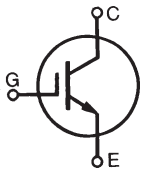
IXYS

High Voltage IGBT
For Capacitor Discharge Applications

(Electrically Isolated Tab)

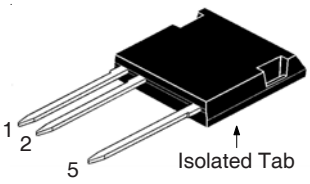
IXGF25N300

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

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

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

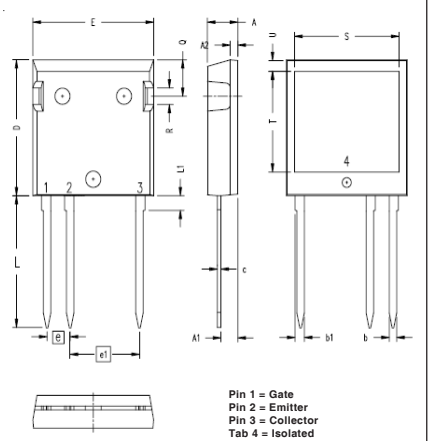
- High Power Density
- Easy to Mount

Symbol	Test Conditions (T_J = 25°C, Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.
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

Mouser Electronics

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IXYS:
IXGF25N300