IXYS

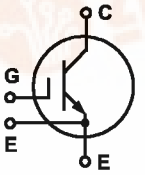
High Voltage IGBT

IXDN 75N120A

V_{CES} = 1200 V
I_{C25} = 120 A
$V_{CE(sat)\ typ}$ = 2.5 V

Short Circuit SOA Capability

Preliminary Data



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		120	A
I_{C90}	T_C = 90°C		70	A
I_{CM}	T_C = 25°C, 1 ms		240	A
SSOA (RBSOA)	V_{GE} = 15 V, T_{VJ} = 125°C, R_G = 22 Ω Clamped inductive load, L = 30 µH		I_{CM} = 150 @ V_{CES}	A
t_{SC} (SCSOA)	V_{GE} = 15 V, V_{CE} = V_{CES}, T_J = 125°C R_G = 22 Ω, non repetitive		10	µs
P_C	T_C = 25°C	IGBT	630	W
V_{ISOL}	50/60 Hz I_{ISOL} ≤ 1 mA	t = 1 min t = 1 s	2500 3000	V~ V~
T_J			-40 ... +150	°C
T_{JM}			150	°C
T_{stg}			-40 ... +150	°C
M_d	Mounting torque Terminal connection torque (M4)		1.5/13 1.5/13	Nm/lb.in. Nm/lb.in.
Weight			30	g

Symbol	Test Conditions		Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
BV_{CES}	I_C = 5 mA, V_{GE} = 0 V		1200			V
$V_{GE(th)}$	I_C = 3 mA, V_{CE} = V_{GE}		4	5.5	6.5	V
I_{CES}	V_{CE} = V_{CES}, V_{GE} = 0 V	T_J = 25°C		1.6	2	mA
	V_{CE} = 0.8 • V_{CES}, V_{GE} = 0 V	T_J = 125°C		4	5	mA
I_{GES}	V_{CE} = 0 V, V_{GE} = ±20 V				±500	nA
V_C	= 15 V			2,5	3	V

miniBLOC, SOT-227 B

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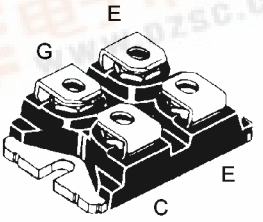


E = Emitter ✶, C = Collector
G = Gate, E = Emitter ✶

✶ Either Emitter terminal can be used as Main or Kelvin Emitter

Features

- Square RBSOA
- International standard package miniBLOC
- Isolation voltage 3000 V~
- Low $V_{CE(sat)}$
  - for minimum on-state conduction losses
- High switching speed

Applications

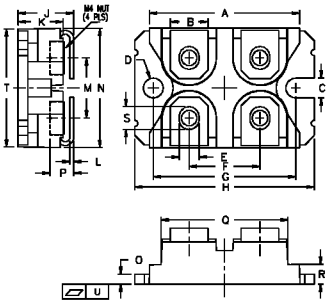
- AC motor speed control
- DC servo and robot drives
- DC choppers
- Uninterruptible power supplies (UPS)
- Switch-mode and resonant-mode power supplies

Advantages

- Space savings
- Easy to mount with 2 screws
- High power density

Symbol	Test Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
C_{ies}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		5100		pF
C_{oes}			720		pF
C_{res}			380		pF
Q_g	I_C = 75 A, V_{GE} = 15 V, V_{CE} = 0.5 V_{CES}		TBD		nC
Q_{ge}			TBD		nC
Q_{gc}			TBD		nC
$t_{d(on)}$	**Inductive load, T_J = 125°C**		30	60	ns
t_{ri}	I_C = 75 A, V_{GE} = 15 V,		70	140	ns
$t_{d(off)}$	V_{CE} = 0.5 V_{CES}, $R_{on/off}$ = 15 Ω		450	600	ns
t_{fi}	Remarks: Switching times may increase		70	100	ns
E_{on}	for V_{CE} (Clamp) > 0.5 • V_{CES}, higher T_J or		13		mJ
E_{off}	increased R_G		8.5		mJ
R_{thJC}				0.2	K/W
R_{thCK}			0.1		K/W

miniBLOC, SOT-227 B



M4 screws (4x) supplied

Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	31.5	31.7	1.241	1.249
B	7.8	8.2	0.307	0.323
C	4.0	-	0.158	-
D	4.1	4.3	0.162	0.169
E	4.1	4.3	0.162	0.169
F	14.9	15.1	0.587	0.595
G	30.1	30.3	1.186	1.193
H	38.0	38.2	1.497	1.505
J	11.8	12.2	0.465	0.481
K	8.9	9.7	0.351	0.382
L	0.75	0.85	0.030	0.033
M	12.6	12.8	0.496	0.504
N	25.2	25.4	0.993	1.001
O	1.95	2.05	0.077	0.081
P	-	5.0	-	0.197