{CE} = 10V, Note 1	16	26	S
$I_{C(ON)}$	V_{GE} = 15V, V_{CE} = 20V, Note 1		240	A
C_{ies}	V_{CE} = 15V, V_{GE} = 20V, f = 1MHz		2970	pF
C_{oes}			98	pF
C_{res}			36	pF
$Q_{g(on)}$	I_C = 50A, V_{GE} = 15V, V_{CE} = 0.5 • V_{CES}		75	nC
Q_{ge}			15	nC
Q_{gc}			30	nC
$t_{d(on)}$	**Resistive Switching Times**		70	ns
t_r	I_C = 25A, V_{GE} = 15V		240	ns
$t_{d(off)}$	V_{CE} = 1500V, R_G = 5Ω		220	ns
t_f			500	ns
R_{thJC}				1.10 °C/W
R_{thCS}			0.15	°C/W
R_{thJA}			30	°C/W

Notes:

1. Pulse test, t < 300μs, duty cycle, d < 2%.
2. Device must be heatsunk for high-temperature leakage current measurements to avoid thermal runaway.

ISOPLUS i4-Pak™ (HV) Outline



Pin 1 = Gate
Pin 2 = Emitter
Pin 3 = Collector
Tab 4 = Isolated

SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS 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

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 4,850,072 4,881,106 4,931,844 5,017,508 5,034,796 5,049,961 5,063,307 5,187,117 5,237,481 5,381,025 5,486,715 6,162,665 6,259,123 B1 6,306,728 B1 6,404,065 B1 6,534,343 6,583,505 6,683,344 6,710,405 B2 6,710,463 6,727,585 6,759,692 6,771,478 B2 7,005,734 B2 7,063,975 B2 7,071,537 7,157,338B2



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